



Food, Nutrition & Health Challenges

BBSRC public dialogue: final report

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Hopkins Van Mil: Creating Connections
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About BBSRC

BBSRC invests in world-class bioscience research and training on behalf of the UK public. BBSRC's aim is to further scientific knowledge, to promote economic growth, wealth and job creation and to improve quality of life in the UK and beyond.

Funded by Government, BBSRC has a total budget of around £500 million a year (2012-13) which includes spend to support research and training in universities and strategically funded institutes. BBSRC research and the people they fund are helping society to meet major challenges, including food security, green energy and healthier, longer lives. BBSRC's investments underpin important UK economic sectors, such as farming, food, industrial biotechnology and pharmaceuticals.

For more information about BBSRC, see: www.bbsrc.ac.uk

About Hopkins Van Mil: Creating Connections

Hopkins Van Mil: Creating Connections facilitates engagement to gain insight. As expert facilitators HVM creates safe, neutral and productive spaces in which to access people's views on the content which matters to them, to stakeholders and to communities. The team works flexibly and builds trust using best practice guidance including Sciencewise-ERC principles. HVM has a track record in preparing for, designing and facilitating effective dialogue on complex and emotive subjects. They are skilled at working in collaboration with commissioning bodies, scientists and analysts to provide a forum to discuss complex scientific information in ways that are accessible for comment and review by members of the public with varying degrees of knowledge of the issue.

For more information about Hopkins Van Mil: Creating Connections see: www.hopkinsvanmil.co.uk

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Executive summary

Background

This report describes the findings from a two session dialogue commissioned by BBSRC involving 19 members of the public. In facilitated discussions participants considered the challenges in the food, nutrition and health space BBSRC should focus on. This included conversations on:

- What matters to people about food, nutrition and health;
- Perceptions of BBSRC's role in research on food, nutrition and health;
- The research challenges which are priorities for the public compared with those already being considered by BBSRC;
- The implications for BBSRC as it sets out its strategic framework.

Using a range of dialogue tools participants considered their priorities for consideration by BBSRC. The views described and analysed in the report are drawn exclusively from the public dialogue and the presentations given during the two sessions. Participants were pressed to consider why they felt particular ideas around food, nutrition and health were important and probed further on their views on steps to a healthier society and key players involved in this work.

What matters to people?

The report describes the themes which emerged around what matters to participants in terms of their own and their families' health. They focus on concerns such as:

- A desire to understand how food and nutrition can play a role in disease prevention,

'I'm paranoid about it [cancer] and want to eat food that will help me remain healthy, eating things that will prevent cancer.'

'My sister-in-law had a health scare last year and it made me realise that I have to look after what I eat more if I want to live long and have a good quality of life.'

- Eating organic, chemical free food that does not, in its production or distribution, exploit people in developing economies or more broadly the poor in society,

'[Eating] a diet high in the appropriate amounts of vitamins and minerals, a whole food diet devoid of processed / synthesized foods.'

'There are economic implications to the healthy eating discussion...kids in my street go to sleep having only had a bag of chips for their tea.'

- An understanding of the importance of a balanced diet,

'I am aware of the balance needed and try to eat a balanced diet.'

- A desire for factually correct, objective, clear and non-contradictory information on food, nutrition and health. Participants expressed doubts about the trustworthiness of information they receive through print and broadcast media,

'We are told something is good one minute and bad the next like red wine, salt and sugar. It is very confusing and often contradictory.'

'I didn't trust the information [read in a newspaper], I felt it was headline grabbing.'

- A mistrust of the motives of the food industry in communicating information about food, nutrition and health,

'The food industry is a multi-million pound industry hence they keep their customers in the dark as much as possible.'

'Sugar free and fat free foods, I feel that this is a lie - it is a shame that people don't know that this is a sham.'

Perceptions of BBSRC's role

- Most participants were very positive about BBSRC's role,

'I feel more informed about BBSRC - I didn't know how these studies came about before tonight.'

'I feel more aware about their structure / goals and I'm reassured to know that such a body exists'.

- A degree of surprise was expressed about the scale of BBSRC's budget but with a feeling that this is money well spent and that food nutrition and health are important areas for scientific research,

'It is very important that research and funding [are made available] into essential factors which will affect future populations.'

- Many felt that it was good to hear that BBSRC are interested in public views on their work,

'I thought that it was important that they want the public's views and that they would listen.'

'[I am] realising that there is an organisation out there whose aim is to make our lives healthier and is interested in change and new ideas.'

- Participants requested clarification on a range of issues including for more information on how BBSRC works with industry; remains independent and communicates its research findings.

Research challenges

Participants were given the opportunity in an iterative process across the two dialogues to discuss what the research priorities should be for delivering a healthy society. These are described in the report as a long list of challenges:

- Understanding how nutrition relates to our physical make-up, **testing the correlation between food and health**;
- Understanding the extent to which society is becoming **more or less resistant to disease** and **more or less susceptible to allergies** in relation to food and nutrition;

- Research into what is **basic good health, the benefits of food / nutrition for health** and an **understanding of what healthy ingredients are**;
- Understanding of the **side-effects of additives in food** and other action to improve nutrition;
- The extent to which **age, gender, other variables** have an **effect on dietary needs at different life stages**;
- Understanding the extent to which **each person** requires their **own genetic health map** which enables a GP to explain what each **individual's health risks** are and **how they can be influenced by diet**.

As a result of further discussion on each of the challenges in the long-list plus those previously identified by BBSRC's Working Group the report sets out the results of the participants' work on a list of areas they perceived as being priorities for BBSRC research funding. Both small groups independently concluded that BBSRC should prioritise research into:

- Understanding the **behavioural and neurological influences on food intake**;
- The **pros and cons for health of genetically modified food and cloning**.

Other priority areas identified by participants were:

- The benefits of certain foods in **preventing disease**;
- How **nutrition** relates to **mental health**;
- What **healthy ingredients** do for certain parts of the body and the brain;
- Understanding the **side effects of additives in food** and other action to improve nutrition;
- The effect of **certain diets and nutrients on different blood types**;
- The effect of **age, gender** and other variables on **diet at different life stages**.

Key players

The report explains that all participants were quite clear that the Government and BBSRC are both highly significant in research to deliver a healthy society. There were a range of views on the role of the Government including delegating food, nutrition and health research to others, but also being responsible for getting a healthy eating message out to health professionals, schools and the general public.

Implications for BBSRC

Within the report we compare the challenges identified by BBSRC's Working Group on Food, Nutrition and Health with those identified by dialogue participants as priority challenges (rather than the long list). This reveals that the public participants independently arrived at similar challenges to those identified by the Working Group. The report describes three areas for BBSRC funded research which were identified as important by participants which are not included in the Working Group's set of challenges. These are:

- How nutrition relates to mental health;
- The side effects of additives in food and other action to improve nutrition;
- The pros and cons for health of genetically modified food and cloning.

The report asks BBSRC to consider the extent to which it wishes to pick up on these participant proposals for areas of focus for BBSRC funded research. Other points described in this report which emerge from the dialogue are that:

- Actors in the food, nutrition and health research system, possibly BBSRC together with the Government, take a lead on communicating the implications of high level research for everyday lives;
- The public, while interested in exploring the societal context of food, nutrition and health, specifically want to know what they should do to eat well to prevent disease and protect their families and future generations and how this information is translated in to action in schools, hospitals and care homes.

The implication for BBSRC, linked to communications, being that it continues to undertake work in public engagement to test the areas that have meaning for the public in their daily lives. Equally to continue to publish research findings in an easily accessible format so that the interested individual knows that this is a resource for them as well as the scientific community.

The report concludes that there are direct correlations, and much agreement, on the research challenges identified by BBSRC's Working Group and those independently identified by participants and that there is a public appetite for simple information on food, nutrition and health and its effect on individuals' lives.

1. Introduction

1.1 Background

Hopkins Van Mil: Creating Connections (HVM) was commissioned by the Biotechnology and Biological Sciences Research Council (BBSRC) in March 2014 to recruit for, design and deliver a small public dialogue. BBSRC is largest UK public funder of non-medical bioscience including cell biology, population biology, genetics, microbiology, genomics, molecular biology and human immunology, carried out by institutes and universities around the UK. The way in which the funding is divided, and how food, nutrition and health fit in to the overall funding picture was described in the presentation by means of the following slide (figure 1).

Where does food, nutrition and health fit in?



The dialogue aimed to help to shape BBSRC's Strategic Framework for research in Food, Nutrition and Health with input from a small but diverse group of public. The dialogue sessions took place on 10 and 12 March 2014 from 6-9 pm in central London and were attended by 19 members of the public.

BBSRC spends about half its money on three science areas



Understanding how what you eat affects your body is a key part of BBSRC's priority to understand how biological processes influence health. We spend about £15M per year on research in this area

Figure 1: BBSRC funding allocation

1.2 Dialogue objectives

The specific objectives of the food, nutrition and health dialogue were, to:

- Engage in meaningful conversations with a public group about what challenges in the food, nutrition and health space BBSRC should focus on;
- Engage in meaningful conversations with the public attendees about the role of different actors in the food, nutrition and health research system (for instance industry, policy makers, research funders and consumers);
- Engage a range of views and values;
- Provide advice which is relevant to BBSRC, and to which BBSRC can respond;
- Demonstrate BBSRC's commitment to open and transparent strategic planning.

1.3 Dialogue framework

Due to the timescale for delivery of the dialogue and a desire to give participants time to reflect while considering the BBSRC research challenges, HVM proposed a framework comprising a two part dialogue over three days allowing for one day's reflection in between the sessions. This also allowed the BBSRC and HVM teams to review the session 1 findings and consider what would be most helpful to participants to progress the session 2 discussion. The structure is illustrated in figure 2.

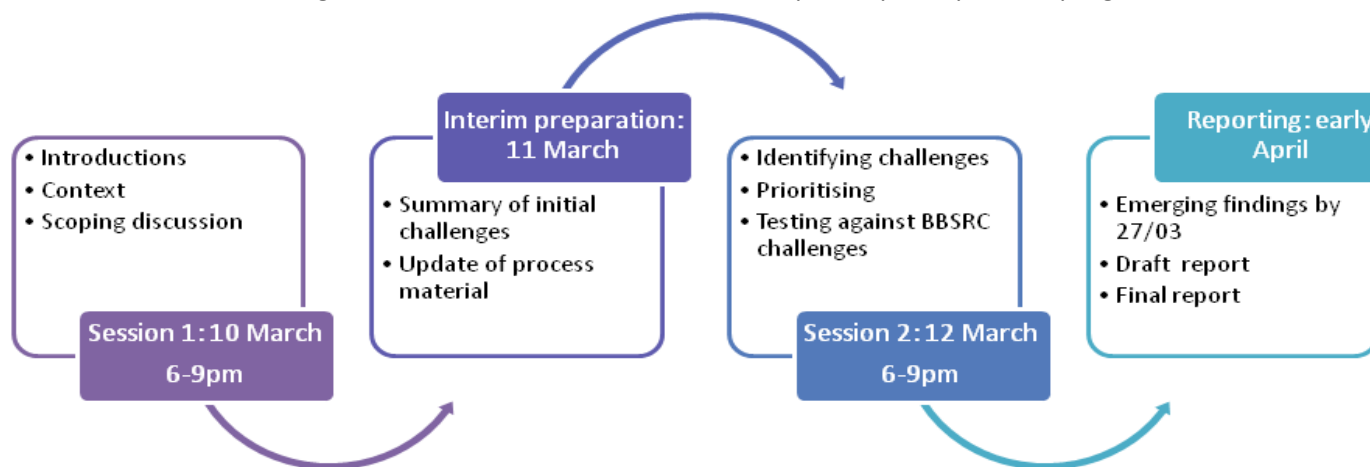


Figure 2: Dialogue structure

1.4 Actors in the dialogue

HVM's design and delivery of the dialogue sessions was guided by the expertise of the following people:

- Patrick Middleton, Head of Engagement, BBSRC
- Mary Travers, Strategy and Policy Manager, Bioscience for Health, BBSRC
- David Gregory, Chair of BBSRC's Working Group on Food, Nutrition and Health
- Richard Mithen, Programme Leader, Institute of Food Research

Each session was attended by a BBSRC observer:

- Matt Goode – Associate Director, Communications and External Relations
- Jef Grainger – Head of Strategy: Bioscience for health.

2. Dialogue methodology

2.1 Recruitment sample

Hopkins Van Mil instructed [Acumen Fieldwork](#) to recruit a sample of 20 people residing in the Greater London area who were broadly representative of the population of the United Kingdom in terms of gender, life stage, social grade / household income, religion and ethnicity. The following table presents an overview of recruitment criteria and targets agreed by BBSRC, which were entirely met.

| Criteria | Target |
|--|---|
| Professionally involved with a food/ nutrition/ health organisation/ company | Those with this experience should be excluded from the study |
| Gender | 50% male / female |
| Age | Good age distribution including 20% of 18-35s |
| Ethnicity | 13% (or current population figures) black and / or minority ethnic |
| Current working status and type | A good spread of people in employment / stay at home parents / unemployed / retired |
| Social grade | 25% A-B, 75% spread over C1-C2-D-E |
| Experience of market research | At least 25% never taken part in a focus group/ public dialogue; the remainder must not have taken part within the last 12 months |
| Experience of the issue | Test question: On a scale of 1-5 how concerned are you about a healthy diet? 1 being not concerned at all, 5 being very concerned. Balanced representation of level of concern |
| Geographic location | Central and Greater London |

Figure 3: Overview of recruitment criteria

2.2 Preparation

HVM worked in close collaboration with BBSRC to make information on the food, nutrition and health challenges accessible for comment and review by members of the public with varying degrees of knowledge of the issue. A *Points to Help the Discussion* document was produced and sent to participants in advance of the first session (see Appendix 1) to ensure all participants had a common level of understanding of the purpose of the dialogue and some key concepts before attending the session.

The document provided an overview of the dialogue objectives; the role of the facilitation team, experts and observers; a description of organisations involved in the food research system; information on how food, nutrition and health research is funded and applied; and discussion ground rules.

Delegate packs, including photocopies of the presentations, a programme for the dialogue day (see Appendix 2) and the *Points to Help the Discussion* were provided in hard copy at the venue.

2.3 Dialogue process

Participants were divided in to two small groups with an even spread of the sample across the two groups. Each group was allocated a dedicated facilitator who worked with the same small group over the two sessions. This enabled participants to become familiar with each other's views; work together on solutions and proposals and feel they were in a trusted situation with both fellow participants and their facilitators.

Presentations by topic specialists provided the framework for small group deliberation and ensured that dialogue participants gradually gained knowledge about the food, nutrition and health research challenges which informed their own thinking.

Monday 10 March 2014

- David Gregory - Chair of BBSRC's Working Group on Food, Nutrition and Health:
Aims and objectives of BBSRC's Strategic Framework and the role of dialogue

Wednesday 12 March 2014

- Richard Mithen - Programme leader, Institute of Food Research:
BBSRC's draft research challenges in Food, Nutrition and Health

Figure 4: Overview of topic specialist presentations

Topic specialists and observers at the sessions sat slightly outside the small groups and were called on by facilitators and participants in both sessions as a resource for clarification and additional information.

2.4 Dialogue structure

The programmes for both sessions are included in Appendix 2 of this report. Participants were guided through the programme by the facilitators using a detailed process plan included as Appendix 3. The process plans for each workshop were designed by HVM with input and sign-off from BBSRC. Session 1 was intended to introduce the issues, provide contextual information and enable an initial scoping discussion so that participants were ready to drill deeper into the issues session 2. Session 1 began with a warm-up discussion on favourite foods which lead to a post-it exercise to consider what for participants is important about food, nutrition and health. From this developed a reflection on where participants hear about food, nutrition and health and the extent to which they trust the information they receive. These two areas were the baseline discussion from which other streams of thought evolved. At this point participants were given the first presentation listed in figure 4 above. Following a break, facilitators worked with the participants in their small groups to consider detailed questions they had on the presentation, anything they found difficult or challenging within it and anything more they wished to know about BBSRC's Strategic Framework. These questions were then put to BBSRC in a plenary discussion.

In the final small group discussion for session 1 participants were asked to think about what they would do if they were in charge of making the UK a healthier society. Specifically they were asked:

1. What would you need to know to help the UK be healthier?
2. Who should find this knowledge (i.e. who does the research)?
3. Who should use the knowledge found?

And to collate their findings in to a summary grid which was presented at the plenary session. To help them in this task each small group was given the same set of stimulus material in the form of laminated cards (see Appendix 4). These gave six examples of BBSRC funded research on food, nutrition and health. Participants were then asked to think about what they saw as the challenges they would face if they were leading on this in delivering a healthier society. The results of the 'What would you need to know' and the challenges discussion, were taken forward for further consideration in session 2. Session 1 ended with a plenary discussion on what views were on the challenges they had identified when they could see the work of both groups together. They were asked specifically to think about the differences and the similarities on the research areas each group had identified.

Session 2 began with a warm-up and baseline session where facilitators asked participants to reflect on what they felt as they left the building after the first session. This served to remind them of what had happened previously and to focus their thinking back on food, nutrition and health challenges. Following this introductory session participants were drawn back to their findings at the end of session 1. Using a *roving ideas storm* dialogue technique a set of 6 research areas were pinned to the wall in a large room to enable participants to move around. The whole group was split in to four sub-groups, the sub-groups then were given 5 minutes to look at each research area and answer two questions:

1. Taking this point that we came up with in our discussions on Monday, what specific areas in food, nutrition and health research does this make you think BBSRC should focus on?
2. Are there other research areas related to this one that you have thought of since Monday?

They were then asked to tick the statements with which they agreed and put a cross against those with which they did not agree. Each sub-group used a different colour pen for their responses so that in the analysis phase the HVM team could see which thoughts had emerged from which group's thinking. This fast-paced process enables participants to raise their front-of-mind thoughts and come to swift conclusions which are probed further in subsequent sessions. In the break that followed the *roving ideas storm* facilitators drew up cards for each small group of the new research areas which had emerged in the discussion. These were then added to pre-prepared cards giving the 6 research areas that had come out of the session 1 discussion. After the break the second presentation in figure 4 was given so that in the subsequent small group discussion participants could compare and rank three sets of research areas:

Those that had come out of the:

1. Session 1 discussions
2. Roving ideas storm findings
3. Food, Nutrition and Health Working Group's deliberations

They were asked to do this by considering what, if anything, they saw as important about each particular research area in turn; what the implications of the research area would be for a healthy society and who would need to act to take on this challenge. At this point the observers and topic specialists were invited to actively join the discussion to help participants decide which of the research areas they felt were really important for BBSRC to focus on through the strategic framework. Each small group was then invited to prioritise those challenges they considered very important so that they could come to the plenary discussion with 5 research areas they felt should be taken forward by BBSRC. The final plenary was an opportunity for participants to compare the prioritisation undertaken by each small group with BBSRC's

existing research areas. Session 2 ended with a summing up by BBSRC and an explanation of what would happen next to the valuable contribution participants had made to BBSRC's future focus. The notes from both dialogue sessions are included in Appendix 5 of this report.

2.5 Dialogue tools

The dialogue approach established two main ways of participants working with facilitators to engage in meaningful conversations with a public group about what challenges in the food, nutrition and health space BBSRC should focus on. Individual and group reflection techniques were employed including:



Individual reflection

- Post-it exercises
- Writing thoughts / posting internet research on the *Ideas Wall*
- Paired discussion
- Prioritising research challenges



Group reflection

- Brainstorming with flip chart recording
- Mapping scenarios for delivering a healthier society
- Roving ideas storm – sub groups moving around the room
- Deliberation on research challenges using postcard prioritisation

All of this was guided by Facilitators who used these tools, prompts and probes to ensure that everyone had their voice heard and their views tested effectively to fully investigate emerging views and opinions. The full process plans are included at Appendix 3.

2.6 Recording views

Throughout both sessions facilitators used flip chart recording to capture the main elements of the discussion and post-its on which participants recorded comments using their own words. HVM consistently use flip chart recording in dialogue process for three main reasons:

1. Participants can see as the dialogue progresses that their views are being listened to and recorded, that they matter and will not be ignored;
2. Facilitators can review the flip charts during the dialogue with participants to ensure that they are an accurate record of what was said;
3. Summaries for the plenary discussions are simply produced following a group consideration of what has been recorded on the flip charts.

Flip chart recording was supported by audio recording for both the small group and plenary discussions. The latter were not fully transcribed but rather used to identify verbatim quotes to include in the report. At the beginning of the session it is explained to participants that it is their comments that are valuable to the dialogue process, not who said what. They therefore understand as the dialogue progresses that their views are recorded but in an anonymous form. In addition to these three core ways of recording the HVM team encouraged dialogue participants to make use of *Any Other Thoughts Cards* on their tables and / or the *Ideas Wall* for comment and ideas that might have taken the panel discussion off-track but should nevertheless be captured, or that they wish to be noted in the report but do not wish to say out loud in

the discussions. *Any Other Thoughts Cards* were handed to the facilitator at the end of each session and have been transcribed for inclusion in the notes from the dialogue (see Appendix 5).

2.7 Analysis

HVM uses a grounded theory approach for analysis. This ensures that the starting point is the data produced by the dialogue sessions, rather than a hypothesis for which evidence is being sought. The team's aim is to look for patterns of similarity and difference of views which can be analysed per dialogue session and across the two sessions. The goal is to generate concepts that explain the way that people reflect on and resolve the central dialogue concerns. Using the grounded theory approach, the steps for analysis were as follows:

1. Identification of anchor points:

In which each of the HVM team members separately reviewed the data write-ups noting their understanding of the anchors around which the key data points can be gathered.

2. Agreement on codes and categories:

Once each team member has identified their views on the anchor points the team discussed them coming to an agreement on codes which define similar content around which the data can be grouped and a theory and recommendations can emerge.

3. Proposing a theory and recommendations:

At the end of March HVM submitted a headline report drawn from these findings which was sent to the Working Group on Food, Nutrition and Health for comment. From this process this final report has been produced.

Working both as individuals and a group to produce the coding frame and the categories and testing them as the process evolves works well with a deliberative dialogue. It allows the findings to emerge from the data and those findings to be validated in an iterative sense through group brainstorming and discussion.

The following sections describe the findings of the public dialogue.

3. What matters to people about food, nutrition and health?

During the dialogue a number of themes emerged about what mattered to participants in terms of their own and their families' health. These are picked up more broadly in section 6 where we discuss challenges and research areas. Some issues are less relevant to BBSRC's area of work than others but are nevertheless important for the public and therefore worth commenting upon. These were not views expressed by all participants, but a significant majority in each case felt these were issues of concern to them and to their family's health.

3.1 Food and disease prevention

A number of participants had a desire to understand the extent to which food and nutrition can play a role in disease prevention. Some participants were concerned that they did not have enough information to make informed choices about food which would help them to prevent serious illness such as cancer. For others, lack of information was not the problem. They felt they knew they could research for themselves the information they needed, but they were more concerned about whether the data they found could be trusted.

'I'm paranoid about it [cancer] and want to eat food that will help me remain healthy, eating things that will prevent cancer.'

'My sister-in-law had a health scare last year and it made me realise that I have to look after what I eat more if I want to live long and have a good quality of life.'

3.2 Organic food

Participants in both groups expressed an interest in eating organic, chemical free food particularly when planning meals for their children. A minority also linked this to ensuring that the food that they eat does not, in its production or distribution, exploit people in developing economies or more broadly the poor in society. They commented,

'[Eating] a diet high in the appropriate amounts of vitamins and minerals, a whole food diet devoid of processed / synthesized foods.'

'There are economic implications to the healthy eating discussion...kids in my street go to sleep having only had a bag of chips for their tea.'

3.3 The cost of healthy living

The affordability of a healthy diet was discussed in both small groups. Participants perceived that eating fresh food costs more and was therefore a barrier to many households buying foods which provide the best nutritional value.

'Taste and price are important. I'd like to buy healthy food for my children but the healthier options are not always affordable.'

3.4 Balanced diet

Broadly the majority of participants had some understanding of the elements of a balanced diet. For some this is common sense and something they don't really need to learn. They listen to their bodies and know when and why they are deciding to eat fast food or options for a healthy diet.

'I am aware of the balance needed and try to eat a balanced diet.'

'Good, quality food keeps the body going. You can't run a car on substandard fuel'

'The healthy eating battle: [I eat] dirty food for a hangover or cleansing food to make me feel alive / awake'

3.5 Food, health and nutrition information

The previous point is balanced by the view of a range of participants who found that the route to a balanced diet is less obvious. Ideally they would like more information and wish they had learned more at school.

'We need education about the food we eat – we were not taught about carbs / proteins in school.'

The majority of participants also felt a concern about where to get factually correct, objective, clear and non-contradictory information on health, nutrition and food. Participants expressed doubts about the trustworthiness of information they receive through print and broadcast media,

'We are told something is good one minute and bad the next like red wine, salt and sugar. It is very confusing and often contradictory.'

'I didn't trust the information [read in a newspaper], I felt it was headline grabbing.'

This is linked to a mistrust of the motives of the food industry, expressed by some participants, in communicating information about food, nutrition and health well. Those that felt this saw the food industry as a block of large corporate entities which kept profit as their primary motivation rather than giving clear information to the public.

'The food industry is a multi-million pound industry hence they keep their customers in the dark as much as possible.'

'There is a lot of advertising and PR by food producers. [It is] hard to know what we can trust.'

'Sugar free and fat free foods, I feel that this is a lie - it is a shame that people don't know that this is a sham.'

4. Perceptions of BBSRC's role

An important strand in the dialogue was the role of BBSRC, both as described in a presentation by David Gregory, Chair of BBSRC's Working Group on Food, Nutrition and Health, and as perceived by participants as the dialogue progressed and in conversation with topic specialists and observers. Most participants were very positive about BBSRC's role. The following comments are typical of the majority of those who participated in the session,

'I feel more informed about BBSRC - I didn't know how these studies came about before tonight.'

'I feel more aware about their structure / goals and I'm reassured to know that such a body exists'.

Participants expressed surprise about the scale of BBSRC's budget although the overall feeling of the group was that this is money well spent and that food nutrition and health are important areas for scientific research,

'How much the government is putting effort in finding out about stuff regarding health and wellbeing of people.'

'It is very important that research and funding [are made available] into essential factors which will affect future populations.'

There was a feeling expressed by many that it was good to hear that BBSRC are interested in public views on their work and had committed to listen to what the dialogue revealed. In general BBSRC's existence was not known prior to their attendance at the dialogue, but they were pleased to hear that such a Research Council did exist and was funding research in to food, nutrition and health.

'I thought that it was important that they want the public's views and that they would listen.'

'[I am] realising that there is an organisation out there whose aim is to make our lives healthier and is interested in change and new ideas.'

Participants requested clarification on a range of issues including more information on how BBSRC works with industry. They were interested in how much BBSRC would be influenced in their funding choices by an industrial lobby and the extent to which BBSRC would engage in debate with industry on the research that is in the best interests of society,

'How often does the BBSRC sit down with industry and challenge their interests?'

Both groups independently wished to know how BBSRC remains independent from the influence of interested parties who wish to have a particular piece of research funded, or would have a vested interest in the funded research being biased towards a particular finding,

'How do remain independent and fresh? Are they genuinely independent?'

Emerging from the fact that participants did not know about BBSRC prior to their attendance at this session, they expressed surprise they were not routinely aware of BBSRC funded research findings given its importance to a healthy society,

'Why don't they make their research public? Why don't we know about it?'

In a plenary session David Gregory talked the group through BBSRC's position in relation to the main issues for clarification such as the dialogue with industry. In addition Patrick Middleton talked about how BBSRC take steps to disseminate research findings using various on and offline media.

5. Research challenges

Participants were given the opportunity in an iterative process across the two dialogues to discuss what the research priorities should be for delivering a healthy society. The challenges identified by participants were then prioritised at the second dialogue session in the light of a presentation by Richard Mithen, a member of BBSRC's Working Group on Food, Nutrition and Health.

5.1 Research challenges long-list

The long list of challenges identified by participants are listed below with a summary of themes of the discussion which led to that research area being considered important.

Participants showed a particular interest in preventing the over-consumption of sugar, salt and fat and on the effect increased consumption has on health and nutrition, particularly for children. The resultant challenge was:

- *Understanding how nutrition relates to our physical make-up, testing the correlation between food and health.*

The groups discussed the whole concept of nurture versus nature in food, nutrition and health debates. From this emerged questioning around how much is known about the difference between allergies that are inherited and allergies that are a result of poor nutrition and additives. The resultant challenge was:

- *Understanding the extent to which society is becoming more or less resistant to disease and more or less susceptible to allergies in relation to food and nutrition.*

The benefits of water, exercise and a balanced diet ranked as an area of interest to many participants. The resultant challenge was:

- *Research into what is basic good health, the benefits of food / nutrition for health and an understanding of what healthy ingredients are.*

There was a clear sense, given the confusion described above in the food, nutrition and health messaging seen in the print and broadcast media that participants wanted clearer guidance on, for example, preservatives and food additives, particularly those additives which are promoted as having nutritional benefits such as folic acid added to bread. The resultant challenge was:

- *Understanding of the side-effects of additives in food and other action to improve nutrition*

Significant interest was expressed in the differences in nutritional requirements for the elderly, children and babies and how food relates to mental as well as physical health. The resultant challenge was:

- *Does age, gender, other variables have an effect on dietary needs at different life stages?*

Participants to varying degrees were interested in how high level research funded by BBSRC might have an implication for a specific individual's health. They were keen to understand how they could learn from BBSRC's research programmes and how society could apply them. This relates again to the nurture / nature debate and is an indication of how interested participants were in the extent to which a person's health is determined by genes and how much by diet and lifestyle. The resultant challenge was:

- *Understanding the extent to which each person requires their own genetic health map which enables a GP to explain what each individual's health risks are and how they can be influenced by diet.*

5.2 The priority list of research challenges

As a result of further discussion on each of the challenges in the long-list, plus those previously identified by BBSRC's Working Group participants worked on a list of areas they perceived as being priorities for BBSRC research funding.

Both small groups independently concluded that BBSRC should prioritise research into:

- Understanding the behavioural and neurological influences on food intake;
- The pros and cons for health of genetically modified food and cloning.

Other priority areas identified by participants were:

- The benefits of certain foods in preventing disease;
- How nutrition relates to mental health;
- What healthy ingredients do for certain parts of the body and the brain;
- Understanding the side effects of additives in food and other action to improve nutrition;
- The effect of certain diets and nutrients on different blood types;
- The effect of age, gender and other variables on diet at different life stages.

Each of these research areas reveal the majority of participants' desire to understand at quite an in-depth level how the food they eat affects health at an individual level. This includes those participants who found the information as it was presented to be too technical and complex. The implicit point is that the public do not blithely accept food, nutrition and health messages from any source. They want to be able to trust the source, to know what bio-science research is being funded and how the research being funded could have an impact on their own life choices. They need data to be presented in straightforward Plain English and to be targeted at the general public as well as the research community. The following statements from participants reflect the tenor of the discussion,

'Support and education [is] needed for people to know what to feed babies / small children.'

'It would help me to pinpoint more accurately the choices I would need to make to live longer and to educate my child / their children to live longer.'

'It is important, but for me it needs to be delivered in a simple way so the everyday person understand what it means and what they need to do.'

'[Information on BBSRC research] will enable us to know exactly how much of something we can eat without damaging our bodies.'

'I find this interesting and feel it is the starting block for future practical health benefits.'

5.3 Challenges in delivering a healthy society

Participants brainstormed the challenges faced by those in charge of delivering a healthy society. Both groups mentioned that at the heart of the challenge is understanding what basic good health is and what nutrients benefit health,

'How does the lay person know what to buy and what not to buy?'

Communicating the benefits of healthy nutrients to people from different backgrounds, cultures and beliefs was a particular concern of one of the groups, as was the lack of control over the media and a potential loss of jobs in the food industry. The question,

'Is there a scientific definition of what healthy is?'

was important to participants as it was felt that without a clear answer to this those making decisions about a healthier society would have no clear path to how to deliver it. Richard Mithen was clear to participants that the short answer was that there is no clear definition. However, he explained that a useful way of thinking about 'being healthy' was to consider how people's bodies are able to respond to the biological challenges they experience.

5.4 Key players in the food, nutrition and health research system

At various points in the dialogue participants were asked to consider who has a role in the food, nutrition and health research system. All participants were quite clear that the Government and BBSRC are both highly significant in research to deliver a healthy society. There were a range of views on the role of the Government including delegating food, nutrition and health research to others but also being responsible for getting clear information and a healthy eating message out to health professionals, schools and the general public. Below this tier of importance, a range of other organisations were mentioned ranging from food producers and manufacturers to at a grass roots levels, schools, care homes and individuals, particularly parents.

6. Implications for BBSRC

6.1 A comparison between BBSRC and the public's identified research challenges

If we compare the challenges identified by BBSRC's Working Group on Food, Nutrition and Health with those identified by dialogue participants as priority challenges (rather than the long list) we see some overlap (see figure 1), particularly in BBSRC's challenges 1 and 2¹.

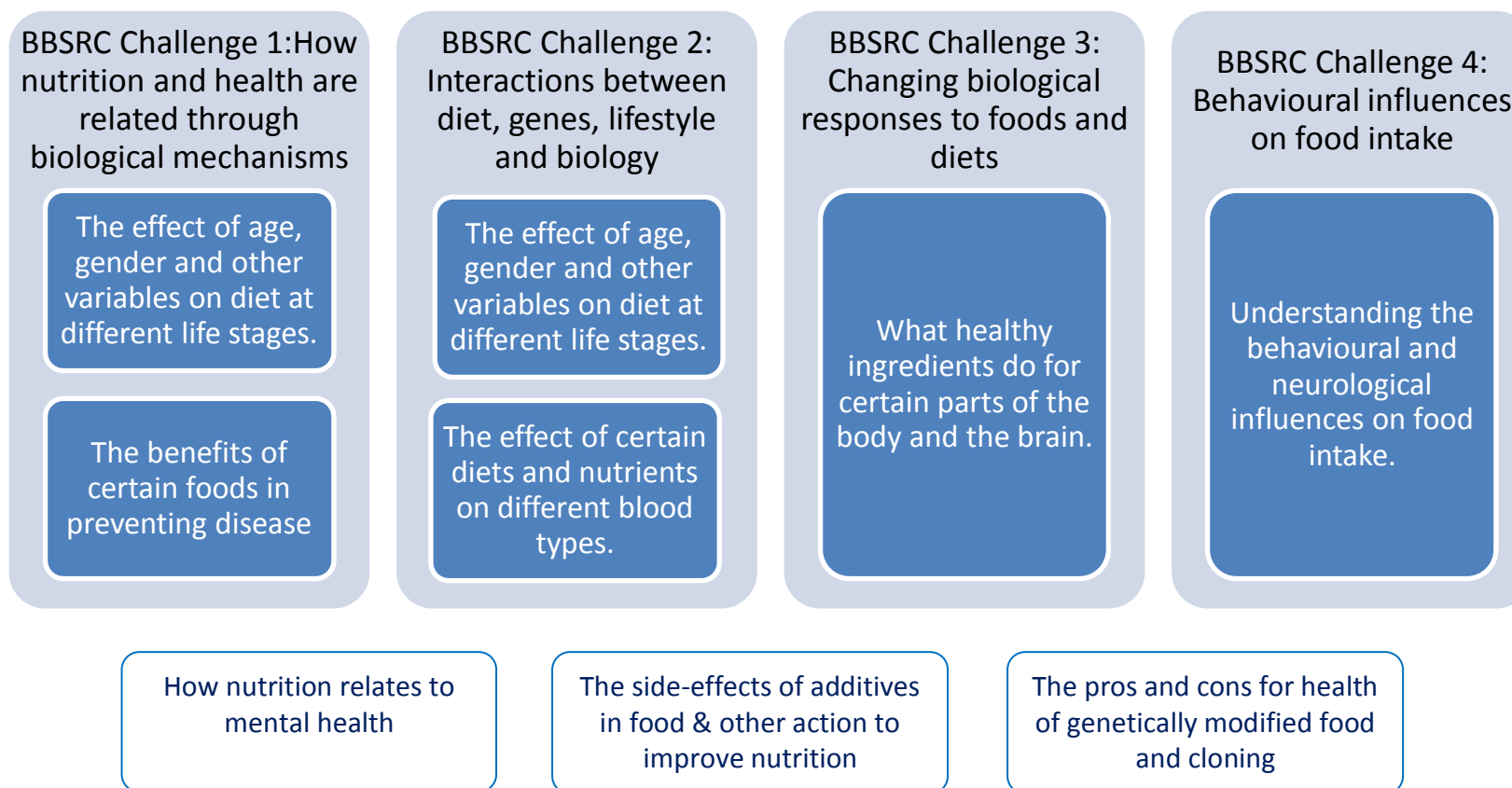


Figure 1: Comparison of challenges

¹ BBSRC challenges are in the pale blue boxes, comparable participant priority challenges are in the darker blue boxes and those which do not fit BBSRC challenges well are in the white boxes.

Having gained an understanding of BBSRC's role, participants nevertheless felt that BBSRC funded research, perhaps in collaboration with the Medical Research Council might also consider how nutrition relates to mental health. As some participants said,

'Does a bad diet affect your mind?'

'Why do certain foods cause stress, anxiety or depression?'

The public also thought it was important that BBSRC research should think about the side effects of additives in food and other action to improve nutrition. They were concerned that society did not fully understand the long-term effects of adding fluoride to water or folic acid to bread for example; or perhaps that some elements of society did understand such as the food industry or the research community, but these had not been adequately explained to the public.

One research challenge identified by the public which does not correlate to any of the challenges identified by BBSRC is that participants were keen for further research on the pros and cons for health of genetically modified food and cloning. One group noted,

'What are the long-term effects of genetically modified food on human beings?'

And the other group discussed enriching of the soil in which food is grown as an alternative to,

'[...] The controversial GM method'.

This links to the concern about additives in food, but is a discrete area in itself where people feel that the discussion on genetically modified food is ongoing. Some participants felt that with world populations rising further research in to GM crops would be important as part of a range of measures.

'Research is necessary so that the ever increasing growing population can feed nutritiously and be healthy'.

This was picked up in the final plenary session where BBSRC responded by saying that for scientists the GM debate has been largely concluded. However, it can be seen in this dialogue that for the public it is still an area which is very unclear in terms of food, nutrition and health. The implication for BBSRC is that the public continues to need to be taken on a journey of clarification and understanding as they have not to date been brought along with the scientific community in the thinking on this issue. The Working Group should also consider the extent to which it wishes to include in its research challenges a collaboration with the Medical Research Council on the extent to which nutrition plays a role in mental health and the side-effects of additives in food.

6.2 Communicating BBSRC's role

A second implication for BBSRC from the dialogue is that BBSRC's presentations at the dialogue made it clear to participants that underpinning science messages are being communicated effectively to the scientific community who as a result can learn from them and bid for funding for further high level research in the field. For the public however, there is a value in one of the actors in the food, nutrition and health research system, possibly BBSRC together with the Government, taking a lead on communicating the implications of high level research for everyday lives. Participants had a strong desire for information on new research which is consistent, trustworthy and open. As emerged throughout the dialogue this is related to a need for the use of simple language in communicating often complex scientific ideas as participants wish to translate the findings in to healthy, balanced diets for themselves and their families.

6.3 Society and the individual

When considering the implications of the research challenges for those involved in the food, nutrition and health research system, the small groups deliberated on a number of issues. They felt that people being more aware of the relationship between food, nutrition and health could lead to an alleviation of pressure on the health care system; a population able to make more informed choices as clear guidance becomes available with a potential decrease in food related disorders; and a reduction in the number of people who are hungry due to the availability of GM food.

Concerns include doubts about whether food manufacturers will change in line with the market's demand for healthier food. A high number of participants were cynical about industry being able to think beyond a profit. Participants also felt that it was essential that those working on issues of food, nutrition and health, should think beyond UK borders and consider how other countries, particularly developing countries, could benefit from, and collaborate in, this type of research in the short term.

The dialogue demonstrated that the public is primarily concerned with the implications of food, nutrition and health research at an individual level. While they are happy to explore the societal context, they want to know what they should do to eat well to prevent disease and protect their families and future generations. They are also interested in this for those delivering the services that affect them such as schools, hospitals and care homes.

An implication for BBSRC, linked to communication, is that it continues to undertake work in public engagement to test the areas that have meaning for the public in their daily lives. Equally important is that the BBSRC continues to publish research findings in an easily accessible format perhaps promoting more effectively the Twitter feed and Youtube channels so that the interested individual knows that this is a resource for them as well as the scientific community.

6.4 Conclusion

From a dialogue delivery perspective HVM believes that these two dialogue sessions led to some interesting findings for BBSRC. We find that there are direct correlations, and much agreement, on the research challenges identified by BBSRC's Working Group and those independently identified by participants. It is also clear that the public have an appetite for knowing more about BBSRC and in being one of the target audiences which receives information on research findings. They wish to be informed at an individual level on food, nutrition and health and its implications so that they can make better choices for their own and their family's health and as such collectively create a healthier society. For this reason it is important that research findings are communicated in simple, straightforward terms using channels which will reach them and can be trusted.

Hopkins Van Mil is very grateful to the members of the public who took part in the dialogue for the way they embraced what for many was a new process. The willingness of participants to process complex information and deliberate on issues they had perhaps not considered before enabled the facilitation team to gain a clear understanding of the main issues and concerns regarding food, nutrition and health challenges.

BBSRC has demonstrated an equally great commitment. David Gregory convened the workshops in a delightful manner and Richard Mithen gave excellent explanations of complicated concepts. It has been a pleasure working with Patrick Middleton, Mary Travers and Emma Longridge who played an important role in keeping the project on time and to a high standard, ensuring an excellent set of accessible materials was made available to the participants.

Hopkins Van Mil: Creating Connections
April 2014

Appendix 1: Food, nutrition and health challenges

Public Dialogue

Points to Help the Discussion

1. Background

The purpose of the public dialogue discussions you will be taking part in on 10 and 12 March is to engage in meaningful conversations on:

- The challenges in the food, nutrition and health space on which the Biotechnology and Biological Sciences Research Council (BBSRC) should focus;
- The role of different organisations in the food, nutrition and health research system (for instance industry, policy makers, research funders and consumers).

The discussion we have at the sessions will be run by independent facilitators Hopkins Van Mil: Creating Connections who specialise in helping groups to have meaningful conversations. The sessions are intended to be enjoyable, interesting and enhance participants' and BBSRC's thinking on food, nutrition and health.

2. Before you come to the dialogue sessions

There is a lot to discuss at the workshops. So before you come to the session it will be helpful if you have read this document in full. The last section (h) gives you a list of organisations involved in the food research system which are relevant to our discussions.

3. Points to remember during the discussion

To make a good discussion possible at the workshops please read and remember the following:

a) Small group allocation

- You have been randomly allocated to one of two small discussion groups. Your group may change during the workshop process and we will decide this at the end of workshop 1.

b) Confidentiality

- Points made during the small group discussions will be recorded on flip charts and parts of the session will be recorded on a voice recorder. At the end of each session, we will have a record of all the views expressed but not who said what. The recorded views will form the basis of a findings report which will be shared with participants after the event. Voice recordings will be deleted after the analysis phase.

c) What we'll be talking about

- Over the two sessions expert witnesses will make presentations on the dialogue themes. Some of the words used may need an explanation. We have provided this in section h of this document - so do have a look if you would find it useful to think about these words before our first roundtable on 10 March.
- If there are any words or phrases used during the presentations or discussions that you do not understand please let your facilitator know. They will work with you to make sure everything is as clear as possible for everyone.

d) Making the conversation easier

- It is helpful if people are positive in their comments (even if you disagree with someone) – constructive criticism is often very effective in an open discussion.
- Understand that everyone's input is equally valuable, and the facilitators will record everything that informs the discussion.
- Please allow everyone a fair and equal opportunity to speak and try not to interrupt. The facilitators will note that you are trying to make a comment and give you time as appropriate.
- Please don't take part in side conversations as it makes it harder for everyone to hear and take part.
- Do remember that there are no 'stupid' questions, we're all here to learn, understand and move the thinking forward on food, nutrition and health.
- Please come from breaks promptly and help the facilitators to stick to time.
- Please do not use mobile phones during the discussions as it can be distracting for the group. You may wish to check a fact on the phone during the discussion, but we will have a number of experts in the room who will be able to help you with that so do ask your facilitator if you need to know more on the issue at hand.

e) Experts

During the sessions we will be listening to short presentations from experts on food, nutrition and health. These are to help us gain an understanding of the issues. Experts will take part in the discussion to answer questions and clarify the things they have said. They will not join in with the small group discussions, except in specific sessions in the second workshop, but they will observe the discussions to listen to what is being said.

f) Your facilitator

- The facilitator is the person who helps your group with the discussion. Please remember that the facilitator is there to keep the roundtable discussion to time, to give everyone a chance to make the comments they wish to make and to record all relevant discussion. So do turn to anyone on the facilitation team for advice if you need more support to make a comment.

g) Observers

- Representatives from BBSRC will be present to observe the process. They are not in the room to take part in the discussion so please don't worry if they don't make any comments, they are listening to what takes place to understand the views of the public on food, nutrition and health.
- In addition, Carl Reynolds from 3KQ will be present. Carl is there to evaluate the process and test the extent to which the discussion meets the project objectives. Carl will ask members of the group to take part in short evaluation activities. He will invite people to do so at the session.

h) Organisations involved in the food research system

Here are some organisations in the food research system which may be mentioned at the sessions with a brief explanation of their role. Broadly there are two main 'players': private industry and public sector bodies. There are others such as charities, co-operatives and consumers.

Funding research...

1. Industry funded research

Companies, such as seed companies, food processors or supermarkets, often fund research to improve their products or services.

An example from outside the food research system might be BMW researching fuel efficiency in engines.

2. Government department funded research

Government departments invest in research for a range of reasons including to help them make decisions about what policies to pursue or to address a specific need that companies might not want to fund.

An example from outside the food research system might be Government funding research into flood defences.

3. Research Council funded research

Research Councils invest public funds in research. This can range from understanding the fundamentals of our world to trying to address big social challenges.

An example from outside the food research system might be research to look into the origin of stars or improve the wellbeing of the UK public.

Sometimes industry and public sector bodies co-fund research projects.

How research is applied...

1. Industry

Companies use the results of their research to improve their products or processes or to find new opportunities. Companies can also take the results of public funded research and either use it directly or build on it. Sometimes industry scientists will collaborate with public funded scientists. For instance, public funded research might uncover a potential new target for cancer treatment. A pharmaceutical company would then fund more research to investigate and bring a product to market.

2. Government policy

Government might change its policies or the advice it gives to the public based on the findings of research – for instance research showed passive smoking was harmful and led to the Government banning smoking in public places. Other organisations also have policies which might be affected by research. For instance, schools might have a healthy menu policy in the canteen.

3. Consumers

As consumers we might find ourselves using research to inform our decisions.

For instance, research has shown that light exercise is important for heart health and many people try to exercise regularly to keep their hearts healthy.

Appendix 2: Food, nutrition and health challenges

Public Dialogue

Programme

Session 1: Monday 10 March

Kensington & Chelsea Suite, Hotel Russell, Russell Square, London WC1B 5BE

5:30 Arrivals and sign in*

6:00 Welcome

Then the following sections

- Introduction to the session and to those present
- Warm-up and baseline session
- Being healthy
- Presentation: BBSRC's role, aims & objectives
- Questions / comments on the presentation
- Research to deliver a healthy diet
- Scoping initial challenges
- Preparation for the next workshop

9:00 Close

*Participants should not arrive before 5:30 or after 6:00.

Appendix 2: Food, nutrition and health challenges

Public Dialogue

Programme

Session 2: Wednesday 12 March

Kensington & Chelsea Suite, Hotel Russell, Russell Square, London WC1B 5BE

5:30 Arrivals and sign in*

6:00 Welcome

Then the following sections

- Identifying the challenges
- The challenges for BBSRC & their research
- Reviewing all the challenges
- Comparing the challenges
- Prioritising the challenges
- Final discussion
- Evaluation
- Distribution of incentives

9:00 Close

*Participants should not arrive before 5:30 or after 6:00.

Appendix 3 – Process Plan Session 1: 10 March 2014 18:00 – 21:00

Food, nutrition & health challenges

| Objectives (Why we are doing it) | Programme (Key areas that need to be covered) | Outcomes (What we want at the end that we have not got now?) |
|---|--|---|
| <p>Aim</p> <p>BBSRC's Strategic Framework for research in food, nutrition and health is shaped with input from 20 diverse, and broadly demographic, representatives of the public.</p> <p>Objectives - to:</p> <ul style="list-style-type: none"> ○ Engage in meaningful conversations on the challenges in the food, nutrition and health space on which BBSRC should focus ○ Engage in meaningful conversations about the role of different actors in the food, nutrition and health research system (for instance industry, policy makers, research funders and consumers) ○ Engage a range of views & values ○ Provide advice which is relevant to BBSRC and to which it can respond ○ Demonstrate BBSRC's commitment to open and transparent strategic planning | <ul style="list-style-type: none"> ○ Welcome ○ Introduction to the session, to BBSRC, to the facilitation teams, observers & evaluator ○ Warm-up and baseline session ○ Being healthy ○ Presentation: BBSRC's role, aims & objectives ○ Questions / comments on the presentation ○ Research for delivering a healthy diet ○ Scoping initial challenges ○ Preparation for the next workshop ○ Close | <ul style="list-style-type: none"> ○ An understanding of the session and everybody's role within it ○ A parity of understanding and knowledge on the food, nutrition & health context ○ Initial discussions on the actors in the food, nutrition and health research system in preparation for the next session ○ Clarity on next steps and ongoing participation |
| <p>Pre-participation materials</p> <ul style="list-style-type: none"> ○ Joining instructions ○ Discussion help points including a list of the organisations / sectors involved in the food research system. | <p>During the discussion materials</p> <ul style="list-style-type: none"> ○ All as listed in the materials / notes sheet ○ A set of What is Healthy? summaries for each table ○ A set of the case studies for each table. | |

| Time | Agenda | Process | Who | Outputs / comes | Materials / notes |
|---|------------------------------|---|--|--|--|
| 4:30 | Set up | <p>Room layout, facilitation stations (x2), refreshments etc</p> <p>Note: facilitation team will have a briefing away from the venue. This is so we both use the process plan consistently and effectively to get the best session outcomes. Key points:</p> <ul style="list-style-type: none"> • Importance of flexi-time -gains and losses in time even out through the process (HH to manage) • Reference to the help notes / ground rules • HH to brief speaker(s) - keep to time and focused / short answers to questions - purpose to inform and then allow time for discussion. | Venue Henrietta (HH) Anita (AvM) | Set up and ready to go | <p>Facilitation Tool Kits x 2 (HVM)</p> <p>Prepared flip charts for each facilitation station (HVM)</p> <p>2 flip chart stands (venue)</p> <p>Additional flip chart paper (venue)</p> <p>Setting up facilitation stations (Henrietta / Anita)</p> <p>BBSRC Displays? (BBSRC)</p> <p>Ideas wall set up (HVM)</p> <p>Refreshments (venue)</p> <p>PowerPoint projector / Laptop (venue)</p> <p>Screen (venue)</p> |
| 5:30-6:00 | Arrivals – Sign in desk | People welcomed, signed in, given a hard copy of the participation pack, pointed to facilities / refreshments. | HVM team to staff the sign in desk | Everyone aware of the available space and how to move in to the discussion | <p>Badges (HVM)</p> <p>Printed participation packs (HVM)</p> |
| 6:00-6:10 (5 mins to 6:05) (5 mins to 6:10) | Welcome Introductions | <p>Initial welcome from the facilitation team plus venue health, safety and housekeeping announcement.</p> <ul style="list-style-type: none"> ▪ HVM: Creating Connections (independent facilitation team) ▪ BBSRC - Mary to give brief introduction ▪ Introduce the BBSRC team, panel members and additional observers (we'll come back to 3KQ as evaluators) ▪ Brief introduction to what we are doing together over next two sessions ▪ Specific objectives of this session (context setting, information provision and scoping discussions) <p>Introduce help points / ground rules - hard copy in your participation packs, highlighting:</p> <ul style="list-style-type: none"> ▪ Interested in a range of views ▪ Respect other people's even if not your own ▪ Everyone is listened to and recorded ▪ There are no stupid questions / comments - we're | HH HH | All clear on what we are doing here | Further reference to packs |

| Time | Agenda | Process | Who | Outputs / comes | Materials / notes |
|------------------------------------|---|---|---|---|---|
| (5 mins to 6:15) | | <p>here to learn, understand and move the debate forwards</p> <ul style="list-style-type: none"> • Come back from breaks on time and help us stick to time • No mobile phones during the discussions • Don't interrupt when speaking • Use the facilitators <p>Note on evaluation: we have Carl Reynolds here from 3KQ - Carl to explain what he'll be doing during this session.</p> | CR | | |
| 6:15-6:20 | Divide in to 2 groups | <p>Your group allocation is based on having a range of people on each of the two tables. Note the coloured sticker on your badge.</p> <p>Anita van Mil - blue group Henrietta Hopkins - orange group</p> <p>Please go to your group's area now</p> | HH | Everyone in their small group setting | |
| 6:20-6:30 (10 mins to 6:30) | Warm-up & baseline session Note on recording | <p>Facilitators: Welcome to the group Go round the table - introduce yourselves and what you / your family's favourite food / drink is.</p> <p>Facilitator to introduce the recorder. Stress that its use is to back up the notes being recorded on the flip chart - which is our main method for capturing what has been said. Ask if anyone objects. In which case the recorder will be turned off when they are speaking. All recording is anonymous and no comments whether written or recorded will be attributed to a named individual in the report.</p> | HH, AvM & HI in each facilitation station HH / AvM | Panel members feel at ease and comfortable working together Recorded voices for quotations for the report. | |
| 6:30-6:50 (10 mins to 6:40) | Being healthy? | <p>START RECORDING</p> <p>1) What is important, if anything, about food, nutrition and health for you?</p> <p>Write your first thought on this on a post-it. Then talk to the person next to you about this for 5 minutes. Then group discussion.</p> | | Group reflection on the terms: Health Food Nutrition What they mean | Facilitator to group post-its on flip chart Add group comments and reflection Stick on the wall for review by the group |

| Time | Agenda | Process | Who | Outputs / comes | Materials / notes |
|--------------------------------|-------------------------------|---|-------------------------|---|--------------------------------------|
| (10 mins to 6:50) | | <p>Prompts:</p> <ul style="list-style-type: none"> What about for your family, your community, for society? To what extent, if at all, have you valued information you have been given in your life about food, nutrition and health? <p>Who has given you the information you have found most valued?</p> <p>2) What have you heard in the media or other sources such as public communications about health, nutrition and food in the last few months?</p> <p>Write something on a post-it and then discuss with the person next to you how you felt when you heard those messages. Together write down all the ways that you can think of that you hear about health, food and nutrition.</p> <p>Prompts:</p> <ul style="list-style-type: none"> Did you trust the information you heard? To what extent, if at all, did the information you heard seem rooted in science and fact? <p>Facilitator to discuss, probe, get more out of each post-it as they are collated. <i>If it helps the discussion point out the What is Healthy? summaries copies of which will be available on each table.</i></p> <p>STOP RECORDING</p> | | and how they are communicated to the public | Record discussion on the flip chart |
| 6:50-7:05 (15 mins to 7:05) | Plenary BBSRC presentation | <p>Presentation on the aims and objectives of the BBSRC's Strategic Framework - how does this dialogue feed in to the work on the panel. What will be done with what is discussed? What BBSRC's work is and is not. Scope the BBSRC's remit and work.</p> <p>Facilitation team statement - please hold questions for your small group discussion. Don't worry you will have a chance to ask questions, but we are going to discuss what questions / comments each group wants to make after the</p> | David Gregory HH | Full understanding of BBSRC's purpose | PP presentation Stimulus material |

| Time | Agenda | Process | Who | Outputs / comes | Materials / notes |
|------------------------------------|-------------------------------|--|-----|--|---|
| | | <p>break.</p> <p>We have made a space on the wall for you to post ideas, thoughts, comments you have on the discussion so far, the process or anything you have to say on the subjects of food, nutrition and health in the context of the presentation we have just heard. The ideas wall will be up throughout this evening and will be brought back to the session on Wednesday. We'll say more about this at the end of today's session.</p> | | Understanding of the ideas wall and what it is for | Ideas wall up with pens, blu-tac, post-its and glue available for people to make comments, stick up newspaper articles or images that help the discussion or their thinking. |
| 7:05-7:25 (20 mins to 7:25) | Break | <p>Participants encouraged to take a break, and to make comments on the ideas wall and have a look at what others said in the health and nutrition discussion.</p> <p>Participants asked to return to their groups</p> | | | |
| 7:25-7:40 (15 mins to 7:40) | Questions on the presentation | <p>START RECORDING</p> <p>Q1: What was important about what you heard - ask participants to record one point on a post-it, gather and discuss</p> <p><i>Prompts [to be used as necessary]:</i></p> <ul style="list-style-type: none"> If you were telling someone else about the presentation what would be hardest to describe to them? What were the challenges for you in listening to the presentation? <p>Q2: Is there anything else you would like to know about BBSRC and the purpose of these discussions? <i>Prompts [to be used as necessary]</i></p> <ul style="list-style-type: none"> To what extent do you have questions that remain unanswered following the presentation? How much did the presentation challenge your thinking about nutrition, health and food? <p><i>Last five minutes:</i> Table agreement on which questions should be asked of expert witnesses and who should ask</p> | | | <p>Discussion recorded on flip chart</p> <p>Summary of up to 2 questions that the group wishes to ask as a result of the presentation.</p> <p>Record anything which might give an indication of nascent thinking on the challenges on a separate flip sheet which could be brought back at a later stage.</p> |

| Time | Agenda | Process | Who | Outputs / comes | Materials / notes | | | | | | | | | | | | |
|-------------------|---------|--|---------------------------------|---------------------------------------|--|----|--|--|--|--|--|----|--|--|--|--|--|
| (5 mins to 8:20) | | <p>2) Who should find this knowledge (i.e. who does the research?)</p> <p>Look at the organisations listed in section h of the help points document (also printed separately and on the tables) to see how you think they should be involved. Then work on the 'Who?' columns of your sheet.</p> | | | <table border="1"> <tr> <td>3.</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4.</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>The far left column lists the things they need to know the other is a collation of who would do what based on the information they have and their own thoughts. Facilitator to work with the group to produce a master sheet - or simply put the sheets together.</p> | 3. | | | | | | 4. | | | | | |
| 3. | | | | | | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | | | | | | |
| (5 mins to 8:20) | | <p>As a whole small group we now look at the three sheets. What are the similarities and differences? Can we combine them to produce a master sheet of the knowledge needed and the people who should find the knowledge? Then -</p> | | | <p>Facilitator to group the 'who' post-its on the wall around the master sheet.</p> | | | | | | | | | | | | |
| (10 mins to 8:25) | | <p>3) Who should use the knowledge found?</p> <p>Each participant to write on post-its at least one organisation / sector / individual / other who should use the knowledge found.</p> <p>Prompt How should they use the knowledge found?</p> | | | <p>Facilitator to encourage the group to come up with a number of 'hows' which are recorded on the flip chart.</p> | | | | | | | | | | | | |
| (10 mins 8:35) | | <p>4) What do you see as the challenges you face as you deliver a healthier society?</p> <p>Each small group of 3/4 is asked to come up with as many challenges as they can think of, recording each one on a post-it which the facilitator will record and collate.</p> | | | <p>Collated post-its on the challenges, grouped like with like and the group to come up with the headings for the challenges for use for the <i>Roving Ideas Storm</i> in the next session.</p> | | | | | | | | | | | | |
| (5 mins to 8:40) | | <p><i>Group to work with the facilitator to group the challenges by heading and to nominate one person from the group to report back to the plenary on the identified headings.</i></p> | | | | | | | | | | | | | | | |
| 8:40-8:50 | Plenary | <p>STOP RECORDING START RECORDING</p> | One participant from each group | Initial exploration of the challenges | Agreement on the similarities / differences to inform the Roving Ideas Storm for the | | | | | | | | | | | | |

| Time | Agenda | Process | Who | Outputs / comes | Materials / notes |
|--------------------------------|--------------------|---|---------------------|---|--|
| 9:00-9:30 (10 mins to 9:10) | Wash-up & clear up | Brief team de-brief. Should groups stay the same? Any issues with the room, layout, refreshments, process to deal with before the next session. | BBSRC HVM 3KQ | Clarity on what went well and what needs amending for the next session. | Notes on anything that needs changing for next time. |
| (20 mins to 9:30) | | Pack up all facilitation materials, flip chart notes, audio recorders, ideas wall. | HVM | All materials packed up. | |

Appendix 3 – Process Plan Session 2: 12 March 2014 18:00 – 21:00

Food, nutrition & health challenges

| Objectives (Why we are doing it) | Programme (Key areas that need to be covered) | Outcomes (What we want at the end that we have not got now?) |
|---|--|--|
| <p>Aim BBSRC's Strategic Framework for research in food, nutrition and health is shaped with input from 20 diverse, and broadly demographic, representatives of the public.</p> <p>Objectives - to:</p> <ul style="list-style-type: none"> Engage in meaningful conversations on the challenges in the food, nutrition and health space on which BBSRC should focus Engage in meaningful conversations about the role of different actors in the food, nutrition and health research system (for instance industry, | <ul style="list-style-type: none"> Welcome Identifying the challenges The challenges for BBSRC & their research Reviewing all the challenges Comparing the challenges Prioritising the challenges Final discussion Close | <ul style="list-style-type: none"> Engagement of the public in meaningful conversations on <ul style="list-style-type: none"> the challenges in the food, nutrition and health space on which BBSRC should focus the role of different organisations in the food, nutrition and health research system A prioritised list of the challenges identified by public participants which have been compared to the challenges identified by the Strategy Panel |

| | | |
|---|--|--|
| <p>policy makers, research funders and consumers).</p> <ul style="list-style-type: none"> ○ Engage a range of views & values ○ Provide advice which is relevant to BBSRC and to which it can respond ○ Demonstrate BBSRC's commitment to open and transparent strategic planning | | |
| <p>Pre-participation materials</p> <ul style="list-style-type: none"> ○ Joining instructions ○ Discussion help points including a list of the organisations / sectors involved in the food research system. | <p>During the discussion materials</p> <ul style="list-style-type: none"> ○ Hard copy of the challenges presentation ○ Separate sheet with organisations / sectors for tables | |

| Time | Agenda | Process | Who | Outputs / comes | Materials / notes |
|------------------------------|------------------------------|---|------------------------------------|--|---|
| 5:00 | Set up | <p>Room layout, facilitation stations (x2) displays refreshments etc</p> <p>Note: facilitation team will have a briefing away from the venue. This is so we both use the process plan consistently and effectively to get the best session outcomes. Key points:</p> <ul style="list-style-type: none"> • Importance of flexi-time -gains and losses in time even out through the process (HH to manage) • Reference to the help notes / ground rules • HH to brief speaker(s) - keep to time and focused / short answers to questions - purpose to inform and then allow time for discussion. | Henrietta (HH) Anita (AvM) & | Set up and ready to go | <p>Facilitation Tool Kit (HVM)</p> <p>Prepared flip charts for each facilitation station (HVM)</p> <p>Additional flip chart paper (venue)</p> <p>Setting up facilitation stations (Henrietta / Anita)</p> <p>Ideas wall set up</p> <p>Roving ideas storm set up - likely to be four areas</p> <p>Refreshments (venue)</p> <p>Screen (venue)</p> <p>Laptop & projector (venue)</p> |
| 5:30-6:00 | Arrivals – Sign in desk | People welcomed, signed in, given a hard copy of the participation pack, pointed to facilities / refreshments. | HVM team to staff the sign in desk | Everyone aware of the available space and how to move in to the discussion | <p>Badges (HVM)</p> <p>Printed participation packs (HVM)</p> |
| 6:00 (5 mins to 6:05) | Welcome Introductions | <p>Initial welcome from the facilitation team plus venue health, safety and housekeeping announcement - even if the same as previous session.</p> <p>Reminder of</p> <ul style="list-style-type: none"> ▪ Who are HVM: Creating Connections (independent facilitation team) ▪ Introduce the BBSRC team, panel members and | HH Mary | All clear on what we are doing here | Further reference to packs |

| Time | Agenda | Process | Who | Outputs / comes | Materials / notes |
|-------------------|-----------------------|--|--|--|--|
| (5 mins to 6:10) | | <p>additional observers</p> <ul style="list-style-type: none"> Brief introduction to what we are doing here together at this session & reminder of what we achieved in the previous session Specific objectives of this session (looking at the areas on which BBSRC should focus their thinking) <p>Reminder of help points / ground rules - hard copy in your participation packs, remember to highlight:</p> <ul style="list-style-type: none"> Interested in a range of views Respect other people's even if not your own Everyone is listened to and recorded There are no stupid questions / comments - we're here to learn, understand and move the debate forwards Come back from breaks on time and help us stick to time No mobile phones during the discussions Don't interrupt when speaking Use the facilitators | HH | | |
| 6:15-6:20 | Divide in to 2 groups | <p>You are in the same groups as on Monday</p> <p>Anita van Mil - blue group</p> <p>Henrietta Hopkins - orange group</p> <p>Please go to your facilitation station now</p> | HH | Everyone in their small group setting | |
| (10 mins to 6:30) | Warm-up session | <p>Welcome [back] to the group</p> <p>Remind the group about the recording and that they can ask to stop the recording if they wish to talk about something off the record.</p> <p>START RECORDING</p> <p>Go round the table - [re]introduce yourselves to the group and answer this:</p> <ol style="list-style-type: none"> 1) What were your thoughts as you left the building on Monday evening? 2) If you discussed the session with others, what did you talk about? How did they respond? | <p>HH, AvM & HI in each facilitation station</p> <p>HH / AvM</p> | Panel members feel at ease and comfortable working together again. | Audio recording only to maintain informality around the warm-up. |

| Time | Agenda | Process | Who | Outputs / comes | Materials / notes |
|---|----------------------------|---|--|--|--|
| 6:30-7:00 (30 mins to 7:00 - 5 mins per sheet) | Identifying the challenges | <p>Facilitator to explain the Roving Ideas Storm. Each group will visit each sheet in turn and make comments on the areas on which BBSRC should focus their thinking (research areas) based on their own views / values on a healthy society, what they have read in their packs, what they heard in the presentation on Monday. The question to be asked when the facilitator arrives at each sheets is:</p> <ul style="list-style-type: none"> Taking this point that we came up with in our discussions on Monday, what specific areas in food, nutrition and health research does this make you think BBSRC should focus on? Are there other research areas related to this one that you have thought of since Monday? <p>They won't repeat what others have written, but put a round green sticky dot next to it if they agree with it / or a red sticky square if they disagree with it.</p> <p>They should add as many comments as they want to using new sheets as necessary</p> <p>STOP RECORDING</p> | Where possible BBSRC panel members / officers standing by the sheets to provide information to participants as required. | Review of the 'whats' produced at the previous session to produce a long list of areas on which BBSRC should focus its thinking which will be compared in the next session to what BBSRC has started to think about. | <p>Roving ideas storm pre-prepared on a flip chart based on the final discussion at session 1. The sheets are not in priority order. The orange group will start with sheet 1, the blue group at sheet 6, each divided in to 2 sub-groups and we move around the room.</p> <p>Sheet 1: How nutrition relates to our physical make-up - testing the correlation between food and health</p> <p>Sheet 2: Is society becoming more or less resistant to disease and more or less susceptible to allergies?</p> <p>Sheet 3: Research into what is basic good health, the benefits of food / nutrition for health and an understanding of what healthy ingredients are</p> <p>Sheet 4: What are the side effects of additives in food and other action to improve nutrition?</p> <p>Sheet 5: Does age, gender, other variables have an effect on dietary needs at different life stages?</p> <p>Sheet 6: To what extent does each person require their own genetic health map which enables a GP to explain what each</p> |

| Time | Agenda | Process | Who | Outputs / comes | Materials / notes |
|---|------------------------------|---|--------------------------|-----------------|---|
| | | | | | individual's health risks are and how they can be influenced by diet? |
| 7:00-7:20 | Break | Participants encouraged to take a break, and to make comments on the ideas wall and have a look at what others said in the health and nutrition discussion. | | | Facilitators to prepare a summary copy of the focus areas raised so that each small group can work on them in the next session. We will put the main challenges on plain postcards as one word summaries, leaving the flip sheets on the wall for reference. |
| 7:20-7:30 (5 mins to 7:25) (5 mins to 7:30) | Plenary | BBSRC to present the challenges they have identified. A brief facilitated opportunity to ask questions to ensure understanding of BBSRC challenges and explanations of terminology as required - remembering that experts will be available in the small groups to answer more questions. Facilitator: <i>If you have any further questions please either bring them to your small group sessions or add them to the any other thoughts cards for BBSRC to review and answer before the end of this evening.</i> | Richard Mithen HH | | HVM will have seen the presentation before the session and produced summary postcards in the same style as the roving ideas storm cards - but in a different colour. Blue = Participants thoughts from Roving Ideas Storm. Brown = BBSRC identified challenges. |
| 7:30-8:10 (30 mins to 8:00) | Review of all the challenges | Back in small groups. Here are the challenges, summarised on postcards. Brown text = challenges identified by BBSRC. Blue text = challenges identified by you during the Roving Ideas Storm & on Monday - one postcard has been included for every challenge raised by both groups. Let's go through them. START RECORDING Facilitator to go through each post card in turn, inviting the group to draw on the full flip chart sheet as necessary (which will be on the wall). 1) What, if anything, is important about this challenge for you? 2) What are the implications of this challenge for a | | | BBSRC team are asked to review the <i>any other thoughts cards</i> produced as a result of the BBSRC challenges and find a response (where possible) to the questions raised. Flip chart recording of comments adding them as challenges to one sheet, having a parking sheet next to it for any comments which do not lead to challenges but are important to record. |

| Time | Agenda | Process | Who | Outputs / comes | Materials / notes |
|--|---|---|--|---------------------------------------|---|
| (10 mins to 8:10) | | <p>healthy society? 3) Who are the key players who will need to take on this challenge?</p> <p>At this point experts are invited to join the discussion and help participants to come to a point where they have a clear set of challenges.</p> <p>Having discussed each of the challenges the group are invited to sticky dot up to 5 challenges that they feel are the most important / relevant to BBSRC. Facilitator to review and test with the group that these are the five they want to take to the plenary session. Remind them that the other challenges have been recorded and will remain in the report for the session.</p> <p>STOP RECORDING</p> <p>Group to nominate someone to do the reporting back. (offer a comfort break if needed).</p> | | | Facilitator to list on the flip chart the 5 most important challenges in relation to the number of sticky dots they receive. To change as necessary as the group review the prioritised challenges and produce a final summary sheet for the session. |
| 8:10-8:45) (10 mins to 8:20) (5 mins to 8:15) (10 mins to 8:25) (5 mins to 8:30) | Plenary - opportunity to compare the challenges | <p>START RECORDING</p> <p>Each group to report back on the challenges identified as important priorities.</p> <p>BBSRC to answer any questions resultant from the any other thoughts cards produced in response to the BBSRC challenges presentation.</p> <p>Facilitated whole group discussion.</p> <p>1) Where are the similarities between the sets of challenges, where are the differences?</p> <p>2) What are the implications of these challenges for those who work on addressing them?</p> <p>STOP RECORDING</p> | <p>One participant from each group</p> <p>Mary / Patrick / Emma?</p> <p>HH</p> | Initial exploration of the challenges | <p>Pre-prepared sheets listing the challenges put on the wall (so that the groups can do a priority dotting exercise)</p> <p>AvM to record on flip chart the similarities / differences / implications</p> |
| 8:30-8:40 | Comparing | Back in small groups | | | Post-its |

| Time | Agenda | Process | Who | Outputs / comes | Materials / notes |
|--|---------------------------------|---|--|---|------------------------------------|
| (2 mins to 8:32) (8 mins to 8:40) | challenges (2) | <p>START RECORDING</p> <p>You have now seen the similarities and differences between the challenges put forward in these discussions and those brought to the table by BBSRC. What in your view are the most important challenges?</p> <p><i>Facilitators to invite participants to use the post-its again and very quickly put the answer to the following two questions on two separate post-its.</i></p> <p>1) Which for you is the most important challenge?</p> <p>2) What is the implication of that challenge for those involved in the food, nutrition and health research system?</p> <p>Group brainstorm on the responses: Fast paced facilitation to keep the energy levels up at the end. Last 2 minutes of this session: agree (if possible) as a group on 3 of the most important challenges to share with the plenary and someone to present them.</p> <p>STOP RECORDING</p> | | <p>Post-its with participants own words for a challenge and its implication.</p> <p>Summary sheet of group's top 3 challenges.</p> | Flip chart recording. |
| 8:45-8:50 (5 mins to 8:45) (5 mins to 8:50) | Plenary - 3 priority challenges | <p>START RECORDING</p> <p>Groups to report back on the 3 challenges highlighting where they have drawn on either BBSRC challenges and / or the participants' own challenges - or both.</p> <p>BBSRC to reflect on what the groups have identified as challenges, what they have prioritised and the implications.</p> <p>STOP RECORDING</p> | <p>Participants</p> <p>David Gregory</p> | <p>A list of priority challenges tested against / integrating BBSRC challenges</p> <p>Participants know their views have been taken seriously by BBSRC.</p> | Flip chart recording of key points |
| 8:50-8:55 | | Distribution of evaluation questionnaires and explanation from Carl as necessary | CR | Evaluation steps taken | Evaluation forms |
| 8:55-9:00 | | Thanks and what will happen with this work. | HH / BBSRC | Everyone is clear what | |

| Time | Agenda | Process | Who | Outputs / comes | Materials / notes |
|------|--------|---|-----|---|--|
| | | | | will happen as a result of these sessions | |
| 9:00 | | Incentive distribution and signing of receipt forms | HVM | Incentives distributed | Receipt forms Incentives in envelopes |

Appendix 4: Stimulus materials

Eating broccoli re-tunes metabolism



Eating diets rich in glucoraphanin, found in broccoli, can 're-tune' the cellular processes that get disrupted as we age.

As we age, our cells work less efficiently. This can disturb metabolism, leading to increased risk of diseases such as cancer and heart disease. Eating glucoraphanin can help to improve metabolism.

BBSRC-funded scientists have developed a variety of broccoli, now on sale in Tesco and M&S, which has three times increased levels of glucoraphanin.

People who eat this broccoli have improved metabolism. Further research is investigating the effect on risk of developing cancer, heart disease and arthritis.



Reducing fat digestion without changing taste



Alginates, a form of dietary fibre derived from seaweed, could help people feel fuller for longer to aid weight management

Alginates are a common ingredient in many processed foods. Research has shown that they can inhibit the action of digestive enzymes so that less fat is digested.

This means that the fat content of foods could be maintained, leaving taste and texture unaffected whilst less fat is absorbed by the body.

A study using bread supplied by Greggs has demonstrated that alginates do not affect product preference – in fact, many people prefer bread with alginates.



You are what your mother ate



BBSRC-funded research provides insights into why children of mothers who had a poor diet during pregnancy have increased risk of type II diabetes.

Diet can influence how much of a gene product is produced through by modifying marks along the DNA sequence.

The research shows that the gene *Hnf4a*, which has been linked to type II diabetes risk, is modified in a child's DNA according to their mother's diet. Offspring of mothers who had a poor diet produced less *Hnf4a* and had an increased risk of diabetes.



Cocoa chemical could promote good gut health



BBSRC-funded researchers have shown the eating flavanols, chemicals in cocoa powder, can stimulate the growth of good bacteria in the gut.

Beneficial gut bacteria play an important role in food digestion, produce vitamins and help fight infections. However, some gut bacteria have potentially harmful properties such as producing toxins and causing infection. Maintaining an appropriate balance of bacteria is therefore essential for good health.

The study showed that people who consume high levels of cocoa flavanols have increased numbers of beneficial bacteria and decreased numbers of potentially harmful bacteria in their guts.



Health benefits of vitamin D dependent on type taken



Vitamin D3 supplements could provide more benefits than the closely related vitamin D2.

Vitamin D is important for bone and muscle health and there is concern that many people don't get enough. As a result, some foods are fortified with vitamin D – usually in the form of vitamin D2.

However, research has shown that vitamin D3, the type found in foods including egg and oily fish, is more effectively used by the body.

This research could help food fortification have greater health benefits.



Women may benefit more from eating oily fish than men



Research has shown that oily fish is twice as healthy for women's hearts than men's.

Researchers introduced small amounts of fish oil into the meals of men and women. Fish oils directly affect the muscle cells that control the elasticity of blood vessels, causing them to relax and increasing blood flow.

Elasticity was improved twice as much in women compared to men. In fact, the beneficial effect of fish oil in women was as great as that of drugs that are prescribed to people with poor blood vessel elasticity.

The study may help develop more effective ways of improving heart health in the future.



Appendix 5 - Summary of notes from flip charts and post-its

BBSRC: Food, nutrition and health challenges

Workshop 1, 10 March 2014

Small group discussion: orange group

Q: *What is important, if anything, about food, nutrition and health for you?*

[written on post-its by participants]

- Minimal fat
- Education
- Being healthy
- Cleansing / dirty - food battle
- Speed of preparation
- Fresh / healthy
- Cooking method
- Energy / health - disease prevention
- Weight
- It sustains life
- It also tastes good hence appetite
- Nutrition
- Anti-oxidants
- Produced in the UK
- Ethically sourced
- Organic
- Good food (quality) keeps the body going. You can't run a car on substandard fuel
- Trying to eat a balanced diet
- Giving my daughter a healthy balanced diet
- Price
- How is it cooked?
- Fresh

[Discussion recorded by facilitator on flip chart]

- Food for energy
- Cancer - I'm paranoid about it and want to eat food that will help me remain healthy, eating things that prevent cancer
- Non processed food for children
- Not for myself, but for my daughter, I want to be a role model for her
- It is important to me how the food is cooked - no frying
- Organic, UK produced food for me - it's about cost reduction and not exploiting poorer countries
- Food keeps the body going
- We need it (food), it sustains life
- Fresh ingredients
- Minimal fat in food
- We need education about the food we eat - we were not taught about carbs / proteins in school
- Clearly all in moderation
- It's important that the food is not overcooked - al dente / steamed / boiled to keep the nutrients
- Food: battle - will I eat well or badly?
- Nutrition: - anti-oxidants, adding things like nettle from the health food shop makes me feel better, clearer headed, it costs too much to do too often but good when I can.
- Health: dirty food (for a hangover) or cleansing food (to make me feel alive / awake)
- How about toasted cheese and avocados - then you've got both!

Prompt: What about for your family, your community, society - what is important?

- Not microwaving food - it destroys things that are good in the food
- Non processed food
- I look for reduced sugar / salt
- I am aware of the balance needed and try and eat a balanced diet
- Speed and preparation time are important - I might want to eat something but if I don't have time to sort it, then I'll go for the quicker option
- The price is also important, I may want it, but can I afford it - it might be a long time until pay day
- I would like to go organic, but it would double the shopping bill

Prompt: Who has given you the information you have found most valuable on food, nutrition and health?

- I research on the Internet
- Read the label at the back
- I'd talk to a friend
- My husband is very good - he finds out
- We are told something is good bad one minute and then bad the next (red wine / salt / sugar) it is very confusing and often contradictory
- We need an understanding of what food contains: carbs / protein / energy
- Extremes are not good - need to aim for a healthy balance
- There is not enough education
- There is no support. I had my daughter very young and my mother hadn't taught me about healthy eating, so I've had to learn for myself and break the cycle
- Q: What is the right balance?
- There is a lot of misleading advertising

Small group discussion: blue group

Q: What is important, if anything, about food, nutrition and health for you?

[written on post-its by participants]

- That food isn't excessively fattening
- Healthy, enjoyable, good quality of life. Discussion: *'My sister in law had a health scare last year and it made me realise that I have to look after what I eat more if I want to live long and have a good quality of life'*
- The feeling of how you feel after you eat either satisfied, bloated etc. Discussion: *'I feel more satisfied after I have had junk food somehow than when I've had a bowl of salad'*
- What you are eating and how it affects your body – heart, blood, nerves etc.
- Healthy natural food. Good nutrition is oils, vit's, minerals, protein, carbs, maintain health i.e. protect against illness etc.
- Taste and price. Discussion: *'I'd like to buy healthy food for my children but the healthier options are not always affordable'*
- To remain healthy and nutrition should be balanced. Also good quality
- To live a healthy life, free of disease. This is accomplished via a diet high in the appropriate amounts of vitamins and minerals, a whole foods diet devoid of processed/ synthesised foods.
- Food should be enjoyed but must take account of healthy eating to prevent illness. Junk food in moderation o.k. but must balance with healthy food
- Food and nutrition has to be good for the body and should have a positive impact rather than a negative one. Nutrition also needs to be able to taste good rather than having to be bland
- Eat food that I know is good for me (juice)
- It is important that my children have a balanced diet to enable them to grow and learn. For me it is convenience and taste

Prompt: where do you get your information from?

- TV – news
- Family
- Newspaper: particularly Guardian, Independent
- Internet – *'I keep an eye on any new research published'*

- College/ school
- Library – books related to food and how to use food to combat disease

Small group discussion: orange group

Q: What have you heard in the media or other sources such as public communications about health, nutrition and food in the last few months?

[Written on post-its by participants]

- Smoothies contain an enormous amount of sugar
- Prepared foods enormous amounts of salt
- Disappointed as they are promoted as healthy
- Flora / butter
- Unripe bananas
- Salt / salt substitute
- To cut down on fat, there is usually added sugars which is equally unhealthy
- Sugar free - LIES!!
- Reduced fat replacements - shame for others
- Wine
- Crazy diets i.e. the raspberry diet
- Seaweed
- Vitamin D deficiencies
- Cocoa benefits
- WHO reduced recommended sugar per day allowance - its lower than UK government recommendation
- Front page of a paper "Not it's 7-a-day" - 7 fruit / veg per day. My first thought: I don't even get my 5 a day
- The food industry is a multi-million pound industry hence they keep their customers in the dark as much as possible.
- Misleading producers

[Summary discussion recorded by facilitator on flip chart]

- Smoothies being promoted as healthy but the sugar content is very high. I make my own
- The sugar free / fat free foods I feel that it is a lie - it is a shame that people don't know that this is a sham
- When it is added sugar or fat free we are somehow going to be conned - it is going to have replacements for those things
- Dieting products are the same
- The French simply have smaller sized portions
- British public are sceptical that all of this information [from food manufacturers] is just another scam
- I read on the Internet that the World Health Organisation have specified a reduction in the advised daily amount of sugar - it is now lower than a can of coke
- Also we're told that we should eat 7 a day not 5
- These are unattainable targets - I accept the science but there is no way the normal person can achieve this
- Let's face it 5 a day is fantastic for food producers
- People believe that a can of beans is part of their 5 day [discussion on whether it is or not]
- When talking about 5 a day the government should say 'fresh' fruit and veg
- How long fresh fruit can keep its goodness when its semi-frozen to travel long distances and preserving chemicals are used in it
- There is a lot of advertising and PR by food producers - hard to know what we can trust, so there is scepticism
- We have to find information out for ourselves - people don't know where to look
- 50 years ago things were different, mothers didn't work and made home cooked food and were taught home economics in schools
- Things have now skipped a generation and we don't know this stuff

- This country is a meat and two veg culture, but we have moved to a cafe / fast food culture
- Portion sizes are important, putting less on your plate

Small group discussion: blue group

Q: What have you heard in the media or other sources such as public communications about health, nutrition and food in the last few months?

[Written on post-its by participants]

- B12 vitamin deficiency is extremely common amongst individuals regardless of diet. Sources of B12 include 'chorella' (a type of algae) and 'spirulina' does not contain it. Discussion: Found this information on Youtube and then checked other sources
- During TV programme I heard that curly kale was more nutritious than and had more protein than meat. I checked it on Google and it's true
- The news and newspapers are full of child obesity
- 1 in 4 people eating a lot of protein are more likely to get cancer – heard it on the radio. Discussion: probably on Heart. *'I found it quite worrying. My son goes to the gym a lot and uses protein supplements'*
- Something about fatty food not being as bad as previously thought. Discussion: source of info = the Metro. *'It's not that I don't trust their information but I would want to look into it more'*. Someone else *'I didn't trust it, I felt it was headline grabbing'*
- Life expectancy can be increased by using statins. Discussion: source of info = The Guardian
- 5 things can reduce cancer chance by 50%: exercise, not smoking, not drinking, eating fruit and veg, losing weight
- Link between excessive sugar consumption and diabetes! Importance of complex (unrefined) carbohydrates, e.g. oats, wholemeal. Danger of sweeteners, e.g. aspartame. Discussion: it's all about our eating habits. We have to overcome our habits. Use sugar just in moderation. *'I learned from 'Embarrassing bodies' that fatness has nothing to do with sugar, it's all about your genes'*
- Read in a national newspaper front page a few days ago that scientists now think that 'fatty' food is very good for you (Daily Mail?)
- Nothing. Haven't watched or seen anything in the media about health but I would assume we all need to get healthier
- Foods with preservatives. Too much red meat is bad for you. Having a high protein diet is wrong. Obesity levels rising. Processed food
- Increase in child obesity due to hidden sugars/ fats – easy for children to access. Start to tax sugar. Sugar like a drug
- Childhood obesity is rising (don't remember where I heard it, think in a documentary)
- I think I remember hearing that certain diets can lead to an increased chance of cancer (can't remember where again, but thought it was ridiculous)

Small group discussion: orange group

Q: What was important about what you heard in the presentation?

- That new products are being looked at
- Adding new ingredients to make food healthier - that's very exciting
- Hormones controlling appetite - we need more information on that
- I was surprised to hear that the UK are leading in health research. Germany and Sweden seem more like 'we're the grown-ups and know this stuff'
- The brains are here too though
- Perhaps we are just quieter about it in this country
- I feel more informed about BBSRC - I didn't know how these studies came about before tonight
- I feel more aware about their structure / goals and am reassured to know that such a body exists
- MRC should be first, but second should be BBSRC not EPSRC - it is surely more important that we are healthy?
- People are just not aware of the investment

Q: Is there anything else you would like to know about BBSRC and the purpose of these discussions?

- What are BBSRC's successes?
- Do BBSRC, or the organisations it funds, receive payment to promote genetically engineered foods and if so isn't this a conflict of interest?
- You receive £500m from tax payers - do you also have sponsorship from private firms?
- Is there any research on helping people with eating disorders and mental health?
- To what extent is being healthy about nature or nurture?

Small group discussion: blue group

Q: What was important about what you heard in the presentation?

- I thought that it was important that they want the 'public's' views and that they would listen
- Money being spent on research into a diet for continuing good health! That is money well spent.
- Research into understanding allergies. Discussion: important to the participant because of a history of allergies in the family.
- A lot of money being invested. People living longer. What we should be eating with age! Different diets for different stages in our lives.
- How they use the vast amount of £500m of tax payers money. Where it goes, what it does and how it benefits us – the tax payers
- How much the government is putting effort in finding out stuff regarding health and well being of people.
- What the charity focuses on and how it helps the public and world.
- Research is necessary so that the ever increasing growing population can feed nutritiously and be healthy.
- The 'fact' that the overall aim is to improve the health and wellbeing of the population via 'diet'.
- Very important that research and funding into essential factors which will affect future populations.
- Realising that there is an organisation out there whose aim is to make our lives healthier and is interested in change and new ideas!

Q: Is there anything else you would like to know about BBSRC and the purpose of these discussions?

[Participant comments recorded by facilitator on flip chart]

- How often does the BBSRC sit down with industry and challenges their interests?
- As a government funded organisation I might put the BBSRC in the same arena as the pharmaceutical industry. How do they remain independent and fresh? Are they genuinely independent?
- What criteria do they use when industry is co-funding research?
- Why don't they make their research public? Why don't we know about it?
- We hear more about international research than UK research, why is that?

Plenary responses to the questions:

Blue group Q1: How do we get to know about BBSRC's research?

We fund fundamental research, things that get published in journals such as *Nature* rather than translational research from which products are developed. It is not central to BBSRC's role to communicate that research to the wider public, our communication is directed towards research scientists. Although we do have BBSRC's annual report and strategy both of which are available online. The media office publishes about 50 press releases per month from both BBSRC and from the universities carrying out research funded by BBSRC and so at least once a day the press picks up a science story from one of those releases. BBSRC also has a twitter feed and youtube channel.

Blue group Q2: How do you remain independent and ethical and what criteria do you use when industry is co-funding research? and Orange group Q3: You receive £500m from tax payers - do you also have sponsorship from private firms?

BBSRC gives money to people to do research. Often this is through research groups which are big and receive grants. The funding is to support the three strategic objectives and training. We might be funding research which also gets funding from other sources but it is not unethical that people seek funding for their research programmes from a variety of sources. There are checks and balances in place such as peer

review, grant committees and the panel checking that the funding is being granted ethically and in line with BBSRC's objectives.

Orange group Q1: What are BBSRC's successes? Do BBSRC, or the organisations it funds, receive payment to promote genetically engineered foods and if so isn't this a conflict of interest?

All our successes are underpinned by understanding genetics (Crick and Watson). We have been involved in enriching wheat to make good deficiencies in food for example. We are charged by government to do ethical work in animal and plant research in the context of a growing population. It is about using a range of techniques, not just gm, to work on answers that will help society. This includes work on *Streptomyces as a new source of antibiotics*. There is no conflict of interest because of the checks and balances described and GM should be applied on a case by case basis as part of a range of solutions to societal challenges.

Orange group Q2: Is there any research on helping people with eating disorders and mental health?

Research into eating disorders is the remit of the Medical Research Council but BBSRC does look at what underpins brain function in relation to food for example, so medical and social researchers are involved in the BBSRC group and this dialogue.

Orange group Q4: To what extent is being healthy about nature or nurture?

The state of your health is a reflection of your environment and genes. Behaviour of cells is dependent on what we eat. That is the level of interaction that we study (e.g. bacteria in the gut).

Small group discussion: orange group

Q: Imagine your small group has been put in charge of the UK being a health society. What would you need to know to help the UK be healthier?

- What makes the perfect diet?
- What do people need to eat to be healthy / have a proper diet?
- What makes us unhealthy?
- People should be encouraged to eat more beans and pulses
- Smaller portions and fresh produce would contribute to a healthy diet
- Different age, gender and other variables - the different effects these have on different diets
- The effect of super foods like berries and broccoli
- Possible side effects of actions taken
- Each manufacturer allocated a star rating depending on health rating
- Added nutrients - brain food
- Education of health benefits / promoting healthy benefits of certain foods
- Tax benefits for restaurants / caterers / those who produce food to make and serve healthy options

Orange group summary sheet

| What would you need to know? | Who would find the knowledge? (written on post-its) | Who should use the knowledge found? | | | |
|--|---|-------------------------------------|----------------------------------|----------------------------|----------------------------|
| Understanding food and its benefits for nutrition and health | <ul style="list-style-type: none"> • BBSRC • An impartial body of observers • Government funded research • Government via Research Councils | Schools Hospitals End users | Government | Cooks Chefs Caterers | Supermarkets |
| Does age, gender, other variables have an effect on diet at different life stages? | <ul style="list-style-type: none"> • Nutritionists • Green Peace / | Doctors | Legislators / government | Actuaries | Producers Manufacturers |
| What manufacturers put in food - what are | | Food producers /manufacturers | Farmers Agricultural industry | Education system | The public |

| | | | | | |
|---|---------------------|------------------------------------|---------|-----------------------------|-------------------------|
| healthy ingredients? | Friend of the Earth | | | | |
| What are the side effects of additives in food and other action to improve nutrition? (e.g. adding folic acid to bread) | | Nutritionists Technical experts | Doctors | People who take supplements | Pharmaceutical industry |

Q: What do you see as the challenges you face as you deliver a healthy society?

[written on post-its by participants]

- A nanny state
- Creating the evidence
- Financial
- The cost
- The problem of convincing the general public
- Vested interests
- Modern technology moving on
- Limits of science
- The limits of our current knowledge - what will we discover in the future?

Small group discussion: blue group

Q: Imagine your small group has been put in charge of the UK being a health society. What would you need to know to help the UK be healthier?

| <i>What knowledge we need</i> (small group discussions) | <i>Who should do it</i> (Small group discussions) | <i>Who should use it</i> (Post it exercise) |
|--|--|---|
| We need to be educated in nutrition and how it relates to our physical make up | <ul style="list-style-type: none"> • BBSRC | <ul style="list-style-type: none"> • Schools • Health professionals • Medical establishment, hospitals, GP's, dieticians etc |
| What causes allergies? | <ul style="list-style-type: none"> • BBSRC • Medical Research Council | <ul style="list-style-type: none"> • NHS • Farmers should produce healthy food as researched by BBSRC |
| Are we becoming more or less resistant to disease? | <ul style="list-style-type: none"> • BBSRC | <ul style="list-style-type: none"> • NHS • Government • Manufacturers • Research funded companies • Public in a feedback method |
| Research into what is basic good health | <ul style="list-style-type: none"> • BBSRC • Everyone else involved in health research | <ul style="list-style-type: none"> • Consumers • NHS • Government • The government to make reports that are easily understood by the public and can be used to advocate • Government should put policies in place that make it 'law' for up-to-date and accurate 'dietary' |

| | | |
|---|---|--|
| | | information to be provided to the general public by members of the Local Council and the NHS |
| Each person requires their own genetic health map (so that we understand why some people can drink and smoke and die at the age of 90 and others can't. A map which enables GPs to explain what each individual's health risks are) | <ul style="list-style-type: none"> • BBSRC | <ul style="list-style-type: none"> • NHS/ health specialists |
| What proof is there that the so called healthy option will be the answer to good health and longevity? (What is the correlation between behaviour and health) | <ul style="list-style-type: none"> • BBSRC | <ul style="list-style-type: none"> • NHS • Schools • Media • Government • Consumers |

What challenges will you face when delivering a healthy society?

[Comments recorded by facilitator on flip chart]

- No influence over the media
- Will money invested have an effect on the health of the nation? There are stakeholders involved with commercial interests.
- Everybody is different. Delivering a healthy society to people from different cultures, religions and economic classes can lead to uproar. It would challenge habits and beliefs.
- Selling the benefits of a good diet/ nutrition
- Potential loss of industries and jobs (tobacco, chocolate, drinks)
- How does a scientist get together with a psychologist (needed when delivering a healthy society)

Appendix 5 - Workshop 2, 12 March 2014

Identifying the challenges

Roving ideas storm

The group were split in to four sub-groups to answer the two following questions while reviewing the research areas / challenges they had produced at the previous session. As the groups moved around the room they were asked to tick statements they agreed with and put a cross against those with which they did not agree. Each sub-group used a different colour pen for their responses (green and blue for the blue group / red and black for the orange group).

Q1: Taking this point that we came up with in our discussions on Monday, what specific areas in food, nutrition and health research does this make you think BBSRC should focus on?

Q2: Are there other research areas related to this one that you have thought of since Monday?

Research area 1: Understanding how nutrition relates to our physical make-up - testing the correlation between food and health.

The specific effect of over consumption of sugar on health (e.g. diabetes) ✓✓
and salt & fat (Obesity / heart disease)

Importance of good nutrition for children's good health. ✓✓✓✓✓
Ante-natal

How does an expectant mother's diet affect her unborn child

Does a bad diet affect your mind?
and why do certain foods cause stress / anxiety depression? x ✓

See answers on genetic map (they are similar)

Lack of vitamins do have a direct correlation to wellbeing

Research area 2: Understanding the extent to which society is becoming more or less resistant to disease and more or less susceptible to allergies in relation to food and nutrition.

How do we know what allergies are inherited and which are a result of poor nutrition and additives ✓✓✓
✓✓

The effect of immunisations on developing allergies. ✓xx

What effect does our environment / water / gases in the air etc. have on our resistance to developing allergies? ✓

What food groups in the future could we develop allergies to?

Research into the effects of overuse of antibiotics on bacteria

Too much cleanliness not enough bacteria. Too much antibiotics causes immunity.

Research area 3: Research into what is basic good health, the benefits of food / nutrition for health and an understanding of what healthy ingredients are.

More research into natural products globally ✓✓

Facilitating engagement to gain insight

www.hopkinsvanmil.co.uk

Scientifically proven benefits of food produce ✓

How would one objectively define good health (A scale?) ✓✓

Pros and cons of GM / Cloning etc. ✓✓

Benefits of water and exercise ✓✓✓

Personalised nutrition, how can we tell / recognise the benefits ✓

How does the lay person know what & what not to buy ✓✓

Is there a scientific definition of what healthy is? Some opinion of what healthy is may be someone's opinion of unhealthy

What healthy ingredients do for different parts of the body / organs / brain

Research area 4: Understanding of the side-effects of additives in food and other action to improve nutrition.

What benefits can be found in certain foods to prevent disease / illness ✓

Clearer information / guidelines on sugar / salt limits ✓✓✓

Why do more people have nut allergy / food intolerances? ✓✓✓

Food education in schools i.e. learn to cook homemade ✓x should be the responsibility of the parents

How to make organic food cheaper / more mainstream ?

The effects of adding fluoride to water

How to make healthy food cheaper

More information on individual additives and their side effects

Age related research

Long-term effects of GM food on human beings ✓✓

Research area 5: Does age, gender, other variables have an effect on dietary needs at different life stages?

Important to think of people in care homes and the elderly are there specific foods which would be particularly good for elderly bowels? ✓✓✓

Support and education needed for people to know what to feed babies / small children ✓✓✓

Is there something specific we should be doing for pregnant woman?

Really important to think about

Food for school age children

Thinking about natural medicines which might be less harsh for elderly people than pharmaceutical products

Also related to how people feel - at different times and states of mind - understanding how food and nutrition relates to mental health ✓✓✓✓✓✓✓

Research area 6: Understanding the extent to which each person requires their own genetic health map which enables a GP to explain what each individual's health risks are and how they can be influenced by diet.

How much of a person's health is determined by genes and how much by diet, lifestyle. ✓✓✓✓✓✓✓✓

The genes that we are born with - can we do anything to change them through health / diet / nutrition? x ✓

Research into blood types - and the effect on certain diets / nutrients ✓

Research into nature / nurture - i.e. can your diet alone cause illness / weight issues - or is it just genetics? ✓

In what way can we finance in depth blood tests and bespoke diets

Family database of weaknesses

Orange small group discussion

Review of all the challenges

Q: What, if anything, is important about this challenge for you?

Participant views recorded by the facilitator on the flip chart. Participants were encouraged to stick up to two sticky dots on the research areas / challenges they felt were particularly important and a red sticky square on those that they did not believe were an important area for BBSRC.

BBSRC research area: Understanding how nutrition and health are related through biological mechanisms

- The extent to which saturated fat is related to heart disease - why is it? Or do we know enough now?
- This is very important
- My comment throughout: why aren't these things more in the public domain?
- You can't make assumptions in this area you have to create the evidence
- Understand the bad effects of some things [on biological mechanisms]
- How can you recommend substitutes if you don't know what the effects are?

BBSRC research area: Understanding the interactions between diet, genes, lifestyle and biology ● ■

- It's a holistic approach - we need to have a knowledge of every area
- It's interactive - we need food to live and a healthy diet will encourage us to live well
- Isn't this just common sense
- But our genes are an important factor - I want to know (as Richard said) that I can keep the gene light bulb on for as long as possible
- Don't environmental factors have a role to play? We're breathing in certain chemicals
- The effect on shift workers is important
- I don't think government money should be spent on this - it's just about limiting overindulgence and as others have said, therefore common sense
- Genetics are a useful area for research, but lifestyle - no
- [Disagreement in the group on this, majority feel it is important]
- We don't want a nanny state - this is about personal choice

BBSRC research area: Understanding how to influence biological responses to foods and diets to increase health. ●

- How much should food producers / scientists mess with food
- We're seeing because of over-farming a loss of nutrients in the soil so we need to research how to put the nutrients back into food



BBSRC research area: Understanding the behavioural and neurological influences on food intake.



- This is massive, especially for kids - understanding what the brain needs is most important in developing brains
- Eating oily fish for example in the thing we saw on Monday about women
- Wider effects on society of understanding this issue are important

Participant research area: Does age, gender, other variables have an effect on diet at different life stages?

- What about economic deprivation and effects on diet? There are kids in my area whose parents can only afford to buy a bag of chips - and that's their kids evening meal
- The effects of specific vitamins and minerals for specific age related issues (osteoporosis / menopause) - plus food groups, doctors should be issuing advice - but that's all probably for the Medical Research Council

Participant research area: Understanding the side-effects of additives in food and other action to improve nutrition.



- Fluoride for example - the side effects are important to consider, there has been some research saying there is a correlation between adding fluoride to water and stomach cancer, for example
- This is an important issue to think about

Participant research area: Understanding what is basic good health, the benefits of food / nutrition for health and an understanding of what healthy ingredients are.



- This is more about education than research
- This is about labelling and being clear
- The information is out there you just need to know where to look
- But this is not for BBSRC

Participant research area: Understanding how nutrition relates to our physical make-up - testing the correlation between food and health

- This is related to answers for the BBSRC research area about the relationship between diet, genes and biology - so nothing more to add.

Participant research area: Understanding if society is becoming more or less resistant to disease and more or less susceptible to allergies



- This is important and we should be looking at allergies and asthmas but perhaps this is more to do with the Medical Research Council

Participant research area: To what extent does each person require their own genetic health map which enables a GP to explain what each individual's health risk are and how they can be influenced by diet?

- This is really important, but how to finance it?
- This for me is extremely important and relates to what I was saying at the beginning of the session on Monday about my interest in the connection between chemicals and cancer - I want to know what in food causes cancer.

Other cards, drawn from the Roving Ideas Storm by the facilitators were ranked but not discussed:

Research into natural medicines which might be less harsh for elderly people than pharmaceutical products



The pros and cons of genetically modified food / cloning on health



Research into what healthy ingredients do for different body parts / organs / the brain



Research into the effects of overuse of antibiotics on bacteria ●

What benefits can be found in certain foods to prevent disease / illness ●

Understanding how nutrition relates to mental health ● ●

Research into blood types and the effect on certain diets / nutrients ● ● ●

Orange group summary of the 5 challenges which are in their view most important / relevant to BBSRC

1. Understanding the behavioural and neurological influences on food intake ● ● ● ● ●
2. Research into blood types and the effect on certain diets / nutrients ● ● ●
3. The pros and cons of genetically modified food / cloning on health ● ● ●
4. Understanding the side effects of additives in food and other action to improve nutrition ● ● ●
5. Does age, gender, other variables have an effect on diet at different life stages? ● ●

Blue small group discussion

Review of all the challenges

Comments written by participants on post-it notes

Q: What, if anything, is important about this challenge for you?

Interaction between diet, genes, lifestyle & biology

- Proof
- It could be that for different groups there are different needs for life identified
- Understanding the interaction of genes, lifestyle & biology is fundamental to healthy food and production of food and allows us to make informed choices
- Foods with a certain nutrient should be enhanced to have more of that nutrient in them so each portion will have more than the average food would have
- How good diet / exercise can affect my health and resistance to diseases as I age
- It is important to understand how to keep my child / family healthy and fit - there should be more available information
- That the biology and genes make up us and hence our lifestyle. We depend on each section. So what evidence is there for this interaction?
- It would help me to pinpoint more accurately the choices I would need to make to live longer and to educate my child / their children to live longer
- I understand that I eat differently at different times: always hungry after exercise / want sugar when tired - why?
- How will foods effect my children's health? Resistance to allergies
- Public awareness of the interconnected nature of diet, genes and lifestyle being increased so that nutritional education becomes common place - this should result in a healthier society overall
- How are we living (lifestyle choices)
- What foods are we eating that should be affecting us in a good way?
- Diet which will have different effects to different age groups
- More public awareness to the good diet plus lifestyle choices

Understanding the behavioural and neurological influences on food intake

- Not important to me: I eat what I want when I want, I listen to my body
- What foods / diets can create / promote positive moods & behaviour
- Behavioural influences upon dietary choices: more healthy foods need to be more readily available at affordable prices so that healthy dietary choices become easier to make to a larger amount of individuals i.e. healthy substitute for 'junk'
- This is vitally important because we often eat to deal with feelings rather than hunger
- We need to know what too much or not enough is of a food substance
- How you feel after you eat. What mood you are in? e.g. a person may drink alcohol when they are in many different moods - happy, sad, depressed, angry

- Can food effect mental health as well as the mind in concentrating, learning, focus etc?
- Different lifestyle choices will put people on different moods and then will determine what they are going to eat or what they feel they want to eat
- Need to know the best nutrition for the lifestyle choices and events

How to influence biological responses to foods and diets

- This is an interesting area and I am interested in finding out which foods are good for you on a biological level. But I do worry about modifying foods too much
- It is important but for me it needs to be delivered in a simple way so the everyday person understand what it means and what they need to do.
- In order to enhance food as a means to increase health upon consumption can be done by enriching the soil in which the food is grown with the appropriate minerals - this aspect can be researched more deeply as opposed to the controversial 'GM' method
- Promoting the benefits of certain compounds / properties in foods to maintain good health!

Understanding how nutrition and health are related through biological mechanisms

- I am very set in my ways! I know what makes me happy to lift my mood
- Understanding how nutrition and health are related is crucial to obtaining the recipe for a healthy diet
- Certain foods will affect your cells and how it flows through the body
- What effect it has on organs dealing with food
- It is too complex to understand
- It is not important to me, I just want to know the bottom line
- The effect this will have on bacteria in my gut
- The interconnectedness of the various vitamins, minerals, phytonutrients (sic) found in food and their effect upon the various bodily systems: lymphatic system, endocrine system GI tract etc.
- Will enable us to know exactly how much of something we can eat without damaging our bodies
- Think it would be good to know! Always wanting to find things out
- I find this interesting and feel it is the starting block for future practical health benefits

Other cards, drawn from the Roving Ideas Storm by the facilitators were ranked but not discussed:

Understanding how nutrition relates to our physical make-up - testing the correlation between food and health ●

Research into natural medicines which might be less harsh for elderly people than pharmaceutical products ● ■

Understanding if society is becoming more or less resistant to disease and more or less susceptible to allergies in relation to food and nutrition ● ● ●

Understanding what basic good health is, the benefits of food / nutrition for health and an understanding of what healthy ingredients are ● ●

To what extent does each person require their own genetic health map which enables a GP to explain what each individual's health risks are and how they can be influenced by diet ● ● ●

Research into blood types and the effect on certain diets / nutrients ● ● ●

The pros and cons of genetically modified food / cloning on health ● ● ●

Research into the effects of overuse of antibiotics on bacteria ●

Does age, gender, other variables have an effect on diet at different life stages?






Understanding of the side effects of additives in food and other action to improve nutrition ● ● ●

Research into natural medicines which might be less harsh for elderly people than pharmaceutical products?



Blue group summary

The 5 challenges which are in their view most important / relevant to BBSRC

1. What benefits can be found in certain foods to prevent disease / illness 
2. Understanding how nutrition relates to mental health 
3. Understanding the behavioural and neurological influences on food intake 
4. Pros and cons of genetically modified food / cloning on health 
5. Research into what healthy ingredients do for different parts of the body / brain 

Key players:

- BBSRC
- Food manufacturers
- Medical community
- Natural health community
- Government - getting the message out to health professionals and schools

Blue group summary discussion

Q: What are the implication of these research areas / challenges for those involved in the food, nutrition and health research system?

- Will enable people to make more informed choices if they have more information
- Less stress on the NHS as people will be healthier
- Less days off sick so less of a loss to the economy
- £ spent now by NHS (£5.1 billion) can then be spent elsewhere: what would be the opportunity / cost in not doing that?
- Multiplier effect with a saving of more than £5bn
- Will food manufacturers change in line with the market's demand for healthier food?
- Can the third world / emerging world benefit from this research on a given free basis?
- Share this knowledge now not in 10 years' time!

Orange group summary discussion

Q: What are the implication of these research areas / challenges for those involved in the food, nutrition and health research system?

- GM: people who are hungry are going to be fed
- Knowledge will mean we can make more informed choices
- This makes us freer as we were not misinformed
- It will free the NHS up to deal with certain illnesses
- Neurological: perhaps society will be able to influence adopt behaviour so crime is reduced - comes back to nature / nurture
- There are economic implications - 60,000 children go to bed without a full meal - [referring to Kids Company data]. There are economic implications to the healthy eating discussion, kids in my street go to sleep having only had a bag of chips for their tea.
- Lack of knowledge and only having parts of the knowledge are contributing to the neurosis of the population about food - young girls on facebook talking about their diet very negatively / suicides

Summary of who the key players are who will need to take on the challenges:

- The Government - delegating to others
- BBSRC
- Pharmaceutical companies
- NHS
- Food producers
- Schools promoting healthy food - it makes a difference if the food is colourful and beautifully presented
- Care homes
- Hospital food

- Media
- Role models
- Advocates
- Mums & individuals

Plenary

Participant Q: Is there a scientific definition of what healthy is?

A: The short answer: No. One answer is if healthy not ill - but that's not an answer. Perhaps more helpful is how well we respond to challenges in our lives.

Comparing the challenges

Q: Where are the similarities between the research areas / challenges identified?

- Talking about the gut is clearly quite important
- Behaviour seems particularly important and effects on the brain
- What foods are mood enhancing? We need blood tests in deficiency areas
- BBSRC: re mental health. We have thought about it but it is good to know that it should have a particular emphasis
- Role models
- Advocates

Q: Where are the differences between the research areas / challenges identified?

- Link to biological mechanisms - there was more on that tonight than on Monday
- Monday was a bit easier, I didn't understand what biological mechanisms are

BBSRC final commentary: This is complicated material. We applaud the group's effort to come up with things that are new.

David Gregory summing up [transcribed from the audio recording]

I think it's been a cracking two days. I can't tell you how good it felt tonight when I came in and saw all those buzzy people and heard all the noise as everyone was going round the charts and so on. For me it has been a really terrific dialogue. I want to start off by thanking you for being such great people because I think we've got a lot out of it.

So what are we going to do? Well the first thing is that we are going to write up a report on this and share the findings with you so that you will get a written report of what we've done. That was a commitment we made at the start.

We are then going to take the results of this back to the Working Group who are writing the report for BBSRC and put what's been learnt as part of this back in to the report so that it all forms part of it. That final report, trust me, is going to be full of long complicated words. It is written for scientists. It tells scientists that that is what we are interested in doing and they can bid for research in that area. That is the target audience. But we will produce a summary of that and we will send that to all of you as well so that you can see the finished product as well.

There are four things which I've picked up from these sessions. This is not comprehensive, just first thoughts:

1. Around language - I think we have a continuous duty to speak in simple language, but clearly we don't always get it right. For us biological mechanisms is about as simple as we get, but it is not. We need to take people on journeys so that they can understand it. If we are going to influence people and communities else that is very important.

2. Reinforcing collaboration is a big thing in this area. And I've made a big thing of it in chairing this group. We have had to have the Medical Research and Social Science Councils involved. There are lots of things that we could talk about like mental health, that's not really BBSRC's responsibility but we can work with

others on it. We also need to make sure that we work with Government so that it is picked up and actually acted on - we will do that. So collaboration is important.

3. The next thing under that is that we have targeted our work largely at what you would call public health and society, in other words, those things that do everybody good. Yet a lot of the feedback from you was about personalising these things, what does it mean for me? What do I have to do? How does it affect my genetics? I think we need to take that away and think about it because that is interesting too.

4. Then the final point is around trust. One is as a surprise and one is an observation. The observation is that both groups have picked up on genetic modification and cloning. But from a scientific point of view that argument is done now, it's worn down. If you go to America you can widely buy genetically modified foods. So there is an element here that we still have to take people on a journey with that. The surprise is that there has been very little feedback, except perhaps in the last group's feedback on the role of the media in this. Where do you go for good information? If you talk to anyone who works in the food industry they would talk about two groups of people who are fundamentally unhelpful. Newspapers who put food headlines on the front page because it drives sales. The whole thing on sugar last week-end was taken from a report by the WHO on dental caries, it was they don't want to people to have rotten teeth. Nothing about obesity, nothing about cardio-vascular disease. Go and read the report. How many newspapers mentioned that the report was about dental health? None. Newspapers are there to sell and people buy them because of those headlines.

The other thing is that there are groups of people who exist to make noise about certain issues. We call them non-government organisations and they exist because they want to promote different ways of working. And you didn't mention that as a group, and I thought there would have been more of that.

Thank you again for all your hard work.

Thoughts written on the ideas wall over the 2 sessions

- Why are processed fruit and veg counted as one of your 5 a day when they have added salt and sugar to preserve them for up to a couple of years?
- Nutrients to stop dementia
- The 'public' needs to become better educated in regards to the constitution of a healthy diet as most information available is conflicting
- I believe beans / pulses should be promoted

Two participants brought in articles that interested them and put them on the ideas wall. One [here](#) on caffeine in chocolate. The second [here](#) on alcohol as a cause of cancer from Cancer Research UK.