

Less than thoroughly cooked beef burgers: Guidance for food business operators and local authority officers

Summary of stakeholder responses

[10 October 2022]

Introduction

This consultation was issued on 27 January 2022 and closed on 27 April 2022.

The purpose of the consultation was to seek comments from stakeholders on the revised guidance for less than thoroughly cooked beef burgers. The changes to this guidance have been developed with input from stakeholders including businesses and local authority representatives.

There have been no changes to the FSA's policy on less than thoroughly cooked beef burgers, revisions have only been made to improve accessibility and clarity for the user.

The main changes to the guidance are:

- making definitions, language and layout clearer and easier to understand
- providing further information on how compliance can be achieved, as well as highlighting best practice
- providing advice on buying minced beef or beef burgers from establishments specifically approved for producing products intended to be less than thoroughly cooked
- introducing an infographic to help identify the controls needed
- providing further details on how consumer messaging should be provided to ensure it is sufficiently accessible

- providing an extended glossary to explain technical terms
- changing the format of the guidance on our website from a PDF document to HTML webpages to improve accessibility and searchability, the guidance is also available in PDF

The FSA is grateful to the stakeholders who responded to the consultation. We have set out in the table below responses to the questions we asked stakeholders to consider. The final section in the table looks at comments from stakeholders which were outside of the questions we asked stakeholders to consider.

The key proposals on which the consultation sought views were:

1. Is the guidance clear and easy to follow? If not, what additional information is required?
2. Does the guidance contain sufficient information to aid compliance with the law? If not, what additional information is required?
3. Is our assessment of the impact of the updates sufficient?
4. Do you favour the term 'less than thoroughly cooked' and the acronym LTTC or would you prefer that we used a different term such as 'pink' or 'rare' or lightly cooked, or something else?

The Food Standards Agency's considered responses to stakeholder comments are given in the last column of the table. A summary of changes to the original proposals resulting from stakeholder comments is set out in the final paragraph.

We have removed individuals' names and summarised some of the stakeholder comments.

Summary of substantive comments

Is the guidance clear and easy to follow? If not, what additional information is required?

Respondent	Comment	Response
Hull City Council	I would favour a pdf rather than a webpage. Guidance documents such as this can be used in enforcement proceedings, information on a website doesn't have the same gravity.	Comment noted. Webpages and PDFs are not mutually exclusive and the guidance can be downloaded as a PDF. HTML (Hypertext Markup Language) web pages are preferable in terms of accessibility and searchability, which is why we aim to provide guidance in both formats.
Hull City Council	The new guidance is easy to follow.	Comment noted.
Dunbia	The guidance is very confusing with regards to what is a legal requirement and what is best practice. The layout of the document does not make this easy to understand and in some instances the advice appears to be contradictory.	We will provide further clarification within the guidance.
Dunbia	More referencing, including numbering of pages, would be beneficial in the guidance document.	We will incorporate this within the PDF version of the guidance.

Respondent	Comment	Response
Institute of Food Science & Technology	It would be better to group shave/sous-vide together as cooking methods and source control separately as a risk mitigation strategy.	We will provide further clarity within the guidance.
Institute of Food Science & Technology	The use of the word 'can' is unclear when referencing the methods of producing less than thoroughly cooked burgers to give similar level of reductions in bacteria. The methods will (or should) give the required level of reduction in bacteria; it may be better to say the methods, if followed correctly, will give similar levels of reductions in bacteria.	We will look at this and amend within guidance if deemed necessary
Babergh and Mid Suffolk District Councils	The guidance is clear and easy to follow.	Comment noted.
Swindon Borough Council	It should be made clearer the sous vide information is an overview only and that it is a complex process.	We will provide further clarity within the guidance.
Swindon Borough Council	We feel having webpages actually makes it harder to ensure it has all been read. We also feel it is potentially also hard to follow when changes have been made, hopefully any changes will still be logged centrally.	Comment noted. Webpages and PDFs are not mutually exclusive and the guidance can be downloaded as a PDF. HTML (Hypertext Markup Language) web pages are preferable in terms of accessibility and searchability, which is why we aim to provide guidance in both formats

Respondent	Comment	Response
Armagh City, Banbridge and Craigavon Borough Council	The guidance is clear and easy to follow.	Comment noted.
Manchester City Council Environmental Health Officers	The guidance is an improvement on previous guidance and was clear and easy to follow.	Comment noted.
Northern Ireland Food Managers Group (NIFMG) on behalf of Environmental Health Northern Ireland (EHNI).	The guidance is clear and easy to follow.	Comment noted.
Mendip District Council	The guidance is generally clear and easy to follow. It appears to be targeted at national chains or larger high end establishments who will have staff or engage consultants with sufficient technical knowledge to understand the concepts. Smaller sole trader establishments serving standard pub food will be overwhelmed by a 30 page document and are unlikely to be familiar with six log reduction in bacterial loading etc. The document would be useful in persuading one off gastro pubs not to offer LTTC burgers.	Comments noted. The guidance aims to balance providing enough information for readers to understand the risks to the consumer associated with LTTC beef burgers, while keeping the guidance easy to understand.
Chartered Institute of Environmental Health (CIEH)	Yes, the guidance is clearer, easy to follow and understand than previous guidance. The new format of the document from PDF to webpages is welcome and improves accessibility.	Comment noted.
Wales Food Safety Expert Panel	The layout and terminology in the revised guidance is much improved being clearer, simpler and easier to understand .	Comment noted.

Respondent	Comment	Response
<p>North Norfolk District Council / Breckland Council / Great Yarmouth Borough Council / Broadland District Council / South Norfolk Council / Norwich City Council / Borough Council of Kings Lynn and West Norfolk</p>	<p>There is concern over how technical the guidance is for small businesses. This is particularly the case where it talks about 4-log reductions. There is little information in the guidance on how such a log reduction is achieved, as there are no time temperature combinations provided. Most small businesses will struggle to gather the technical knowledge and have the resources needed to develop a HACCP for this part of the process. It would therefore be beneficial if guidance could be included on time/temperature combinations for 4-log cooking.</p>	<p>Comment noted. The guidance aims to balance providing enough information for readers to understand the risks to the consumer associated with LTTC beef burgers while keeping the guidance easy to understand.</p> <p>There are a number of factors that impact on time temperature combinations for a 4-log reduction of bacteria for LTTC beef burgers, these include factors such salt, fat content and burger thickness. As such, we are not able to provide time temperature combinations for every scenario. For this reason, this guidance provides information on how businesses would need their methods to be validated independently.</p>
<p>Pupils 2 Parliament</p>	<p>The children rated the readability of the revised guidance on a five point scale, from 'very easy' through to 'very hard'. This yielded average scores between 1 and 5, those with higher scores being harder to read and understand. We asked the children to rate how easy or hard they thought each extract would be for anyone to read, rather than whether they personally found it easy or hard. As a</p>	<p>We would like to thank the children involved in reviewing this guidance. We will consider how we can use this feedback</p>

Respondent	Comment	Response
	check on how challenging to their own reading skills they thought each extract was, we also asked them to count and record the number of words they did not know in each passage. The average rating was 3.6	<p>when carrying out staff training on writing for the web, to ensure we can target our advice appropriately.</p> <p>Guidance published on our website must comply with Public Sector Bodies Websites and Mobile Applications Accessibility regulations 2018 (PSBAR). Our websites, platforms and documents must meet the requirements of the Web Content Accessibility Guidelines standards. We comply with WCAG 2.1 'AA'.</p>

Does the guidance contain sufficient information to aid compliance with the law? If not, what additional information is required?

Respondent	Comment	Response
Dunbia	A citation or a link to research demonstrating that the source control method leads to a 2 log reduction would be useful.	A link is provided within the guidance, in the section entitled 'Source Control Method', to a critical literature review conducted by the

Respondent	Comment	Response
		University of Liverpool in December 2018. The critical literature review assesses the significance of intervention methods to reduce the microbiological load on beef through primary production.
Dunbia	All of the steps in figure 1 are legal requirements, making the suggestion that applying them could lead to a 2 log reduction illogical.	Comment noted. A processor's LTTC approval requires enhanced controls, that go beyond specific legal requirements, to be in place. These controls and the specification they place on their suppliers form part of the processor's HACCP system.
Dunbia	The longer description of the source control method lists different controls to those described in figure 1.	Comment noted. Figure 1 is intended to be a high level overview illustrating the principles of the control measures and how they work together. This figure does not seek to replicate all of the detail contained within the text of this section.
Dunbia	Avoiding cross contamination is something that should be in place in all food businesses and is not something that will lead to a reduction in microbiological load.	We will add clarity to the guidance.
Dunbia	Microbiological testing is not a control method, it can only be used to verify controls and so should not be listed as a control.	We will add clarity to the guidance.

Respondent	Comment	Response
Dunbia	Treatments at abattoir level are examples and not requirements. Suggested that it would be more appropriate to make these requirements as part of an approval process.	Comment noted. Changes to the legislative requirements or FSA policy are beyond the scope of this consultation.
Dunbia	Lack of clarity within the 'Purchase' section. The current text would suggest that the use of approved suppliers is optional.	<p>This will be taken into consideration and, where appropriate, further clarity will be provided in the guidance.</p> <p>It is not a legal requirement for businesses serving LTTC burgers to purchase minced meat or beef burgers from an approved supplier.</p> <p>Meat processors which are approved to produce minced meat and/or meat preparations must also be specifically approved to produce minced meat or beef burgers which are to be LTTC. However some meat processors are exempt from approval for producing minced meat and/or meat preparations because they meet certain specified criteria. As these businesses do not need approval for the production of minced meat and/or meat preparations they are also exempt from being specifically approved for minced meat and/or meat preparations to be LTTC. For additional information on approval exemptions, please refer to Retained EU Law Regulation (EC) No.</p>

Respondent	Comment	Response
		853/2004 in England and Wales and Regulation (EC) No. 853/2004 in Northern Ireland.
Dunbia	It is unclear which stages of the supply chain might be approved.	We will add clarity in the guidance.
Dunbia	Interventions conducted at the abattoir are critical for the success of the source control method. Is it not appropriate that abattoirs be approved?	Comment noted. This comment is beyond the scope of this consultation.
Dunbia	Are enhanced controls still a requirement at abattoirs as they were at the outset of LTTC burger production?	The approval of meat processors producing minced beef and/or beef burgers to be LTTC requires enhanced controls to be in place, part of which are to ensure the meat they source is suitable for its intended use. These controls and the product specification form part of the processors' HACCP system.
Dunbia	There is lack of clarity around the requirements and responsibilities for microbiological sampling.	This will be taken into consideration and, where appropriate, further clarity will be provided within the guidance.
Dunbia	Within the section 'Production of beef burgers by catering establishments', there is a lack of clarity as to what is a legal requirement and what is not.	This will be taken into consideration and, where appropriate, further clarity will be provided within the guidance.

Respondent	Comment	Response
Dunbia	It is unclear whether a consumer message is legally required or not.	Businesses have a legal obligation to provide information to the consumer concerning the avoidance of specific adverse health effects from a particular food or category of foods. Although it is not a legal requirement to provide this by way of a consumer message, it is best practice so that the consumer can make an informed choice. Where appropriate, further clarity will be provided within the guidance.
Hull City Council	<p>The guidance contains enough information to comply with the law.</p> <p>The E. coli guidance should be referred to very prominently.</p> <p>70 degrees for 2 minutes is more than 'best practice', it is the recognised standard. Advertising it as 'best practice' will lead to confusion amongst businesses and create potential difficulties for enforcement officers. Thorough cooking should be clearly communicated to be the favoured method.</p>	These comments will be taken into consideration and where appropriate further clarity will be provided in the guidance.
Institute of Food Science & Technology	Concerns relating to which parts of the law the guidance aids compliance with. This is of most concern for the source control method where the information relating to this method is not sufficient to aid compliance with the law.	These will be taken into consideration and where appropriate further clarity will be provided in the guidance.
Babergh and Mid Suffolk	Yes	Comment noted.

Respondent	Comment	Response
District Councils		
Armagh City, Banbridge and Craigavon Borough Council	The guidance contains sufficient information to aid compliance with the law. The appropriate legislation and regulatory guidance has been included.	Comment noted.
Manchester City Council – Environmental Health Officers	More detailed information should be provided on challenge testing. Particularly, what would be expected from challenge testing and what enforcement officers should consider when assessing the results of challenge testing.	Comment noted. Due to the many different production systems and ingredients businesses may use, we are not able to give prescriptive advice as each variable would impact challenge testing. Where challenge testing is carried out, this includes businesses producing their own supporting science/evidence and incorporating this into the food safety management system. The business may wish to seek expert advice from an accredited laboratory.
Manchester City Council – Environmental Health Officers	Clarity required on whether burgers are considered “ready to eat” or a “raw” food after sear and shave has taken place (prior to final cook) and consequent cross contamination considerations.	This will be taken into consideration and where appropriate further clarity will be provided in the guidance.

Respondent	Comment	Response
Manchester City Council – Environmental Health Officers	More detail needed to sections on sous vide and sear and shave.	This will be taken into consideration and where appropriate further clarity will be provided in the guidance.
Manchester City Council – Environmental Health Officers	More detail needed around the shelf life where burgers are being prepared in advance	It is the responsibility of the business to determine the shelf life of the burgers in line with their food safety management system. We will aim to provide further clarity of this within the guidance.
Northern Ireland Food Managers Group (NIFMG) on behalf of Environmental Health Northern Ireland (EHNI).	The guidance contains sufficient information to aid compliance with the law. The appropriate legislation and regulatory guidance has been included.	Comment noted.
Mendip District Council	Section on sous vide could be expanded with emphasis on the complexity and links to further guidance. Must be made more clear that this section of the guidance is here and that the labelling section is of relevance to burgers cooked using this method.	This will be taken into consideration and where appropriate further clarity will be provided in the guidance.

Respondent	Comment	Response
Mendip District Council	The time temperature relationships were in the old guidance – have they been removed?	Yes, these have been removed as they are widely available elsewhere, for example in Safer Food Better Business .
Mendip District Council	Some graphics or pictures of LTTC burgers would be beneficial.	We have elected not to include visual representation of what a LTTC burger would look like as it is the controls in place that are of most importance and not the visual appearance of the burger.
Mendip District Council	A summary flow chart at the beginning might be helpful.	We will review and consider this for inclusion
Mendip District Council	Separation of equipment in the sear and shave section should be emphasised.	This will be taken into consideration and where appropriate further clarity will be provided in the guidance.
Mendip District Council	LTTC burgers should be prohibited from children’s menus.	Comment noted. We will consider adding advice about children’s menus.
Chartered Institute of Environmental Health (CIEH)	Generally yes, although a detailed checklist of questions for food establishments producing less than thoroughly cooked beef burgers would be useful.	The inclusion of a checklist for businesses will be considered.
Chartered Institute of	The guidance is confusing for food businesses in respect of approval. The guidance states that approved premises must have specific	We will provide further clarity in the guidance.

Respondent	Comment	Response
Environmental Health (CIEH)	approval for producing meat/burgers to be less than thoroughly cooked, but later refers to approval exemptions.	
Chartered Institute of Environmental Health (CIEH)	It would be useful if the guidance could contain more detailed advice for enforcement officers to ensure a consistent approach across England, Wales and Northern Ireland and a level playing field for businesses.	These will be taken into consideration and where appropriate further clarity will be provided in the guidance.
Armagh City, Banbridge and Craigavon Borough Council	The guidance clearly lays out legal requirements and best practice information for all stages and sectors involved in the preparation and supply of burgers that are intended to be less than thoroughly cooked.	Comment noted.
Manchester City Council Environmental Health Officers	It clearly set out the three methods and differentiated between best practice and legal requirements.	Comment noted.
Northern Ireland Food Managers Group Managers Group	The guidance clearly lays out legal requirements and best practice information for all stages and sectors involved in the preparation and supply of burgers that are intended to be less than thoroughly cooked.	Comment noted.

Respondent	Comment	Response
Wales Food Safety Expert Panel	While the guidance states that if an approved establishment is producing minced beef or burgers which are to be less than thoroughly cooked, they must be specifically approved to supply these products, there is currently no specific legal requirement for this. The guidance is confusing on this point. As it talks about approved establishments under EU Regulation 853/2004 but also approved for LTTC. It then goes on to say that where establishments are exempt from approval caterers should ensure their suppliers have the same controls in place.	We will provide further clarity in the guidance to address these concerns.

Is our assessment of the impact of the updates sufficient?

Respondent	Comment	Response
Babergh and Mid Suffolk District Councils	Yes	Comment noted.
Swindon Borough Council	Not enough information to really comment on this, but it appears the costs attributed to the revision is very low to be the entire impact. Has the impact to Local Authorities been considered? Each officer also needs to re familiarise themselves with it.	Comment noted. The impacts to local authorities and businesses were considered. Only those local authorities with businesses offering LTTC beef burgers will need to re-familiarise themselves with the revised guidance. Our belief is that the revised guidance produced as a result of this consultation will be clearer and easier to read, benefiting both businesses and local authorities.

Respondent	Comment	Response
<p>Armagh City, Banbridge and Craigavon Borough Council</p>	<p>No significant impacts on either businesses that offer LTTC beef burgers or to local authority officers in re-familiarising themselves with the guidance. The assessment of the impact of the updates is sufficient.</p>	<p>Comment noted.</p>
<p>Manchester City Council – Environmental Health Officers</p>	<p>As a local authority Environmental Health team the impact would be in terms of training for staff on the updated guidance, comms to businesses and raising awareness with relevant businesses. Potentially businesses may come to us for advice and to help in assessing whether their business is compliant with the guidance, however, we are not aware of any businesses still serving LTTC burgers in our area.</p>	<p>Comment noted.</p>
<p>Northern Ireland Food Managers Group (NIFMG) on behalf of Environmental Health Northern Ireland (EHNI).</p>	<p>No significant impacts on either businesses that offer LTTC beef burgers or to local authority officers in refamiliarising themselves with the guidance. The assessment of the impact of the updates is sufficient.</p>	<p>Comment noted.</p>
<p>Marietta Gill - Mendip District Council</p>	<p>No, none of us picked up on the impacts of the updates.</p>	<p>Comment noted. Information on the impacts of the revised guidance was included on the web page which summarised the consultation.</p>

Respondent	Comment	Response
Chartered Institute of Environmental Health (CIEH)	CIEH is not best placed to comment on the impact assessment.	Comment noted.

Do you favour retaining the term ‘less than thoroughly cooked’ and the acronym LTTC or would you prefer that we used a different term such as ‘pink’ or ‘rare’ or ‘lightly cooked’ or something else?

Respondent	Comment	Response
BUPA	The term ‘rare’ is widely known and understood by consumers. Remove the acronym LTTC.	Comment noted.
Campden BRI	The term less than thoroughly cooked would be better replaced by a shorter term that is better understood by smaller FBOs (Food Business Operator) and members of the public. Such as “Rare”.	Comment noted.
Dunbia	Favour using the term ‘undercooked’. It describes the characteristics of the product clearly and suggests a lower standard than a ‘normal’ burger which is appropriate, given the increased risk. Terms such as ‘pink’ or ‘rare’ would normalise the practice of consuming undercooked burgers to consumers and also encourage the practice at home.	Comment noted.

Respondent	Comment	Response
Hull City Council	Yes. 'Rare' is often confused with the cooking of steaks, the knowledge over the difference of rare steak and rare burgers isn't what it should be amongst chefs. A different terminology indicates a different hazard with different controls.	Comment noted.
Institute of Food Science & Technology	Yes, as long as the guidance is clear. We would prefer the use of this term to the other proposals, as these can be confused with cooking methods for whole cuts of meat which would be safe to consume.	Comment noted.
Babergh and Mid Suffolk District Councils	Yes	Comment noted.
Swindon Borough Council	Yes, although technical, it does convey what the circumstances are to the consumer. Terms such as 'pink' and 'rare' misrepresent what is taking place to the consumer. For example, as consumers may order a rare or pink steak and may assume the safety risks are the same.	Comment noted.
Armagh City, Banbridge and Craigavon Borough Council	The term accurately conveys the actual process involved and with it the implied risk associated with consuming products prepared in this way. Using terms 'pink' or 'rare' could lead to confusion among consumers. The use of these terms, which are familiar and commonplace in the preparation and service of foods such as steak may lead some consumers to assume that the food safety risks associated with both processes are the same.	Comment noted.

Respondent	Comment	Response
Manchester City Council – Environmental Health Officers	LLTC has now become a recognised term and it is the best description of how the burgers are offered for sale (there are potentially many interpretations of the term “rare”)	Comment noted.
Northern Ireland Food Managers Group (NIFMG) on behalf of Environmental Health Northern Ireland (EHNI).	The term ‘less than thoroughly cooked’ and the acronym LTTC should be retained. The term ‘less than thoroughly cooked’ accurately conveys the actual process involved and with it the implied risk associated with consuming products prepared in this way. Terms ‘pink’ or ‘rare’ could lead to confusion among consumers. The use of these terms, which are familiar and commonplace in the preparation and service of foods such as steak may lead some consumers to assume that the food safety risks associated with both processes are the same.	Comment noted.
Mendip District Council	The LTTC acronym is fine for people with an appropriate level of awareness/technical knowledge, but not so suitable for people actually doing the cooking in many instances which is where the suitable HACCP and adherence to procedures comes in. The use of pink or even rare can be misleading when it comes to sous vide, because although the product is pink or appears rare it should be thoroughly cooked.	Comment noted.
Chartered Institute of Environmental Health (CIEH	Environmental health professionals have now become accustomed to the term ‘less than thoroughly cooked’ in connection with beef burgers and there doesn’t appear to be a compelling case for change. ‘Rare’ and ‘pink’ are commonly used in connection with steak and duck	Comment noted.

Respondent	Comment	Response
	respectively so retaining 'less than thoroughly cooked' in respect of beef burgers seems sensible.	
Mendip District Council	The definition of thorough cooking was very clear. There is extensive use of jargon, not a problem for enforcers or people with technical food competency, so the glossary at the end extensive and potentially needed for others.	Comment noted.
North Norfolk District Council, Breckland Council, Great Yarmouth Borough Council, Broadland District Council, South Norfolk Council, Norwich City Council, Borough Council of Kings Lynn	The term Less than Thoroughly Cooked needs reviewing as it is not a term that many food businesses are likely to use when putting on menus with the warnings. Most understand the term rare/medium rare burgers	Comment noted.

Respondent	Comment	Response
and West Norfolk		
Pupils 2 Parliament	<p>The childrens' first choice was 'pink', with 'lightly cooked' coming second. The current term, 'less then thoroughly cooked', received least support of all. "Raw", "pink burger", "red", "half cooked" and "under cooked" were all suggested. The children were not in favour of the acronym 'LTTC'. Some wrote that use of acronyms such as LTTC is clever, brief and to the point – but only good if the acronym is defined in the text (e.g., in brackets), and the reader remembers the definition and doesn't miss it by looking something up in the middle of the guidance. One pupil wrote "I don't think it's a good idea, as if you said it's an LTTC burger, most people would not know what you meant".</p>	Comment noted.
Campaigner on E.coli O157	<p>"Less Than Thoroughly Cooked (LTTC) should be replaced with "NOT THOROUGHLY COOKED" and any use of acronyms NOT permitted as acronyms are confusing and I believe lazy. What does rare mean? Medium rare? Very rare? etc. and what colour does pink suggest? Light pink? Dark pink?</p> <p>You might wish to consider that previous research carried out for the FSA indicated colour is not an adequate indicator that food is cooked thoroughly.</p>	Comment noted.

Other comments

Respondent	Comment	Response
Dunbia	<p>Recent research by FSS shows that over 20% of Scottish consumers will eat burgers or sausages if the meat is pink or has pink juices after cooking.</p> <p>This is a situation we suspect would be similar throughout the UK. This is of huge concern as it suggests that many consumers are not aware of the risks associated with this practice and are putting themselves and their families at risk.</p>	Comment noted. This comment is outside of the scope of the consultation but may be used to inform other areas of work.
Alitus - Food Safety and Food Law Consultancy	In general terms, it is a dangerous tactic to create the perception that it is OK to eat pink burgers. Even though techniques like sous vide will produce a safe product it is unlikely that the average consumer will understand how this was made safe so could try to mimic when preparing burgers themselves. Of the methods outlined, only the sous vide method would seem to offer the required level of control.	Comment noted.
Alitus - Food Safety and Food Law Consultancy	Sear and shave blurs the lines between raw and cooked and the level of handling involved may lead to a greater risk of cross contamination. If burgers produced using this method were given a limited shelf life post mince e.g. 24 hours then then this would reduce risks further but I'm still not convinced.	Consideration will be given to advising the use of shorter shelf-lives. However, time is only one intervention and cannot be seen in isolation, the holding temperature will also have an impact on risks.
Alitus - Food Safety and	Cannot see the logic of the controlled source method. The measures and monitoring outlined does not offer a consistent control required under HACCP principles.	Comment is outside of the scope of this consultation.

Respondent	Comment	Response
Food Law Consultancy		
Alitus - Food Safety and Food Law Consultancy	<p>Communication is key should the above guidance be published. Recommend that it goes further to ensure that consumer information informs how the burger was made safe to better educate the consumer and reduce the risk of undercooked burgers being produced at home.</p>	<p>Comment noted. We carried out extensive consumer research to decide on the best consumer message. Whilst more detail on the method of producing the LTTC beef burgers would educate the consumer, this must be balanced with keeping the message short enough to be easily read at the point of sale. The information on cooking burgers at home on our website aims to educate consumers on the risks involved.</p>
Alitus - Food Safety and Food Law Consultancy	<p>The average consumer (and some caterers) will be confused by the provision of LTTC burgers and this could lead to food poisoning. Advice should be not to eat pink burgers.</p>	<p>Comment noted.</p>
Environmental Health Officer	<p>Within the UK there is an overarching principle that only safe food shall be placed on the market.</p> <p>To not thoroughly cook a burger or raw meat therefore breaches this requirement.</p> <p>A consumer cannot agree to foreseeable harm - this could be construed as assault.</p>	<p>Comments noted.</p>

Respondent	Comment	Response
	<p>Whilst I understand the micro criteria, due to the very low numbers needed for infection and illness I am not too sure how food safety can be guaranteed by the various methods employed.</p> <p>Please let's scrap this idea of pink burgers.</p> <p>As EHOs are under increasing pressure, this will add to the number of E. coli investigations.</p> <p>I'm not too sure how a child could consent to a pink burger?</p>	
Campden BRI	<p>Additional guidance is clearly required and will help burger producers, food service providers and the consumer by lowering the risks of food poisoning issues arising from such products. It is pleasing that the FSA has recognized this and is helping all stakeholders by provision of guidance.</p>	Comment noted.
Campden BRI	<p>It must be stated throughout the document that the 70C/2min cook is a centre temperature requirement for thorough cooking of burgers. A simple mention of the time/temperature could be mistaken for a surface cook temperature, or the temperature on or in the cooking device.</p>	We will review the text and make appropriate amendments to provide more clarity.
Campden BRI	<p>70C/2 min - Somewhere in the document a table of equivalent times and temperatures should be given. If a table is included it must be decided which equivalents are used (see ACMSF Raw and Rare report for details) as data for E. coli O157 equivalent times and</p>	We have not included a table of equivalent times and temperatures as they are widely available elsewhere, for example in Safer Food Better Business .

Respondent	Comment	Response
	temperatures varies from that for other pathogens due to a different z value (as noted in the ACMSF Safe cooking of Burgers report: z Listeria/Salmonella given as 7.5C°; z for E.coli O157 given as 6.0C°)	
Campden BRI	It is stated that a process of 70°C for 2 min or equivalent gives a 6-log reduction of “bacteria” (i.e. this could be taken to include all bacteria). This is incorrect. It would be better stated that the process would achieve a 6-log reduction of vegetative pathogens that may be present in meat products that are considered to be a risk to human health.	We will review the text and make appropriate amendments to provide further clarity.
Campden BRI	Introduction 5 th paragraph: this is confusing. Comments about LTTC and fully cooked should not be mixed in the same paragraph. Better to move the words on pink fully cooked burgers to para 4. It is a good reason why meat colour should not be used as a sole indication of safe cooking, and it may be worth mentioning this.	We will review the text and make appropriate amendments to provide further clarity.
Campden BRI	Introduction paragraph 7: “which are considered a greater risk” should be specific as to the type of risk “which are considered a greater food poisoning risk” is better.	We will review the text and make appropriate amendments to provide further clarity.
Campden BRI	Introduction paragraph 8: again, needs to be more specific about the type of risk “controlled the microbiological risks to acceptable levels”	We will review the text and make appropriate amendments to provide further clarity.

Respondent	Comment	Response
Campden BRI	Introduction paragraph 10: spelling: sear & save should be sear and shave	We will amend the spelling.
Campden BRI	The document should not try to categorise STEC as a greater concern than Salmonella. Both can result in serious cases of food poisoning from relatively low numbers of organisms consumed. To intimate that STEC are “worse” than Salmonella is not what this document should be doing. Both are potent pathogens that can cause severe disease and death.	We will review the text and make appropriate amendments to provide further clarity.
Campden BRI	Pre-requisites should specify temperature control to be both for chill storage, and cooking. Additionally, another prerequisite should be conditions/equipment that allow adequate separation of raw from ready to eat (or indeed from controlled source beef).	We will aim to provide further clarification and consider amending the guidance.
Campden BRI	“Validation that method of cooking results in 4 log reduction of bacteria”—this should specify that the reduction is required at the centre of the burger (i.e., not just surface). Also, this statement and any associated text must specify which bacteria must it be validated for. Is this for general natural microflora of the meat, or for the previously mentioned specific pathogens (Salmonella and STEC)- FSA guidance must be clear on which hazard(s) have to be reduced by 4 logs.	We will review the text and make appropriate amendments to provide further clarity.
Campden BRI	Sear and Shave- general comment: the time and temperature used at the searing stage must be sufficient to “cook” the surface of the	Comment noted. We have advised searing the surface of the meat as this would be where the contamination

Respondent	Comment	Response
	meat. Some guidance would be useful to specify how this can be achieved (times/temperatures) and to what depth the tissue is required to be cooked to assure safety, considering uneven meat surfaces and cuts/nicks in the muscle tissue surface.	is, the inner areas of the meat being sterile. We have also advised that the surface of the meat must be smooth and the meat must not be pierced.
Campden BRI	Sear and shave talks of other added ingredients being “suitable”. This needs to be very specific. What does suitable mean? Perhaps a wording should be “of a microbiological quality that would mean that they contained no pathogenic microorganisms and were ready to eat”—or equivalent words. This statement cannot be left as is, without stating what FSA consider “suitable” means.	We will review the text and make appropriate amendments to provide further clarity.
Campden BRI	Sear and shave - assume this should be a 6 log reduction of vegetative pathogens. Also I have not seen data to confirm this, I assume this data is available if FSA were questioned?	Comment noted. The ACMSF VTEC (Vero toxin-producing E-Coli) report presents time temperature combinations for a 6-log reduction of foodborne pathogens.
Campden BRI	Microbiological sampling requirements for businesses that mince meat - the word “sampling” is used extensively and incorrectly in this section. Sampling is the procedure of taking a sample, and nothing more. The word is defined in CEN/ISO TS 17728:2015 as “a procedure used to draw and constitute a sample”. The document should refer to sampling and testing, or perhaps simply to testing. Additionally the document must specify what tests are needed (e.g. is a total bacterial count acceptable?, or does it require testing for specific hazards	We will review the text and make appropriate amendments to provide further clarity.

Respondent	Comment	Response
	such as Salmonella, STEC and potentially other 3/3 pathogens). For the guidance to be made more useful detail must be added or it will simply lead to confusion amongst users.	
Campden BRI	Cooking: 4 log reduction must specify centre temperature.	We do not have time / temperature combinations for 4 log reductions for the many different production systems and ingredients businesses may use, therefore the business needs to do their own validation to ensure it leads to a 4-log reduction.
Campden BRI	Throughout the cooking sections several key worst-case situations are noted e.g., initial burger temperature, number of burgers cooked at the same time, cold spots on grills, grill type, burger thickness etc. It would be useful to bring all of this together and note that in any validation, the validation work must be done using total “worst case conditions”, this will then assure safety from the organisms being used in the validation.	We will review the text and make appropriate amendments to provide further clarity.
Campden BRI	Challenge testing: must specify what organisms should form the challenge. It is no help to advise a challenge test without specifying organisms. Is this Salmonella or STEC, as it is assumed these are the hazards to be targeted? Any guidance on challenge testing must also make clear the great dangers of using genuine human pathogens in food processing environments. The advice to use ISO (International Organization for Standardization) 17025 laboratories will only cover the laboratory expertise in testing, not the use of	Identification of STEC and Salmonella are the major pathogens of concern. We will review the text and make appropriate amendments to provide more clarity.

Respondent	Comment	Response
	<p>inoculated food products in processing situations. Challenge testing can be done using pathogens in the correct containment level laboratory using actual processing equipment to be used by the premise; or alternatively in a food processing area using a qualified non-pathogenic surrogate organism with similar thermal resistance properties to the pathogen under consideration. Further clear guidance is needed.</p>	
Campden BRI	<p>“if methods are similar”, should be “if products and cooking methods” are similar.</p>	<p>We will review the text and make appropriate amendments to provide further clarity.</p>
Campden BRI	<p>Modelling: this section needs urgent rethinking. Modelling makes no reference to burger composition, physical sizes etc. If retained it should give more detail of the issues that must be considered if modelling is used, and also give guidance as to which models are considered appropriate. It is assumed that any model used for this purpose must be validated and verified as appropriate for comminuted meat products.</p>	<p>We will review the text and make appropriate amendments to provide further clarity.</p>
Campden BRI	<p>Glossary: Add in definitions of “sampling” and “testing”. Thorough cooking must mention “centre temperature.” Whole muscle cuts—mention should be made that for safety these should not have been pierced or tenderized or undergone any process or procedure which could allow surface microbial contaminants to enter the inner parts of the muscle tissue, where a surface cook would not inactivate them.</p>	<p>We will review the text and make appropriate amendments to provide further clarity.</p>

Respondent	Comment	Response
Dunbia	<p>The practice of preparing and serving less than thoroughly cooked burgers produced using the source control method carries an unacceptable level of risk which puts consumers, the beef industry and the reputation of the FSA at risk.</p> <p>As a business we will not knowingly supply our products to businesses we know to be using them to prepare products that will be less than thoroughly cooked.</p> <p>All of our products are labelled with an advisory statement that raw meat must be cooked thoroughly prior to consumption. We do this to further minimise the risk that our products may be used in this manner.</p> <p>Although we are not knowingly directly involved in this supply chain, we feel that the damage a significant food safety incident regarding less than thoroughly cooked burgers would do to the beef industry is of such a scale that our input into this consultation is essential.</p> <p>We have answered the specific questions you have raised but we urge you to reconsider your endorsement of this unsafe practice which puts consumers and businesses at risk.</p>	Comment falls outside of the scope of this consultation but has been noted.
Institute of Food Science & Technology	Page 4: "When meat is minced to produce burgers, harmful bacteria from the surface of the raw meat may be spread throughout the	We will provide further clarity on this issue in the guidance.

Respondent	Comment	Response
	<p>burger. Unless the burger is cooked right through, bacteria can remain on the inside. “</p> <p>We would recommend to change this slightly to say “these bacteria may survive on the inside”. The process is pasteurisation not sterilisation, so some bacteria will in any case remain, just not the vegetative pathogens.</p>	
Institute of Food Science & Technology	Recommend including information on time/temperature equivalents for 70C for 2 minutes leading to the six-log reduction in bacteria as we understand that there are different time/temperature combinations in the literature.	Information on equivalent time/temperature combinations is widely available elsewhere and we will consider providing a link in the guidance.
Swindon Borough Council	We think there should be more information / emphasis that the consistency / thickness of the burger as it is very important rather than just weight. We have experienced some businesses that overlook this.	We will provide further clarity in the guidance.
Swindon Borough Council	We think offering some sort of HACCP guidance would be useful for businesses.	The guidance includes an overview of HACCP and signposts businesses to further detailed information on the FSA website. We have not included a generic HACCP for cooking and serving LTTC beef burgers as each business needs to carefully consider the procedures they put in place and producing an individual food safety management system will help them do this.

Respondent	Comment	Response
Campaigner on E.coli O157	I certainly do not agree with the sale of less than thoroughly cooked beef burgers due to the risks of Salmonella and E.coli O157.	Comment noted.
Campaigner on E.coli O157	<p>'The consumer message you have suggested is as follows:</p> <p>Burgers cooked rare and medium rare carry a higher risk of food poisoning. Unlike a steak, a burger needs to be cooked through to reduce that risk.</p> <p>The Food Standards Agency recommends that children, pregnant women and anyone with a weaker immune system have their burgers well done. Please ask us for more information.'</p> <p>I would suggest the first paragraph of the message should read "Burgers that are not thoroughly cooked carry a higher risk of food poisoning such as Salmonella or E.coli. Unlike a steak, a burger needs to be cooked thoroughly to reduce that risk."</p> <p>I believe this wording, with a slight change, would meet the criteria from the FSA Rare Burgers Risk Communication Messaging report of July 2016 which showed on page 26 of this report that being easy to understand and being the most informative were the two important issues to those surveyed.</p> <p>Food poisoning is very abstract wording, but when you mention bacterium such as Salmonella or E.coli consumers can relate more</p>	Comment noted. We carried out extensive consumer research to decide on the message which would best be understood by consumers. The research on consumer messaging can be found on our website. I can confirm that naming the food poisoning bacteria associated with raw beef was considered as part of the research.

Respondent	Comment	Response
	<p>to the type of illness they may suffer from and it also allows the consumer to make a more informed choice due to the more factual nature of what foodborne illness could be involved</p> <p>I believe the second paragraph of the Consumer message should remain unchanged.</p>	
<p>Campaigner on E.coli O157</p>	<p>The draft guidance states:</p> <p>“Although there is no specific legal requirement for the labelling of LTTC burgers, legislation says that, when considering whether food is unsafe (or safe), food businesses should have regard to information provided to consumers, and in particular to those consumers in vulnerable groups.”</p> <p>This, I believe, is a general requirement in relation to all food information and therefore is a legal requirement as in European Union (EU) retained law of Regulation 178/2002 as article 14 is about Food Safety requirements</p> <p>Food safety requirements</p> <p>1.Food shall not be placed on the market if it is unsafe.</p> <p>2.Food shall be deemed to be unsafe if it is considered to be:</p> <p>(a)injurious to health;</p>	<p>Comment noted.</p>

Respondent	Comment	Response
	<p>(b)unfit for human consumption.</p> <p>3.In determining whether any food is unsafe, regard shall be had:</p> <p>(a)to the normal conditions of use of the food by the consumer and at each stage of production, processing and distribution, and</p> <p>(b)to the information provided to the consumer, including information on the label, or other information generally available to the consumer concerning the avoidance of specific adverse health effects from a particular food or category of foods.</p> <p>As the current law stands, I believe it would require a court ruling or judgement to legally define what was the original intention of this section of the law and not just the opinion of the Food Standards Agency (FSA) or myself.</p> <p>Furthermore, at the time of the introduction of this legislation there were no restaurants generally selling “Less Than Thoroughly Cooked burgers” in the UK as they are today and most definitely not the number of those which has been encourage by this Food Standards Agency (FSA) policy since around the mid 2010’s.</p> <p>Whilst people are free to eat what they wish, they should have sufficient information to make an informed choice which, I believe, is not always the case. Also, we need to remember that in the Covid -</p>	

Respondent	Comment	Response
	<p>19 pandemic some rules were there to protect others and not solely to protect ourselves due to the greater good of the majority in relation to public health.</p>	
<p>Campaigner on E.coli O157</p>	<p>From a cursory point of view looking at Burger websites that sell “Less Than Thoroughly Cooked” burgers it is quite clear that some restaurants do not offer a consumer message as part of their menu.</p> <p>The consumer message at the point of sale from a website point of view (which you could order from) is at best patchy across restaurants that sell LTTC burgers and therefore the Food Standards Agency (FSA) should consider how they are going to improve this given it is in their suggested draft guidance and was recommended by them since June 2018 and again in this draft guidance in 2022.</p> <p>It was also noted that the vast majority of websites did not indicate their Food Hygiene Rating Score even when you could view individual site addresses for a chain of restaurants selling LTTC burgers.</p> <p>I am aware that the Food Hygiene Rating Scheme is not a legal requirement in England, but the above including the lack of consumer message in most restaurants indicates little desire to give the consumer an informed choice.</p>	<p>Comments noted.</p> <p>We will consider adding recommendations in relation to consumer messaging for online sales.</p>

Respondent	Comment	Response
	<p>On page 3 of the Food Standards Agency (FSA) Draft guidance it states “A consumer message helps consumers understand the potential risks of eating LTTC beef burgers. The consumer message also aims to discourage consumers from eating LTTC beef burgers at home.”</p> <p>I cannot see how your consumer message aims to discourage consumers from eating “Less Than Thoroughly Cooked burgers” at home, when you are saying this practice is acceptable in restaurant settings for those apart from children, pregnant women and anyone with a weaker immune system.</p> <p>This in my opinion is therefore a double standard and one that is potentially confusing to the public.</p> <p>Given also, that energy prices are reported to have risen by approximately 54% (based on the energy price cap) and food prices are increasing, your position on this issue may well encourage people to eat burgers at home that are “Less Than Thoroughly Cooked”, either because they cannot afford to cook them thoroughly, cannot afford to eat them at restaurants due to rising costs or because they feel a standard being set by the FSA that restaurants are allowed to do this, but not people who are struggling to live.</p>	

Respondent	Comment	Response
<p>Campaigner on E.coli O157</p>	<p>I believe another point of confusion in the draft consultation wording, is at the top of page 4 which states:</p> <p>“Following this guidance will help businesses comply with the law. Businesses are not required by law to follow best practice guidance. While some aspects of the guidance are best practice, if they form part of the food safety management system (FSMS) it is essential they are followed accordingly”.:</p> <p>The following wording or similar might be easier to understand as I believe your paragraph, given the greatest respect, is very unclear and confusing.</p> <p>“Best practice is considered in most industries usually sufficient to comply with the law and is not a legal requirement, much the same way as guidance is not a legal requirement, but a helpful tool to aid compliance with the law.</p> <p>As a Food Safety Management system (FSMS) is based on Hazard Analysis Critical Control Point (HACCP) principles it is a legal requirement in the retained European Union (EU) law.</p> <p>Whilst it may be easier for larger food business operators to construct and implement a Food Safety Management system (FSMS) the law requires to be complied with whatever the size of the food business.”</p>	<p>We will provide further clarity in the guidance.</p>

Respondent	Comment	Response
<p>Campaigner on E.coli O157</p>	<p>As the Food Standards Agency (FSA) Board have suggested in their meeting of 9th March 2022 they are more willing to accept risk, they should then take some responsibility for the sale of “Less Than Thoroughly Cooked burgers” and the whole of the validation process rather than leave this to home or Individual local authorities or Individual Environmental Health Officers or Environmental Health Practitioners, as it is the Food Standards Agency’s (FSA) policy.</p> <p>Yes, it is the legal responsibility of the food business operator to ensure their food is safe and not injurious to health, but if the Food Standards Agency (FSA) decide on a particularly policy they need to share some collective responsibility for a consistent approach in relation to England Wales & Northern Ireland in relation to local authority inspections etc and collective responsibility when/if things go wrong.</p> <p>This would therefore enable the Food Standards Agency (FSA) to effectively monitor their policy decisions in a more holistic approach rather than possibly blaming others when/if things go wrong.</p> <p>Also, it would help local authorities who were reported in quarter 3 at the latest Food Standards Agency (FSA) Board meeting mentioned on 9th March that only 71% of local authorities planned food inspections were completed against the local authority plans.</p>	<p>This comment is outside of the scope of this consultation but has been noted.</p>

Respondent	Comment	Response
	<p>As we have left the European Union (EU) it is now possible to make our own laws and therefore allow testing for Shiga toxin-producing Escherichia coli (STEC) in raw meat and other Ready to Eat (RTE) foods, particularly in meat intended for use in Less Than Thoroughly Cooked (LTTC) burgers.</p> <p>There is currently no legal requirement to test raw meat for Shiga toxin-producing Escherichia coli (STEC) that is to be used for burgers however there is a legal requirement to test raw meat for Salmonella in the European Union (EU) retained law. This again is applying a double standard, which you are allowing unless you change this.</p>	
<p>Campaigner on E.coli O157</p>	<p>When you look at the Source Control for Less Than Thoroughly Cooked (LTTC) burgers method it is very disappointing but not surprising to see that two companies on your list for approved less than thoroughly cooked meat establishments in the UK each had one major non compliance at their last audit, that had to be rectified at the time of the audit. A major non compliance is one which compromises Public Health, animal health and welfare, or the production and handling of unsafe or unsuitable food according to the Food Standards Agency (FSA) definition.</p>	<p>Comment noted.</p> <p>The FSA audit regime is there to detect deficiencies, should they occur. When we identify deficiencies we take appropriate action to ensure preventative action is implemented and hygiene standards met.</p>

Respondent	Comment	Response
<p>Campaigner on E.coli O157</p>	<p>In relation Product specification the consultation states not sourcing meat from geographical areas with high levels of Shiga toxin-producing Escherichia coli (STEC) in cattle.</p> <p>Given this would need to be real time information and there is no indication by yourselves that there is. Previous research has shown that 44% of all cattle herds have at least one animal carrying the bacterium E. coli O157, I am not sure how this can be of real practical help apart from the above mentioned, although it sounds a great idea.</p> <p>Yes, I do appreciate that per head of population Scotland has generally the highest number of human cases of the bacterium E.coli O157. However, do the Food Standards Scotland (FSS) allow Less Than Thoroughly Cooked (LTTC) burgers to be sold in restaurants? If not, why not as they too use Science also as part for their decision-making process.</p> <p>On the 31st July 2018, The Food Safety Authority of Ireland (FSAI) <u>warned that food safety should not be compromised to meet consumer trends such as the demand for undercooked minced beef burgers.</u></p> <p>In addition, on the 24th July 2020 The Food Safety Authority of Ireland (FSAI) released a fact sheet advising caterers of their legal obligation to sell or serve food that is safe to eat when cooking and</p>	<p>Comments noted. We will re-consider our advice on not sourcing beef from areas where there are high levels of STEC in cattle.</p>

Respondent	Comment	Response
	<p>serving minced meat burgers. This means that the burgers must be cooked fully to guarantee any harmful microorganisms present, e.g. bacteria, are destroyed. This factsheet also indicates that colour is not a reliable indicator of through cooking</p> <p>The Food Safety Authority of Ireland (FSAI) also use Science as part of their decision-making process.</p> <p>I also, understand the idea of animals that are super shedders of the bacterium could pose a greater risk but without testing on farms it is impossible to identify which animals would be classed as this.</p> <p>It is a shame that the Food Standards Agency (FSA) who claim to be evidence and science based do not always use these when making their policies and decisions. However, having a relatively small budget the Agency is at a disadvantage both financially and in terms of political muscle from the food industry.</p> <p>Having said that the Food Standards Agency (FSA) should remember that it was set up in 2000 to protect the consumer as previously, I believe, the food industry had failed to ensure it was capable of regulating itself.</p> <p>The Food Standards Agency strategy for 2022-2027 published in March this year was very disappointing from a foodborne illness point of view as, I believe, it shows very little ambition to reduce</p>	

Respondent	Comment	Response
	<p>such. The Agency seem to accept a certain level of foodborne illness as acceptable, which clearly it is not, particularly when you consider some of the consequences such as long-term health problems, organ failure, brain damage and death.</p> <p>I hope that The Food Standards Agency's pursuit of the Less Than Thoroughly Cooked (LTTC) burgers policy does not cause too many illnesses due to the unnecessary risk I believe you are taking.</p>	
Wales Food Safety Expert Panel	All minced meat should be thoroughly cooked before consumption for safety reasons. We also reiterate the Directors of Public Protection Wales' Position Statement on Less Than Thoroughly Cooked Burgers and Consumer Messaging at the Point of Ordering dated June 2018 which is attached.	Comment noted.
Wales Food Safety Expert Panel	Consumer messaging – in addition to the comments in the DPPW (Directors of Public Protection Wales) position statement, while there is now best practice advice included on visibility and legibility in the guidance, advice on font size should also be given.	We will consider providing advice on font size within the guidance.
Wales Food Safety Expert Panel	<p>Responsibility:</p> <ul style="list-style-type: none"> a. Are Environmental Health Officers (EHOs) responsible for checking business compliance with the whole of the guidance? This can be large amount of work if they choose to go down the source control method. b. Do EHO's need to check the suitability of the challenge testing and scientific data that accompanies it? 	Authorised officers must use their professional judgement to determine what activities, at a food business, are examined during an official control. It is their duty to assure themselves that the relevant requirements of food law are being complied with and determine which part of guidance is relevant to the business. Where appropriate, the Competent Authority

Respondent	Comment	Response
	<p>c. Do EHO's check suitability of the business sampling regime i.e.</p> <ul style="list-style-type: none"> i. Samples taken from mincemeat/burger production ii. Samples taken from catering establishments post cooking. 	<p>must ensure they have access to adequate appropriate expertise to enable competent inspection of any specialised processes.</p> <p>The authorised officer must be satisfied the sampling and testing in place is suitable and provides assurance that food is produced in a safe manner.</p> <p>In determining the level of sampling and testing which is appropriate, the food authority must have regard to HACCP principles and relevant advice.</p> <p>Where there is a Primary Authority inspection plan in place authorised officers must follow it and provide feedback to the primary authority if required.</p>
Wales Food Safety Expert Panel	<p>2. Challenge testing: How many tests should be conducted on a burger, 10 or 20? If one of those tests comes back with a less than 4 log reduction. Should the test be re-done? Or is 9 out of 10 tests that were satisfactory, okay?</p>	<p>It is the responsibility of the business to determine the number of tests required. Businesses must have a food safety management system in place to demonstrate that they have the required controls in place to prepare food in a safe manner.</p> <p>Where challenge testing is carried out, this includes producing their own supporting science/evidence and incorporating this into the food safety management system. The business may wish to seek expert advice from an accredited laboratory.</p>

Respondent	Comment	Response
Wales Food Safety Expert Panel	Should challenge testing include other bacteria such as Salmonella as well as STEC?	Identification of STEC and Salmonella are the major pathogens of concern. It is the responsibility of the business to determine the challenge testing which is appropriate and they may wish to seek expert advice from an accredited laboratory.
Wales Food Safety Expert Panel	<p>3. Observations from onsite inspections at restaurants serving less than thoroughly cooked burgers using source control:</p> <ul style="list-style-type: none"> a. Concerns about the minimal allowance for human error especially when cooking to a set temperature without the use of a timer. If the challenge testing was undertaken with a core time/temperature combination of 63°C for 1 second in order to achieve a 4-log reduction, then the cooking CCP (Critical Control Point) will be 63°C for 1 second. The chef then has to cook the burger to a core temperature of 63°C for 1 second. Not all burgers are probed and there is a reliance on the chefs skill and experience. In a busy kitchen this is impossible and inevitably results in human error. Therefore, if a cooking timer is not being used, each burger needs to be probed. b. Concerns about the accuracy of probe temperature checks, as the on-site reality is that the burger can cook at an uneven rate. There is no way of knowing how far the probe has been inserted (if going in from the side) (a depth gauge) or to know if it has gone in at an angle and is not actually in the centre. Probe validation checks should be done in multiple locations on the burgers and on multiple burgers. 	Comment noted.

Respondent	Comment	Response
	<p>c. The use of surface temperatures probes on hot plates can assist with finding cold spots.</p>	
<p>Wales Food Safety Expert Panel</p>	<p>4. Cold chain - It would be useful if an indication was given of the different temperatures required throughout the chill chain. It may be 3°C at the meat production unit but its possibly 8°C in the catering establishment.</p>	<p>We will provide further clarity in the guidance.</p>
<p>Manchester City Council – Environmental Health Officers</p>	<p>From past experience of enforcement in relation to LTTC it seemed that there was a lack of consistency across the UK in the approach of different local authorities and primary authorities. Where businesses operate across different local authority areas and do not have a Primary authority, a form of co-ordination by one body would be beneficial to ensure consistency in enforcement.</p>	<p>Comment noted.</p>
<p>Norwich City Council</p>	<p>Distributors of burgers intended to be LTTC should be made within the scope of this guidance.</p> <p>Concerns with regard to LTTC burgers is the transport of raw burger patties by third party distributors. Unlike the manufacturer, these transport companies have no duty under the product specific legislation to keep burgers under the required transport temperatures and so the only control possible is the one imposed by the caterer themselves in refusing to except burger patties above acceptable limits.</p> <p>One business probed burger patties on receipt but rather than reject a consignment that was above the target temperature instead</p>	<p>We will provide more details in the guidance on the transport of beef burgers to be less than thoroughly cooked. We will also consider expanding the scope of the guidance to include distributors.</p>

Respondent	Comment	Response
	<p>accepted the delivery and submitted a 'non-conformity' report to the transport company concerned. This is clearly unacceptable.</p> <p>We are pleased this issue has been clarified in the new LTTC guidance which makes it clear that if the product is delivered above the maximum temperature limit that has been set and detailed in the FSMS, the delivery must be rejected.</p> <p>Unfortunately, the guidance is silent on the actual maximum transport temperature: it should not be more than the temperature stipulated in the product specific legislation for mincemeat and meat preparations and to which the manufacturer is bound.</p> <p>We should remain mindful that were the cold chain not to be maintained during transport there is the potential for harmful bacteria to multiply to levels where significant numbers of viable organisms may still be present in a LTTC burger.</p> <p>Given that the product specific legislation is silent on the maximum temperature of burgers when transported by a third party, we feel it is even more important that the FSA guidance be made more robust in this regard.</p> <p>For instance, the infographic on page 8 of the new guidance fails to identify transport as a separate and distinct step in the production of a LTTC burger. This is a missed opportunity as controlling the</p>	

Respondent	Comment	Response
	<p>temperature during transport is a critical control and should be emphasised.</p> <p>Distributors of burgers intended to be LTTC should be made within the scope of this guidance.</p>	
<p>North Norfolk District Council / Breckland Council / Great Yarmouth Borough Council / Broadland District Council / South Norfolk Council / Norwich City Council / Borough Council of Kings Lynn</p>	<p>There is an over reliance on controls at the source as it is not possible to guarantee these measures alone will be sufficient to reduce the bacteria load to sufficient levels. Outer packaging can be a route of transmission and this does not appear in the controls at supplier level section.</p>	<p>We will consider adding information regarding the risk of contamination associated with outer packaging.</p>

Respondent	Comment	Response
and West Norfolk		
North Norfolk District Council / Breckland Council / Great Yarmouth Borough Council / Broadland District Council / South Norfolk Council / Norwich City Council / Borough Council of Kings Lynn and West Norfolk	There is information in the guidance on warning notices to customers, however, it was felt that this should be mandatory. There is mention in the guidance about 178/2002 and highlighting sensitivities, however, mandatory signage would reduce uncertainty.	Comment noted.
Swindon Borough Council	Why is there no FSA guidance on sous vide still? Several Councils have resorted to making their own. There should be more information about the complexities of sous vide in the overview section to make it clearer. It almost appears as the simpler option.	We are aware of existing independent guidance on sous vide, as well as some local authorities providing basic information on the process. We will consider

Respondent	Comment	Response
		further emphasising the complexities of sous vide in the guidance.
Norwich City Council – Environmental Health Officer	<p>One of my main concerns with regard to LTTC burgers is the transport of raw burger patties by third party distributors. Unlike the manufacturer, these transport companies have no duty under the product specific legislation to keep burgers under the required transport temperatures and so the only control possible is the one imposed by the caterer themselves in refusing to except burger patties above acceptable limits.</p> <p>One burger chain visited by Norwich City Council, probed burger patties on receipt but rather than reject a consignment that was above the target temperature instead accepted the delivery and submitted a ‘non-conformity’ report to the transport company concerned. This is clearly unacceptable.</p> <p>We are pleased this issue has been clarified in the new LTTC guidance which makes it clear that if the product is delivered above the maximum temperature limit that has been set and detailed in the FSMS, the delivery must be rejected.</p> <p>Unfortunately, the guidance is silent on the actual maximum transport temperature: which in our opinion should not be more than the temperature stipulated in the product specific legislation for</p>	<p>Comments noted.</p> <p>We aim to provide more details in the guidance on the transport of beef and beef burgers to be less than thoroughly cooked. We will also consider expanding the scope of the guidance to include distributors.</p>

Respondent	Comment	Response
	<p>mincemeat and meat preparations and to which the manufacturer is bound.</p> <p>We should remain mindful that were the cold chain not to be maintained during transport there is the potential for harmful bacteria to multiply to levels where significant numbers of viable organisms may still be present in a LTTC burger.</p> <p>Given that the product specific legislation is silent on the maximum temperature of burgers when transported by a third party, we feel it is even more important that the FSA guidance be made more robust in this regard.</p> <p>For instance, the infographic on page 8 of the new guidance fails to identify transport as a separate and distinct step in the production of a LTTC burger. This is a missed opportunity as controlling the temperature during transport is a critical control and should be emphasised.</p> <p>Distributors of burgers intended to be LTTC should be made within the scope of this guidance.</p>	
BUPA	<p>I am not in favour of serving burgers which have not been thoroughly cooked and I would urge the FSA to review the guidance. The FSA should take a stance against caterers who believe consumers want LTTC when in fact the driver is more than likely the caterer rather than the consumer. The risk and consequences to consumers is</p>	<p>Comment is outside the scope of the guidance but has been noted.</p>

Respondent	Comment	Response
	serious and probably not understood. The FSA should look to tighten the rules and not permit LTTC.	
Institute of Food Science & Technology	The guidance for the source control method does not sufficiently reflect the difficulty for an FBO (Food Business Operator) risk-assessing and controlling the multiple steps required throughout the supply chain to ensure a safe end product.	Comment noted. The guidance aims to balance providing enough information for readers to understand the risks associated with LTTC beef burgers with keeping the guidance easy to understand.
Institute of Food Science & Technology	<p>Pg 5, the guidance states: Sous-vide method - burgers are vacuum packed and cooked in a water bath for a longer period and at a lower temperature than conventional cooking. A time/ temperature combination equivalent to 70°C for two minutes is achieved. This can result in beef burgers remaining pink in the middle while achieving a six-log reduction in bacteria.</p> <p>Comments: While it is covered in more detail further into the guidance, it would be useful to specify in the summary above that the sous-vide method should be validated to ensure that the time/temperature combination will achieve a process equivalent to 70°C for 2 minutes throughout the core of the burger.</p>	We will provide further clarity in the guidance.

Respondent	Comment	Response
<p>Institute of Food Science & Technology</p>	<p>Pg 6, the guidance states: Sear and shave - the outer surfaces of a piece of meat are cooked to a high enough temperature to achieve at least a six-log reduction in bacteria. The outer surfaces are then shaved off and the remaining meat is used to make burgers which are lightly cooked. This method of cooking can achieve a six-log reduction in bacteria while the beef burgers remain pink in the middle.</p> <p>Comments:</p> <p>The guidance should make it clear that the piece of meat to be used has to be entire and whole, not mechanically tenderised or reconstituted in anyway</p> <p>It would be clearer to state ... and the remaining meat can be minced and used to make burgers...</p>	<p>We will provide further clarity in the guidance.</p>
<p>Institute of Food Science & Technology</p>	<p>Pg 6, the guidance states: Source control method – beef, minced beef or beef burgers are bought from suppliers with strict controls in place, which research has shown can reduce bacteria by two-logs. The beef burgers are then lightly cooked to achieve at least a four-log reduction in bacteria. The infographic (Figure 1) gives an overview of the controls to be taken at each stage of the food chain when using this method. You can also download the Source control method infographic as a PDF.</p>	<p>Comment noted. If a business decides to serve less than thoroughly cooked beef burgers it is their responsibility to ensure they consider the risks involved and put adequate controls in place. Businesses may decide that product specification is a critical control point and carry out checks to ensure this is met.</p>

Respondent	Comment	Response
	<p>Comments: The guidance is clear and the requirement to use an approved supplier and a list is given. However, although it might be possible in a fully integrated supply chain from farm to table, this methodology is inherently more variable with reliance on multiple prerequisites across the supply chain, and without critical control points that are manageable by the end supplier / caterer to ensure safety of consumers. To this end we suggest that this methodology is technically possible but impractical for the food business operator to confidently apply without this fully integrated supply chain from farm to table, especially with the low infectious dose for O157 and other strains.</p>	

Actions to be implemented

Revise the guidance document to ensure clear and consistent terminology throughout and ensure further clarity is provided particularly in the following areas of the document :

- provide specific information on transportation and temperature requirements
- review the Glossary section and consider adding further key words to this section
- review and revise the intended audience section
- provide page numbers to the PDF version of the guidance
- provide further details on challenge testing and modelling
- provide further advice on the consumer message relating to font size, online sales and children's menus

- provide a link to time temperature combinations equivalent to 70°C for 2 minutes
- provide further information on approval of establishments that supply beef / beef burgers to be less than thoroughly cooked
- provide information on the risk of contamination from outer packaging
- provide further information on the shelf life of products to be less than thoroughly cooked