

.....

Alternative Proteins: Consumer Survey

.....

January 2022

Authors: Ayla Ibrahim Jarchlo, Lucy King

<https://doi.org/10.46756/sci.fsa.ncn554>

Contents

Background and Methodology	3
Executive Summary	4
Key Findings	6
Knowledge and awareness of alternative proteins	6
Perceptions of safety	7
Willingness to try alternative proteins	10
Encouraging greater uptake of alternative proteins	17
Appendix A	19
Glossary of terms	19
Appendix B	23
Questionnaire	23

Background and Methodology

This report provides an executive summary of a recent consumer poll conducted on alternative proteins. In December 2021, the FSA commissioned Ipsos MORI to conduct an online survey to understand consumer awareness and perceptions of alternative proteins.

The survey was conducted with 1,930 adults aged 16-75 living in England, Wales and Northern Ireland. Data was collected between 9th – 11th December 2021 via Ipsos MORI's online omnibus. The data was weighted to be representative of the adult population aged 16 – 75 living in England, Wales and Northern Ireland on key demographics: age, gender, region, working status and social grade.

This summary report comments on key findings from the survey, with some notable differences in sub-groups of interest. Further information, including more detailed demographic analysis is available in data tables which are available on request. The questionnaire is included in [Appendix B](#).

Note on interpreting the data

Results should be interpreted with care. All surveys are subject to a range of potential sources of error including sample imbalances which are not easily identified and corrected through weighting. Surveys are also subject to errors in respondents' interpretation of survey questions and response options. The data reported within this report relies on respondents' self-reported behaviours. Errors could occur due to imperfect recollection, or respondents' tendency to overreport behaviours which are perceived as being desirable and underreport undesirable behaviours.

Executive Summary

Respondents were more likely to have heard of plant-based proteins (90%) compared to edible insects (80%) and lab grown meat (78%).

Over three quarters (77%) of respondents perceived plant-based proteins as being safe to eat compared to half (50%) for edible insects and 3 in 10 (30%) for lab grown meat.

Six in ten (60%) respondents were willing to try plant based proteins, compared to around a third (34%) who were willing to try lab grown meat and just over a quarter (26%) who were willing to try edible insects.

Respondents who reported willingness to try any of the alternative proteins tested were shown a list of potential reasons that they were willing to try the protein. The most common reasons for being willing to try plant-based proteins were because they were perceived as safe to eat (44%) and for health reasons (39%), whereas environmental or sustainability reasons were the most common reason for being willing to try lab grown meat (40%) and edible insects (31%).

Respondents were asked how willing or unwilling they would be to try edible insects in different forms. Willingness to try edible insects ground into food for added protein (for example, bread, burgers, falafel balls etc) was highest, with nearly 2 in 5 (37%) willing to try them in this form. Whole edible insects were least favoured, with 3 in 5 (60%) reporting unwillingness to try them in this form.

Respondents who reported unwillingness to try any of the alternative proteins tested were shown a list of potential reasons that they were unwilling to try the protein.

Respondents most commonly reported unwillingness to try lab grown meat (49%) and edible insects (64%) due to finding it off-putting, whereas the biggest barrier to trying plant-based proteins was that respondents liked to eat traditional meats (36%).

Respondents who were unwilling to try any of the alternative proteins tested were asked whether anything (from a prompted list) would encourage them to try it:

- Two in five (42%) reported that nothing could encourage them to try plant-based proteins, but 1 in 5 (21%) could be persuaded to try this if it looked appetising.

- Two in five (42%) reported that nothing could encourage them to try lab grown meat, but over a quarter (27%) could be persuaded if they knew it was safe to eat and 23% if they could trust that it was properly regulated.
- The majority (67%) reported that nothing could make them try edible insects. One in eight (13%) could be persuaded if they knew it was safe to eat and 11% if they looked appetising.

Key Findings

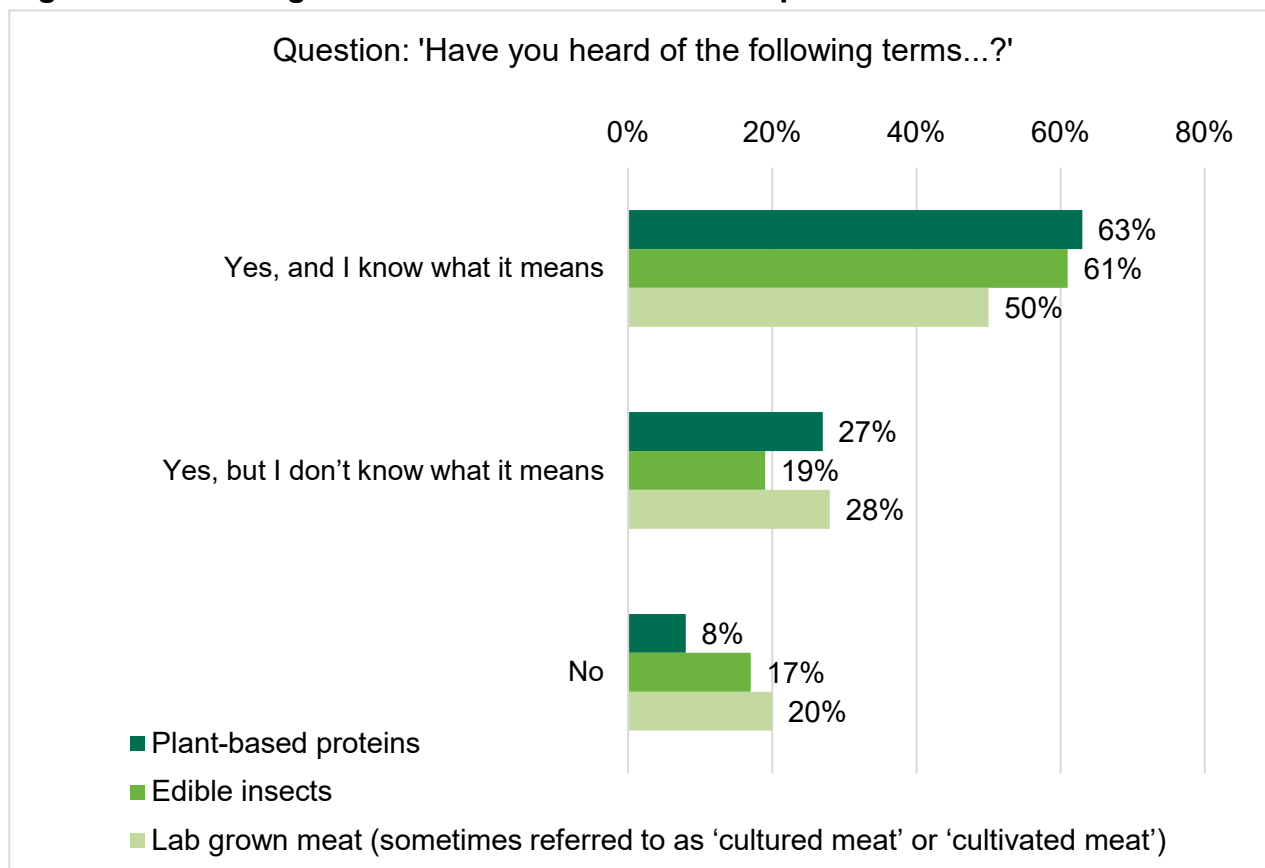
Knowledge and awareness of alternative proteins

Respondents were more likely to have heard of plant-based proteins compared to edible insects and lab grown meat.

Overall, 9 in 10 (90%) respondents had heard of plant-based proteins; over 6 in 10 (63%) reported that they had heard of plant-based proteins and knew what it meant, whilst 27% had heard of the term but didn't know what it meant (Figure 1).

Awareness and knowledge of edible insects and lab grown (or 'cultivated' / 'cultured' meat) was comparatively lower. Overall, four in five (80%) respondents had heard of edible insects; around 6 in 10 (61%) reported awareness and knowledge of the term, whilst 19% had heard of edible insects but didn't know what this meant. Similarly, overall awareness of lab grown meat was 78%, consisting of half (50%) of respondents who reported both awareness and knowledge of the term and a further 28% who had heard of lab grown meat but didn't know what it meant. One in five (20%) had not heard of lab grown meat (Figure 1).

Figure 1: Knowledge and awareness of alternative proteins



Base: 1,930 Online, adults 16-75 in England, Wales and Northern Ireland, 9-11th December 2021. Please note that this chart excludes respondents who selected 'Don't know'.

Perceptions of safety

Respondents were more likely to perceive plant-based proteins as being safe to eat compared to edible insects and lab grown meat.

Most participants (77%) perceived plant-based proteins (for example, soy, hemp seed, quinoa) to be safe to eat overall (i.e. 'very' or 'somewhat' safe), with only 4% reporting they felt plant-based proteins were unsafe to eat (i.e. 'very' or 'somewhat' unsafe) (Figure 2).

Half of respondents (50%) believed that edible insects were safe to eat, whilst 1 in 5 (20%) felt they were unsafe (Figure 2). Respondents who had heard of edible insects were more likely to believe they are safe to eat (57%) compared to those who hadn't heard of the term (22%) (Figure 2).

There were further significant differences amongst the following demographics:

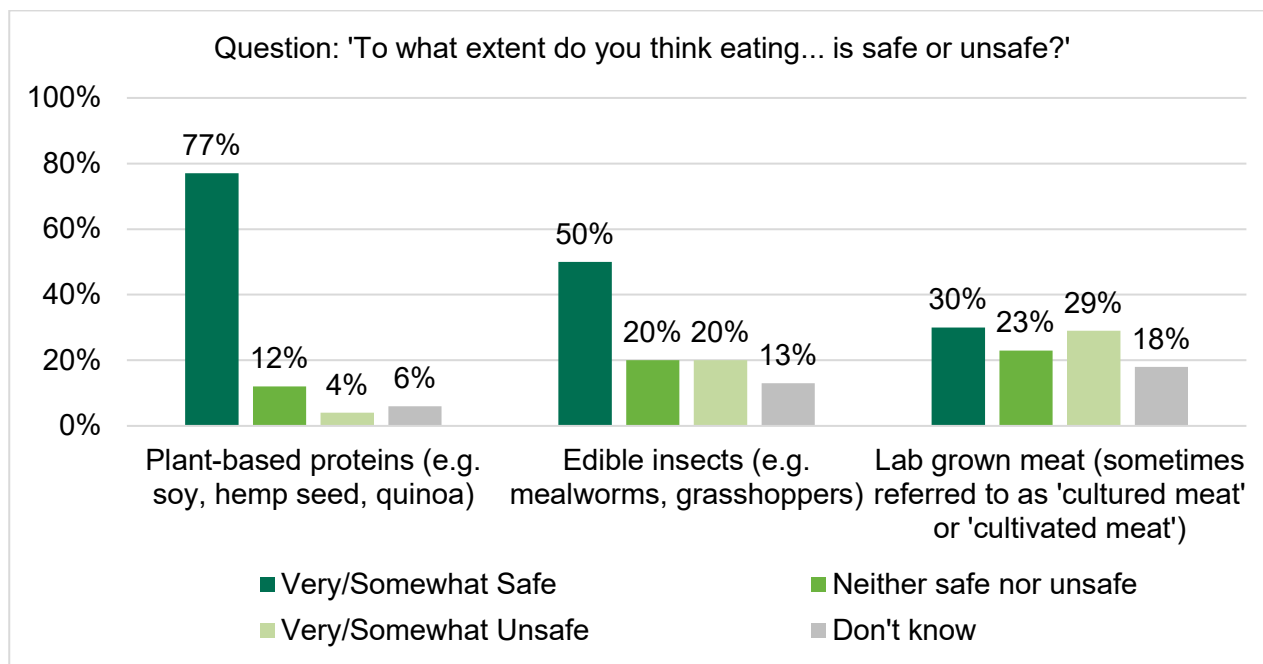
- Men (57%) were more likely than women (42%) to perceive edible insects as safe to eat.
- Respondents aged 16-24 were more likely than all older age groups (for example, 14% of 25-34 year olds) to perceive edible insects as unsafe to eat.
- Participants in a higher socio-economic group (group AB, 55%) were more likely to perceive edible insects as safe to eat compared to those in a lower socio-economic group (group DE, 44%).

Three in ten (30%) respondents perceived lab grown meat as being safe to eat, but a similar proportion (29%) felt it was unsafe. Around 1 in 5 (18%) reported that they didn't know whether lab grown meat was safe to eat (Figure 2). Perceptions of lab grown meat as safe were significantly higher amongst respondents who had heard of it (35%) compared to those who had not heard of it (12%) (Figure 2).

There were further significant differences amongst the following demographics:

- Men (36%) were more likely than women (25%) to perceive lab grown meat as safe to eat.
- Respondents aged 25-34 (38%) were more likely than those aged 45+ (for example, 25% of 55-75 year olds) to perceive lab grown meat as safe to eat.
- Socio-economic groups AB (35%) were more likely compared to DEs (25%) to perceive lab grown meat as safe to eat.

Figure 2: Perceptions of safety across different alternative proteins



Base: 1,930 Online, adults 16-75 in England, Wales and Northern Ireland, 9-11th December 2021

Willingness to try alternative proteins

Respondents were most open to trying plant-based proteins (60%) in their diet. Around a third (34%) were willing to try lab grown meat, with respondents who had heard of the term more than three times as likely to be willing to try it compared to those who hadn't heard of lab grown meat (40% versus 13%) (Figure 3).

Willingness to try edible insects was the lowest across alternative proteins tested, with just over a quarter (26%) willing to try. Again, respondents who had heard of edible insects were more likely to be willing to try edible insects (30%) compared to those who weren't aware (11%) of the term (Figure 3).

Over half (57%) of respondents reported they would be unwilling to try edible insects and more than 2 in 5 (43%) were unwilling to try lab grown meat (Figure 3).

There were significant differences in **willingness to try lab grown meat** amongst the following demographics:

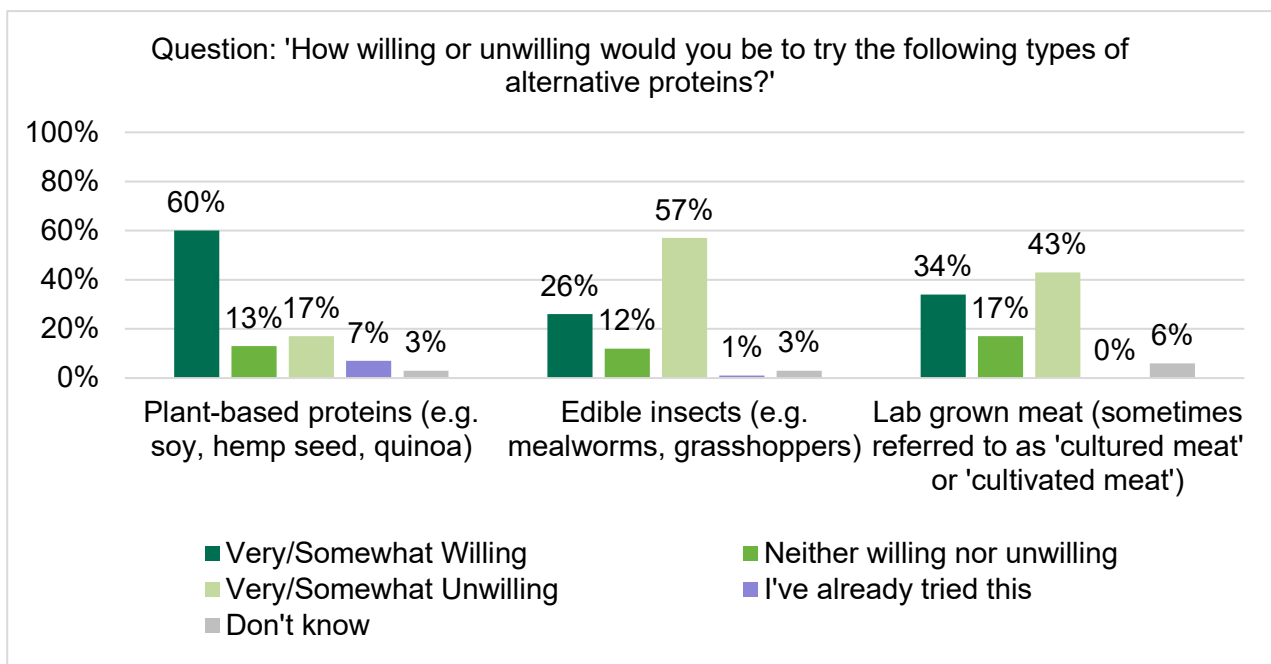
- Men (43%) were more likely than women (26%) to report being willing to try lab grown meat.

- Respondents aged 25-44 (for example, 46% of 25-34 year olds) were more likely than those aged 45-75 (for example, 27% of 55-75 year olds) to report being willing to try lab grown meat.
- Socio-economic groups AB (39%), C1 (34%) and C2 (36%) were more likely compared to DEs (28%) to report being willing to try lab grown meat.

There were significant differences in **willingness to try edible insects** amongst the following demographics:

- Men (34%) were more likely than women (19%) to report willingness to try edible insects.
- Respondents aged 16-34 (for example, 33% of 25-34 year olds) were more likely than those aged 55-75 (22%) to report willingness to try edible insects.
- Socio-economic groups AB (31%) were more likely compared to C1s (24%) and DEs (25%) to report willingness to try edible insects.

Figure 3: Willingness to try alternative proteins



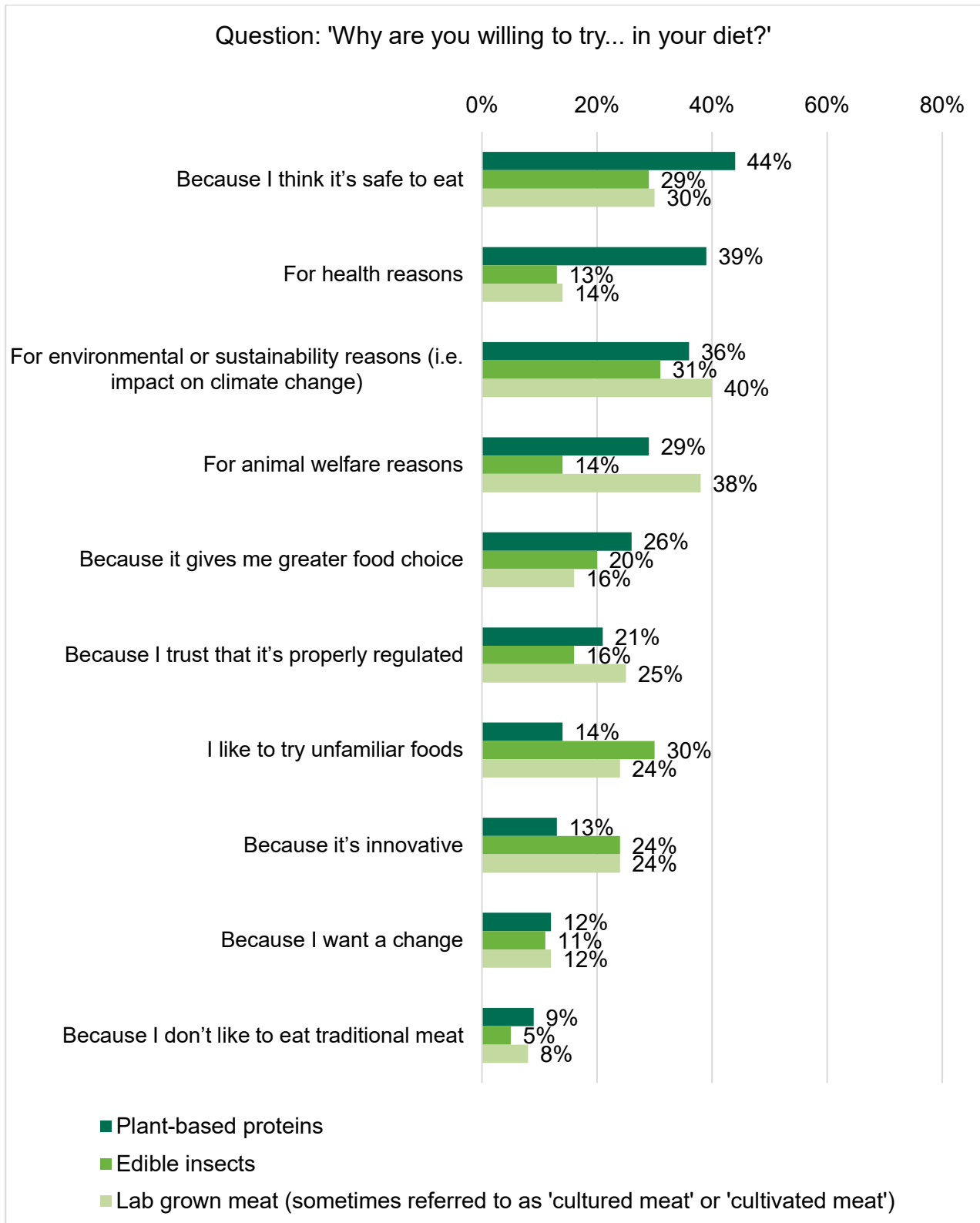
Base: 1,930 Online, adults 16-75 in England, Wales and Northern Ireland, 9-11th December 2021

Respondents who reported willingness to try plant-based proteins in their diet, when prompted with a list, were primarily motivated by the perception that plant-based proteins are safe to eat (44%), health reasons (39%) and environmental or sustainability reasons (36%) (Figure 4).

Respondents who were willing to try lab grown meat were shown the same list of potential reasons to choose from. Most commonly, respondents expressed willingness to try lab grown meat due to environmental or sustainability reasons (i.e. impact on climate change) (40%) and for animal welfare reasons (38%). In terms of safety, 3 in 10 (30%) reported they would be willing to try lab grown meat because they think it's safe to eat, whilst a quarter (25%) of respondents were willing to try as they trust that it's properly regulated (Figure 4).

Respondents who reported willingness to try edible insects were most commonly motivated by environmental or sustainability reasons (31%) and a desire to try unfamiliar foods (30%). Approximately 3 in 10 (29%) were willing to try edible insects because they perceive them to be safe to eat (Figure 4).

Figure 4: Top 10 reasons for willingness to try alternative protein types

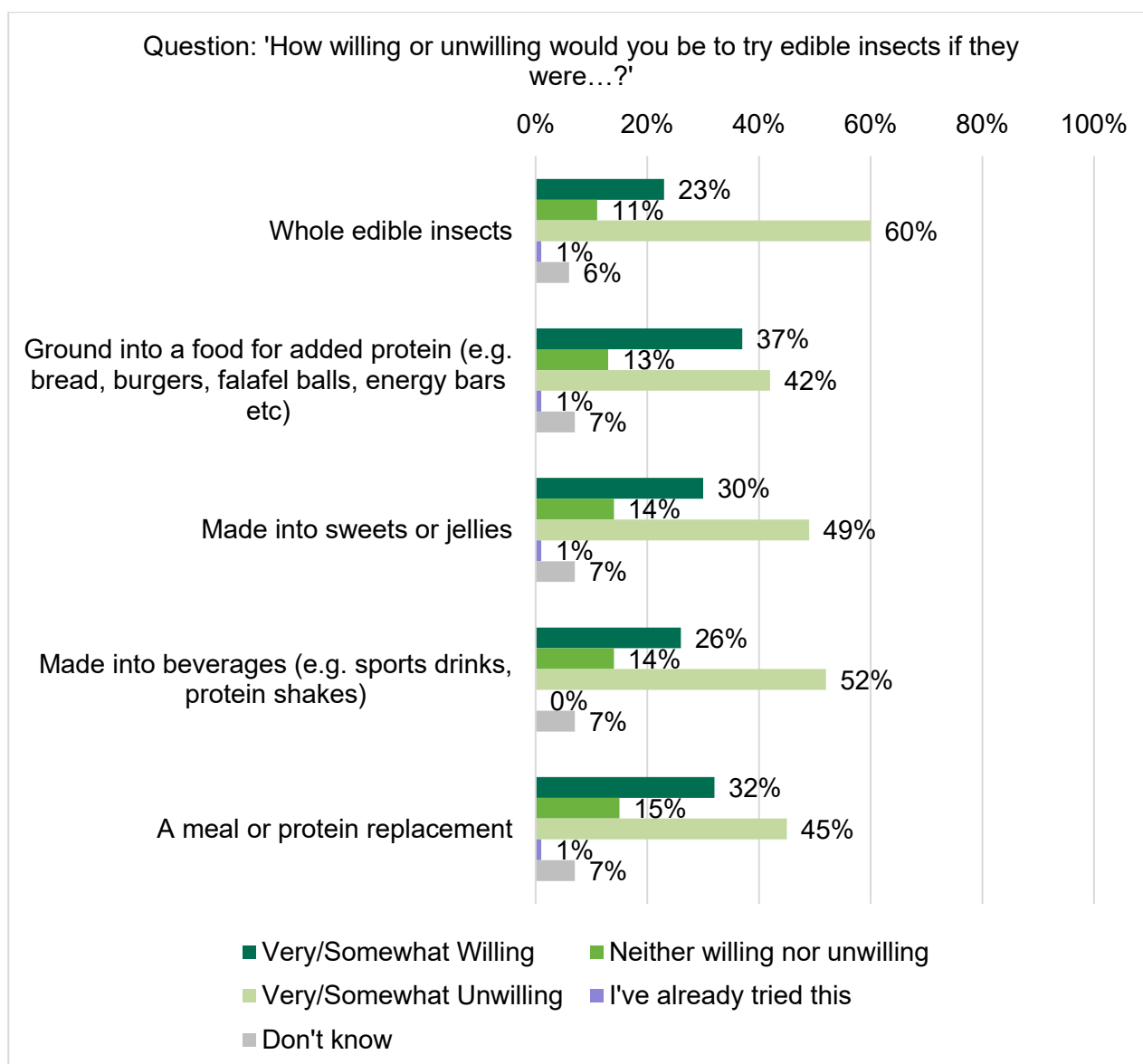


Base: All willing to try... plant-based proteins (1,160), lab grown meat (662), edible insects (510) England, Wales and Northern Ireland, 9-11th December 2021. Please note that this question is multi-choice, which means that the values in the chart do not add to 100%.

Respondents were asked how willing or unwilling they would be to try edible insects in different forms. Acceptability of edible insects ground into food for added protein (for example, bread, burgers, falafel balls etc) was highest, with nearly 2 in 5 (37%) willing to try this. Around a third (32%) reported willingness to try edible insects in the form of a meal or protein replacement, 3 in 10 (30%) made into sweets or jellies and over a quarter (26%) would try edible insects made into beverages (Figure 5).

Whole edible insects were least favoured, with 3 in 5 (60%) reporting they were unwilling to try them in this form and only 23% saying they were willing (Figure 5).

Figure 5: Willingness to try edible insects in different forms



Base: 1,930 Online, adults 16-75 in England, Wales and Northern Ireland, 9-11th December 2021. Please note that this question is multi-choice, which means that the values in the chart do not add to 100%.

Respondents who reported unwillingness to try any of the alternative proteins tested were shown a list of potential reasons.

Respondents who were unwilling to try plant-based proteins most commonly reported that this was because they like to eat traditional meats (36%). Almost a third (32%) reported that they didn't see a need to eat plant-based proteins and 30% didn't think it would taste good (Figure 6).

Almost half (49%) of respondents who were unwilling to try lab grown meat reported that this was because they find it off-putting, around 2 in 5 (37%) didn't see a need to eat lab grown meat and a third (33%) like to eat traditional meats. Three in ten (30%) were unwilling to try lab grown meat because they don't think it's safe to eat (Figure 6).

There were significant differences in reasons for unwillingness to eat lab grown meat amongst the following demographics:

- Men (37%) were more likely than women (30%) to report unwillingness to try lab grown meat because they like to eat traditional meats.
- Respondents aged 55-75 (23%) were less likely than most other age groups (for example, 45% of 16-24 year olds) to cite safety concerns as a reason they were unwilling to try lab grown meat.

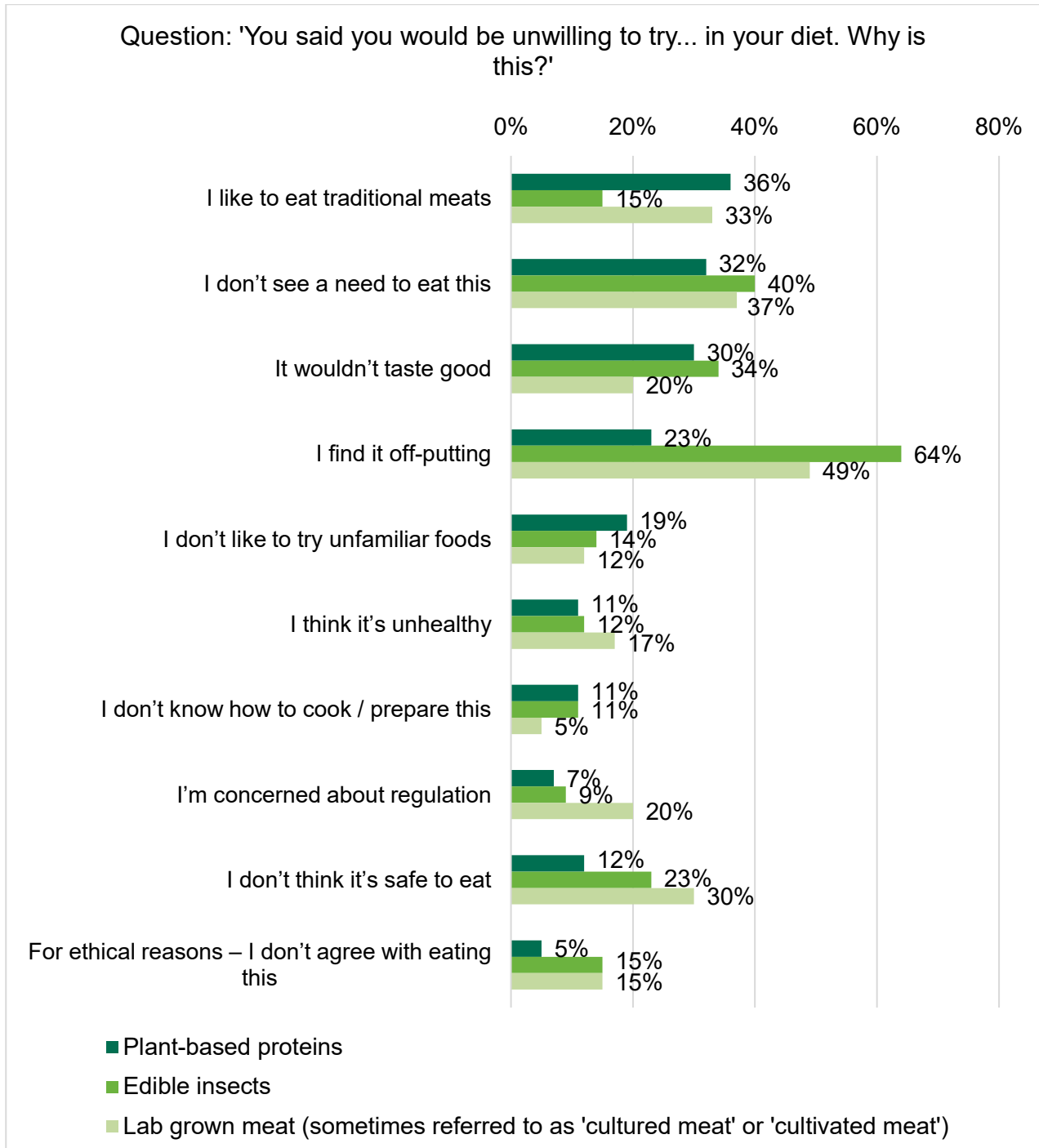
The majority (64%) of respondents who were unwilling to try edible insects in their diet cited finding it off-putting as the reason, 2 in 5 (40%) didn't see a need to eat edible insects, around a third (34%) didn't think it would taste good and 23% didn't think it was safe to eat (Figure 6).

There were significant differences in reasons for unwillingness to eat edible insects amongst the following demographics:

- Women were more likely than men to be unwilling to try edible insects due to finding it off-putting (67% versus 60%) and because they didn't see a need to eat this (45% versus 33%).
- Respondents aged 55-75 (71%) were more likely than 16-34 year olds (56%) to report unwillingness to try edible insects due to finding it off-putting.

- Younger age groups (for example, 32% of 25-34 year olds) were more likely than older age groups (for example, 18% of 55-75 year olds) to report unwillingness to try edible insects due to concerns about safety.

Figure 6: Top 10 reasons for unwillingness to try alternative protein types



Base: All unwilling to try... plant-based proteins (330), lab grown meat (823), edible insects (1,097) England, Wales and Northern Ireland, 9-11th December 2021. Please note that this question is multi-choice, which means that the values in the chart do not add to 100%.

Encouraging greater uptake of alternative proteins

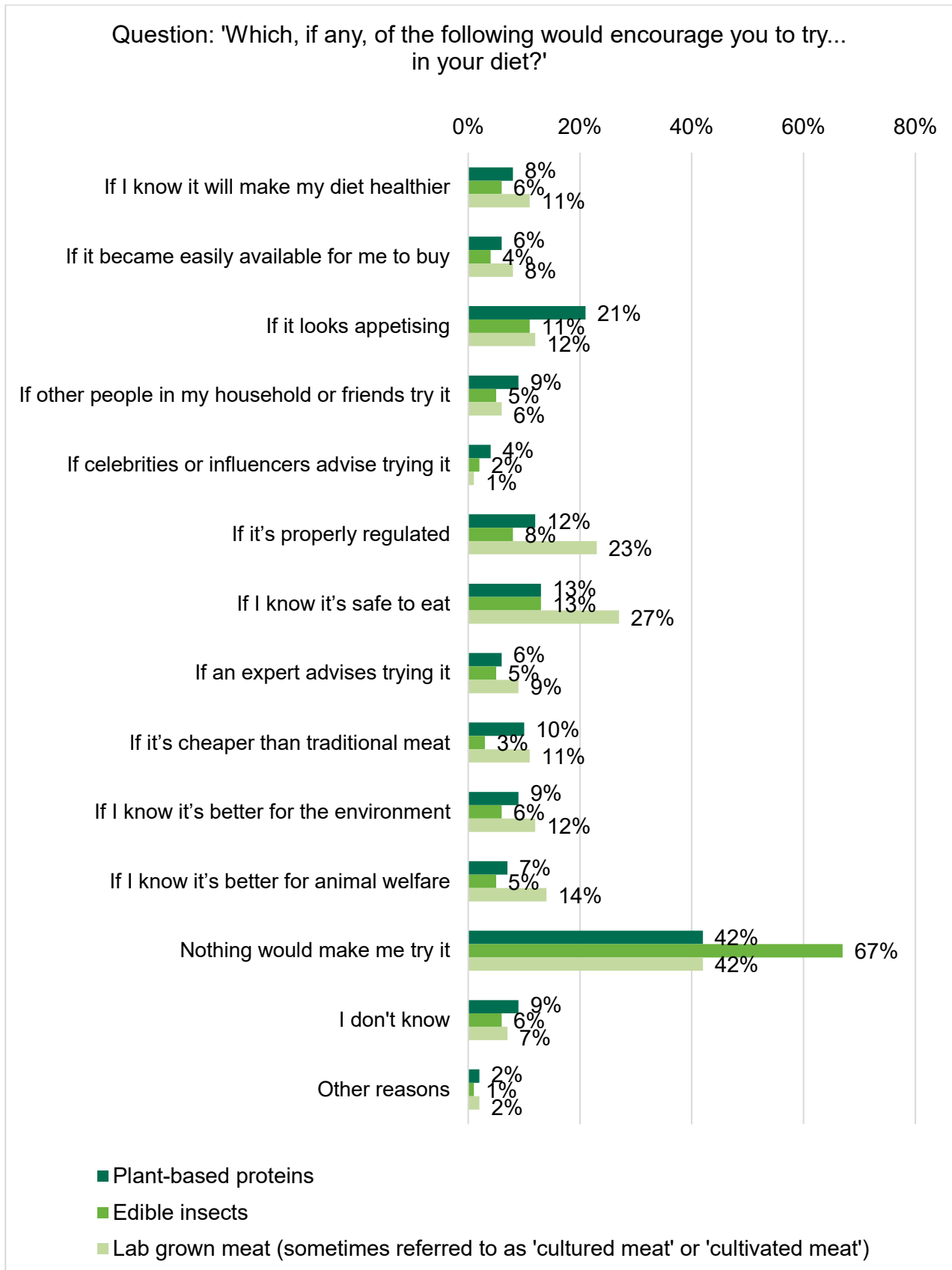
Respondents who reported initially being unwilling to try plant-based proteins, lab grown meat and edible insects were asked whether anything (from a prompted list) could persuade them to try it.

Two in five (42%) reported that nothing could encourage them to try plant-based proteins, whilst nearly half (49%) of respondents could be encouraged to try plant-based proteins. Around 1 in 5 (21%) respondents who expressed initial unwillingness to try plant-based proteins could be encouraged to try this if it looked appetising (Figure 7).

Although 2 in 5 (42%) reported that nothing could encourage them to try lab grown meat in their diet, over half (51%) of unwilling respondents suggested that they could be encouraged to try it. Respondents initially unwilling to try lab grown meat could most be encouraged if they knew it was safe to eat; over a quarter (27%) would be open to trying lab grown meat if they knew it was safe to eat whilst 23% would be encouraged if it was properly regulated. Respondents aged 16-24 (20%) were more likely than those aged 45-54 (8%) and 55-75 (10%) to report they could be encouraged to try lab grown meat if they know it's better for the environment (Figure 7).

Two thirds (67%) of respondents reported that nothing would make them try edible insects. One in eight (13%) respondents who were unwilling to try edible insects could be encouraged if they knew it was safe to eat whilst 11% would be open to trying edible insects if they looked appetising (Figure 7).

Figure 7: Factors that could encourage greater uptake of alternative proteins



Base: All unwilling to try... plant-based proteins (330), lab grown meat (823), edible insects (1,097) England, Wales and Northern Ireland, 9-11th December 2021.

Appendix A

Glossary of terms

Term	Definition
Alternative proteins	Alternative proteins describe types of food which are high in protein that you eat instead of meat and seafood. This includes plant proteins such as soy, hemp seed and ancient grains such as quinoa. It also includes emerging products such as edible insects and lab grown meat.
Plant-based proteins	A meaningful source of protein derived from plants (for example, soy, hemp seed and ancient grains such as quinoa).
Lab grown meat	Lab grown meat is also known as 'cultured meat' or 'cultivated meat' and refers to meat that is grown using the stem cells of an animal, without the need for animal slaughter.
Edible insects	Species of insects used for human consumption (for example, mealworms, grasshoppers)

Explanation of socio-economic groupings

Grade	General description	Examples of occupations	Retiree description
A	These are professional people, or are very senior in business or commerce or are top level civil servants.	<ul style="list-style-type: none"> • Coroner • General Practitioner if in own practice or partner in practice • Film Producer • University Professor • Self Employed electrician with over 25 employees • Chief Officer in fire service • Police Commissioner • Bishop Chartered Accountant with own practice • Editor of national newspaper 	Retired people, previously grade A, and their widows.
B	Middle management executives in large organisations, with appropriate	<ul style="list-style-type: none"> • Editor of provincial newspaper • Self-employed electrician with under 24 staff 	Retired people, previously grade B, and their widows.

Grade	General description	Examples of occupations	Retiree description
	<p>qualifications Top management or owners of small business</p>	<ul style="list-style-type: none"> • Self-employed window cleaner with 25+ staff • Fully qualified doctor who is not in own practice or a consultant • Hospital sister/charge nurse grades F & G • Health visitor • Computer programmer • Civil engineer with professional qualifications • University lecturer • Teacher in secondary school • Television producer • Lawyer not in own practice • Detective Inspector (police) • Vicar 	
C1	<p>Junior management owners of small establishments: and all others in non-manual Positions in this group have very varied responsibilities and educational needs.</p>	<ul style="list-style-type: none"> • Primary school teacher • Students living away from home • Nurse - SEN SRN Midwife • Student Nurses • Typist • Travel courier • Telephone operator • Detective Sergeant • Police Constable • Curate • Self employed electrician with 1-4 employees • Self employed window cleaner with 5-24 employees • Market Research interviewer • Television production assistant 	<p>Retired people previously grade C1 and their widows.</p>
C2	<p>All skilled manual workers, and those manual workers with</p>	<ul style="list-style-type: none"> • Electrician • Plumber • Panel beater • Thatcher 	<p>Retired people previously grade C2 with a pension from their job Widows if receiving pensions</p>

Grade	General description	Examples of occupations	Retiree description
	responsibility for other people.	<ul style="list-style-type: none"> • Tailor • Cobbler • Coach Driver (PSV) • HGV Driver • Ambulance Driver • Prison officer • Weaver • Welder • Typesetter • Computer engineer • Joiner • London black cab driver 	from their late husband's job.
D	All semi-skilled and unskilled manual workers, and apprentices and trainees to skilled workers.	<ul style="list-style-type: none"> • Window cleaner • Taxi driver – provinces • Nursing auxiliary • Porter • Fork lift truck driver • Warehouseman • Road worker • Road sweeper • Waiter • Machine tool operator • Groom • Child minder • Chambermaid • Farm worker – no qualifications 	Retired people previously grade D with a pension from their job Widows if receiving pensions from their late husband's job.
E	<p>All those entirely dependent on the state long term, through sickness, unemployment, old age or other reasons. Those unemployed for a period exceeding 6 months (otherwise classify on previous occupation), casual workers and those without a regular income.</p> <p>Only households without a chief wage</p>	<ul style="list-style-type: none"> • Unemployed longer than 6 months • Living off state benefits only • Pensioners with no private/occupational pension • Pensioners with occupational pension retain their social grade • Widows with pension from their husbands' occupation retain the SG of their husband. • Divorcees living off maintenance from their 	N/A

Grade	General description	Examples of occupations	Retiree description
	earner will be coded in this group.	husbands' employment are graded on their husbands' occupation.	

Appendix B

Questionnaire

Q1. Have you heard of the following terms?

Please select one per row

Ask all, single line grid, randomise rows

Rows

1. Edible insects
2. Lab grown meat (sometimes referred to as 'cultured meat' or 'cultivated meat')
3. Plant-based proteins

Columns

1. Yes, and I know what it means
2. Yes, but I don't know what it means
3. No
4. Don't know

Information text

Show all

Alternative proteins describe types of food which are high in protein that you eat instead of meat and seafood. This includes plant proteins such as soy, hemp seed and ancient grains such as quinoa. It also includes emerging products such as edible insects and lab grown meat.

Q2. To what extent do you think eating plant-based proteins (for example, soy, hemp seed, quinoa) is safe or unsafe?

Please select one

Ask all

1. Very safe
2. Somewhat safe
3. Neither safe nor unsafe
4. Somewhat unsafe

5. Very unsafe
6. Don't know

Q3. To what extent do you think eating edible insects is safe or unsafe?

Please select one

Ask all

1. Very safe
2. Somewhat safe
3. Neither safe nor unsafe
4. Somewhat unsafe
5. Very unsafe
6. Don't know

Q4. To what extent do you think eating lab grown meat is safe or unsafe?

Please select one

Ask all

1. Very safe
2. Somewhat safe
3. Neither safe nor unsafe
4. Somewhat unsafe
5. Very unsafe
6. Don't know

Q5. How willing would you be to try the following types of alternative proteins?

Please select one per row

Ask all, single line grid, randomise rows

Rows

1. Lab grown meat
2. Edible insects (for example, mealworms, grasshoppers)
3. Plant-based proteins (for example, soy, hemp seed, quinoa)

Columns

1. Very willing

2. Somewhat willing
3. Neither willing nor unwilling
4. Somewhat unwilling
5. Very unwilling
6. Don't know
7. I've already tried this

Q6. You said you would be unwilling to try [pull through rows 1-3 if codes 4-5 selected at Q5] in your diet. Why is this?

Please select as many as apply

Ask if Q5 rows 1-3 = 4 or 5, multi choice, randomise, repeat question for each protein unwilling to try at Q5

1. I think it's unhealthy
2. I think it's expensive
3. It's not readily available / easy to find
4. I don't know how to cook / prepare this
5. I find it off-putting
6. I don't like to try unfamiliar foods
7. I'm concerned about regulation
8. I don't think it's safe to eat
9. It wouldn't taste good
10. I don't see a need to eat this
11. For religious and/or cultural reasons
12. For medical reasons or other dietary restriction (for example, an allergy)
13. For ethical reasons – I don't agree with eating this
14. I like to eat traditional meats
15. Other reasons – please specify open box, fixed
16. I don't know – exclusive, fixed

Q7. Which, if any, of the following would encourage you to try [pull through rows 1-3 if codes 4-5 selected at Q5] in your diet?

Please select as many as apply

Ask if Q5 rows 1-3 = 4 or 5, multi choice, randomise, repeat question for each protein unwilling to try at Q5

1. If I know it will make my diet healthier
2. If it became easily available for me to buy
3. If it looks appetising
4. If other people in my household or friends try it
5. If celebrities or influencers advise trying it
6. If it's properly regulated
7. If I know it's safe to eat
8. If an expert advises trying it
9. If it's cheaper than traditional meat
10. If I know it's better for the environment
11. If I know it's better for animal welfare
12. Nothing would make me try it
13. Other reasons – please specify open box, fixed
14. I don't know – exclusive, fixed

Q8. Why are you willing to try [pull through rows 1-3 if codes 1-2 selected at Q5] in your diet?

Please select as many as apply

Ask if Q5 rows 1-3 = 1 or 2, multi choice, randomise, repeat question for each protein willing to try at Q5

1. For health reasons
2. For animal welfare reasons
3. For environmental or sustainability reasons (i.e. impact on climate change)
4. For financial reasons
5. Because I want a change
6. Because of advice from friends or family
7. Because of advice from celebrities or influencers
8. Because of advice from experts
9. Because I don't like to eat traditional meat
10. Because I trust that it's properly regulated
11. Because I think it's safe to eat
12. Because it's innovative
13. Because it gives me greater food choice

14. I like to try unfamiliar foods
15. Other reasons – please specify open box, fixed
16. I don't know – exclusive, fixed

Q9. How willing would you be to try edible insects if they were...

Please select one per row

Ask all, single line grid, randomise rows

Rows

1. Whole edible insects
2. Ground into a food for added protein (for example, bread, burgers, falafel balls, energy bars etc)
3. Made into sweets or jellies
4. Made into beverages (for example, sports drinks, protein shakes)
5. A meal or protein replacement

Columns

8. Very willing
9. Somewhat willing
10. Neither willing nor unwilling
11. Somewhat unwilling
12. Very unwilling
13. Don't know
14. I've already tried this

© Crown copyright 2020

This publication (not including logos) is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

For more information and to view this licence:

- visit [the National Archives website](#)
- email psi@nationalarchives.gov.uk
- write to: Information Policy Team, The National Archives, Kew, London, TW9 4DU

For enquiries about this publication, [contact the Food Standards Agency](#).



[@foodgov](#)



Find us on Facebook: [facebook.com/FoodStandardsAgency](https://www.facebook.com/FoodStandardsAgency)