

Food Safety Survey Report

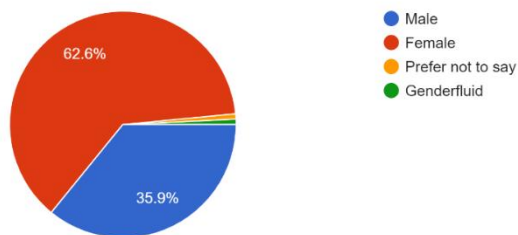
Aim of the survey and why we chose this approach:

Our project involves heavy communication with the food industry, but we also deemed it necessary to understand the public's food safety concerns and evaluate how much awareness they have of botulism, as well as food safety in general. We chose to approach this in the form of a survey to reach a wide public audience. We advertised the survey to our peers on social media as well as our family members and other iGEM teams. Overall, there were 131 respondents and the results of the survey are shown below.

Survey results:

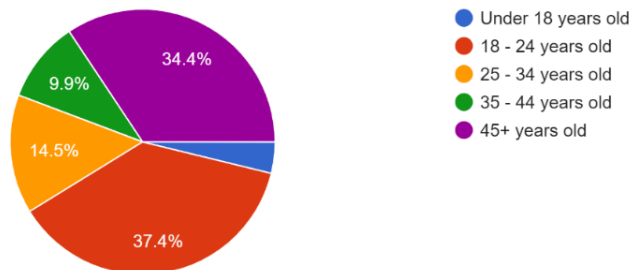
What is your gender?

131 responses



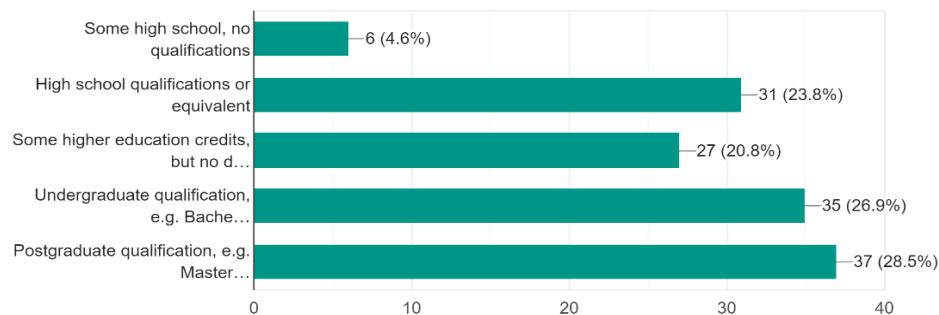
What is your age?

131 responses



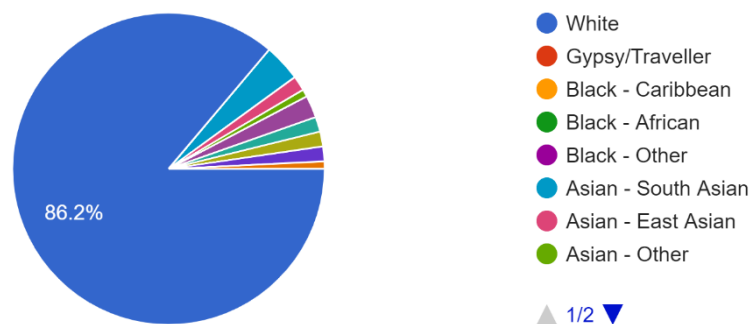
What is the highest degree or level of school you have completed?

130 responses



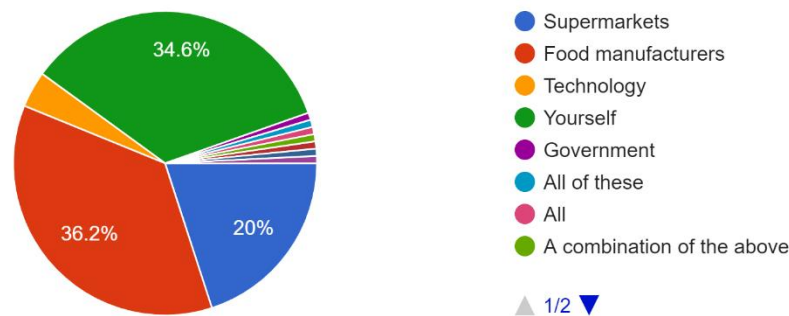
What is your ethnic background?

130 responses



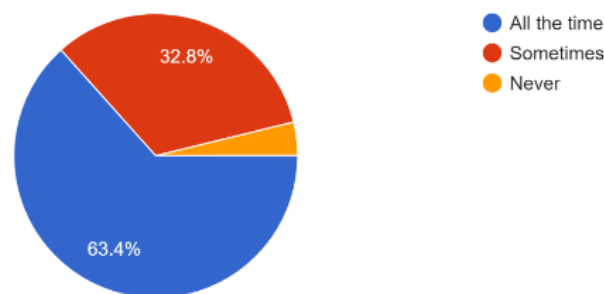
Who do you trust to ensure that your food is safe?

130 responses



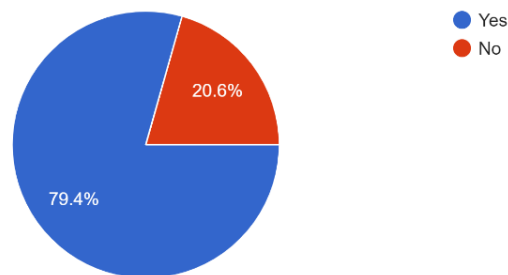
How often do you check expiry dates when buying food?

131 responses



Do you know the difference between a use-by and best before date?

131 responses



* If you answered Yes, please describe the difference below:

94 responses

Use-by: food much be consumed before this date.

Best before date: food should be consumed before this date and its quality will be reduced after a best before date.

Best before date - you can still eat it after the set date. Use by - suggested that you don't eat the product after this point.

Best before describes the date beyond which food is no longer at its highest quality: it's a guideline. Use-by shows a date that, when passed, food may no longer be safe to consume.

Use by is for high risk food that can't be eaten after the date while best before means the food will not taste as good after the date

Use by is for safety reasons. Best before is a suggestion - after this date the food may decrease in quality or taste but is still safe to eat

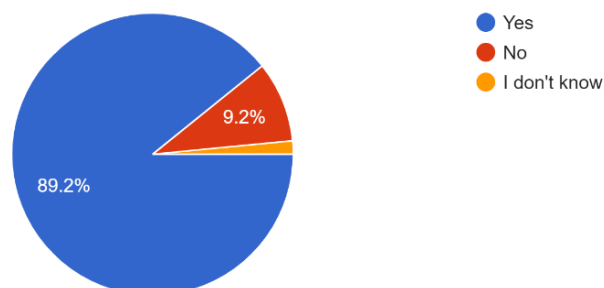
Both are more of a guideline really :P use before for stuff that may become dangerous e.g. From bacteria as opposed to something that may not be as good quality e.g. Become stale

Use by means you must use it before otherwise it'll be unsafe. Best before generally means you can probably eat it afterwards without dying, but maybe still check it first

Best before is the food will taste nicest and be freshest before that date, use by means the product is safe until then

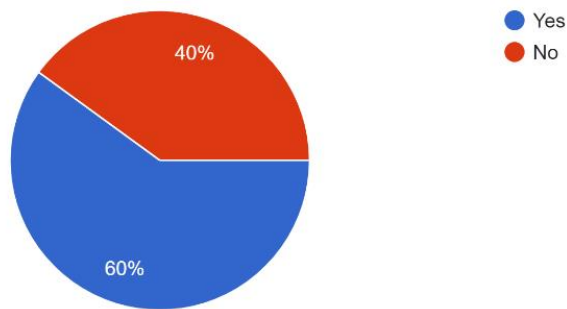
Have you ever knowingly eaten food which has passed its expiry date?

130 responses



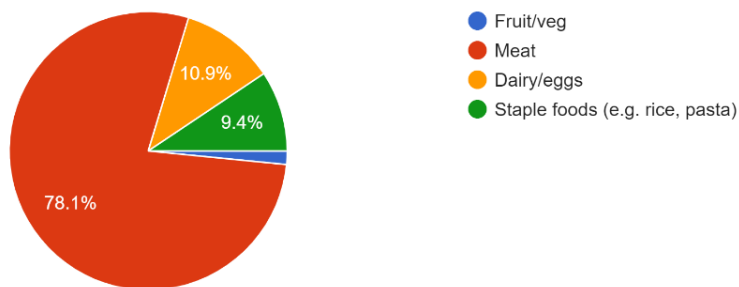
Do you heat food more than once?

130 responses

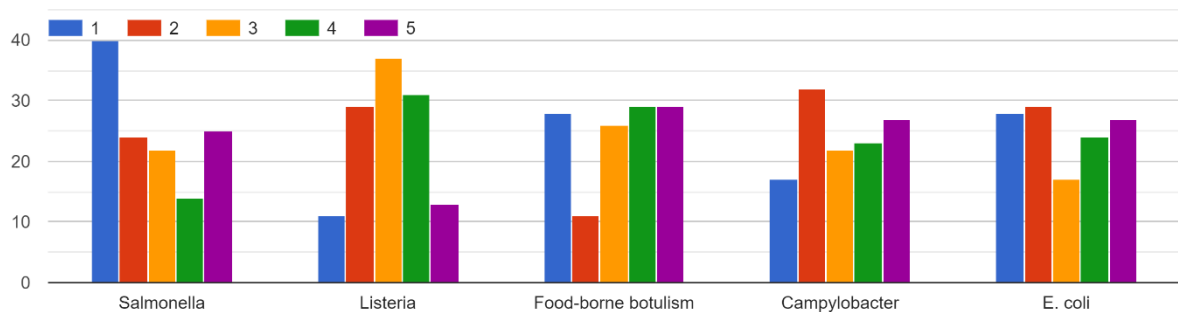


What type of food are you most concerned about getting food poisoning from?

128 responses

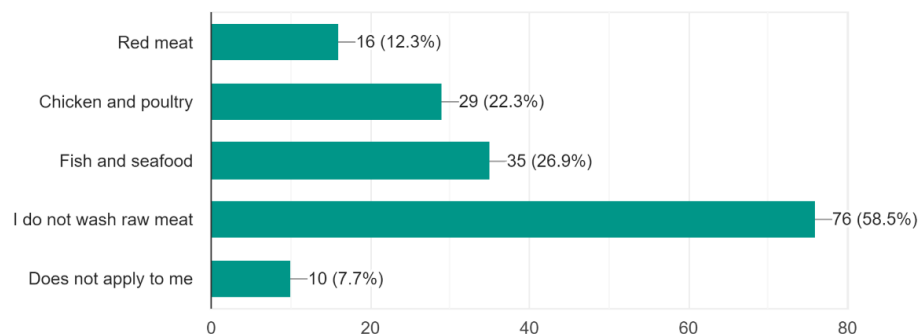


With 1 being your highest concern and 5 being your lowest, how would you rank these food poisoning causes/illnesses?



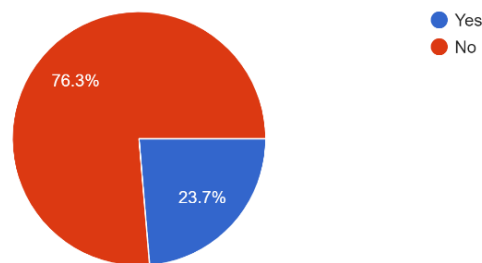
Which types of raw meat do you wash before cooking? - Tick all that apply

130 responses



Do you use the same knives, cutting boards and other utensils for raw and cooked food?

131 responses



*

How do you check if your meat is cooked?

126 responses

Do meat juices run clear? Does the meat pull away from the bone?
n/a
Follow cooking instructions, examine it visually before eating.
By eye and colour of juices
Shouldn't be pink in the middle, should have clear juices
Cut it and look at the middle
Cut into it and look for pink (white meat) Beef is okay rare!
Timing
Meat eating doesn't maximise utility.
Look
Cut to the centre and see if the juices run clear, as well as looking for any red/pink/blood
Check if it runs clear

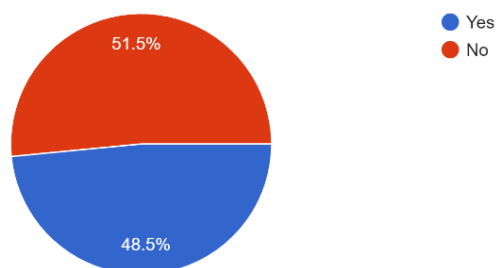
* How do you store opened cans?

128 responses

I dont. If contents not used decant in to other non metallic container
In the fridge for a few days before throwing them out
put in a plastic pot with a lid in the fridge
I empty the contents into a bowl and cover the bowl and place in the fridge.
Not in the can but a reusable container
In the fridge for less than 3 days
In the fridge
Covered in the fridge
fridge
Put contents in glass killer jar then can in recycling
I don't believe I have ever had cause to store an opened can
In a different container in the fridge

Have you canned/jarred your own food at home before?

130 responses



* Please note that for the long answer questions not all of the 131 responses could be shown, but an analysis of the responses has been described in the results analysis section.

Results analysis:

The 2 biggest age groups that answered the survey were 18 – 24 year olds (37.4%) and people who are 45+ years old (34.4%), with 62.6% of respondents being female. It can be seen that the majority of respondents had high school qualifications or above as well.

When asked “Who do you trust to ensure that your food is safe?”, 36.2% of people trust food manufacturers the most. This was closely followed by 34.6% of people who said that they

would only trust themselves to ensure the safety of their own food, with only 20% of respondents trusting supermarkets the most. This is backed up in the next question, “How often do you check expiry dates?”, where 63.4% of people said that they check expiry all the time when buying food from supermarkets.

79.4% of respondents said they knew the difference between a use-by and best before date, with all of them stating the definitions correctly when asked if they could describe them. Interestingly, a large percentage (89.2%) of people said that they had knowingly eaten food which has passed its expiry date, and there was a 60/40 split between Yes/No respectively when asked “Do you reheat food more than once?”.

When asked about what types of food concern them the most in regard to food poisoning, 78.1% of people said meat – This fits well with our project as botulism is known to be a concern to the meat industry too.

The survey also asked people to give rankings to Salmonella, Listeria, botulism and Campylobacter in terms of highest to lowest concern. These organisms/diseases were chosen as they are the most common illnesses associated with food. Salmonella seemed to come out on top with 40 respondents ranking it as their highest concern. 28 respondents ranked food-borne botulism as their highest concern, 17 said campylobacter and 11 said listeria.

Cooking and storing food at home:

Questions regarding cooking and storing food at home were asked as one of the biggest causes of food poisoning such as botulism is when people inappropriately store their foods.

When asked “Do you use the same utensils for raw and cooked food?”, 76.3% of respondents said that they do. It was pleasant to see that the majority of respondents cook in a hygienic manner and understand basic food safety. This was also validated by their responses to the question “How do you check if your meat is cooked?”, with almost all respondents saying that they check if the meat juices are running clear and that the meat isn’t pink inside.

However, when asked “How do you store opened cans?”, there was a significantly smaller majority of 42.5% of respondents saying that they store it the correct way (decant the contents into a plastic/glass container and store in the fridge). 37% said that they store the can itself in the fridge, and 20.5% said that they throw the can away/use it all at once.

Leading on from this, the survey also asked, “Have you canned/jarred your own food at home before?”. 51.5% of respondents said that they do not can/jar their own food, and 48.5% said that they do.

What we have learned:

This survey on food safety habits has informed us about the general understanding that the public have. We have learned that the majority of the respondents are aware of how to properly store their food and check whether it is cooked properly, however it was also to interesting to see that they find salmonella their biggest food safety concern. Once we have

reached our end goal of engineering a safe strain of *C. botulinum*, it may be a good idea to address public concerns and engineer a safe strain of *Salmonella* too.

The largest age group which responded to our survey were people between the ages of 18 – 24 years old (37.4%) who are attending university. We can use the results of this survey to inform us on what we should include in the food safety poster we are designing for students living in halls/houses.

It is also important to note that 86% of respondents identified as white. It would have been interesting to gain more responses from people of other cultures/ethnicities as they may have different eating/cooking habits which are not represented in the survey.