

Survey on knowledge and behaviours towards smoked fish: Key findings

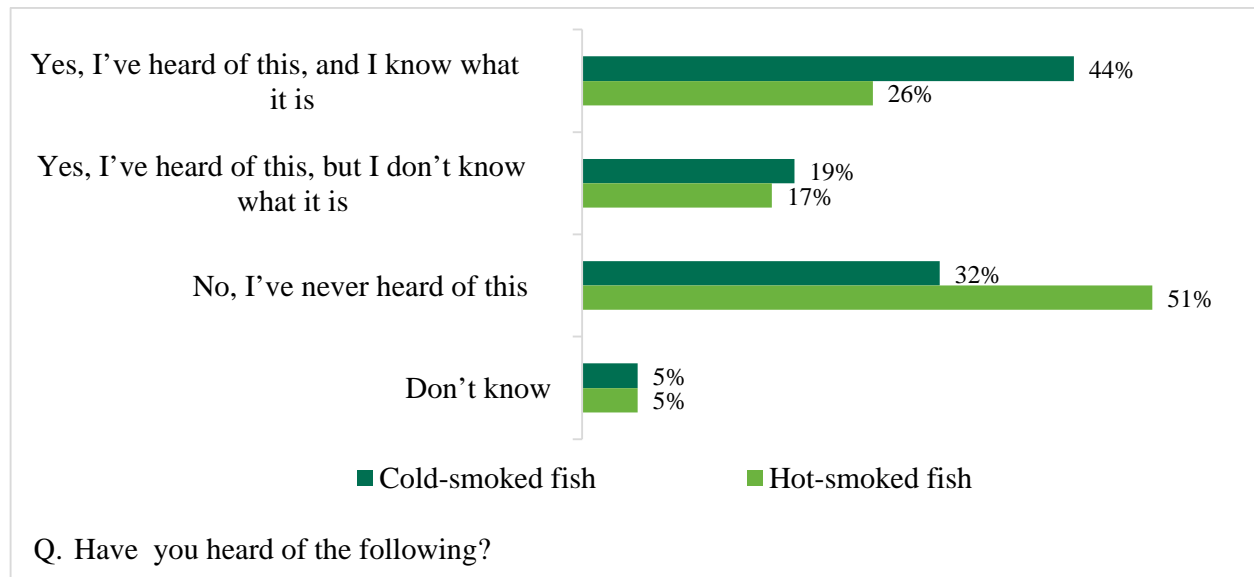
Awareness of RTE smoked fish

Do consumers know that there is a difference between RTE cold smoked fish and RTE hot smoked fish?

In the UK, awareness and knowledge of hot-smoked fish is low, with most consumers saying that they have either never heard of it (51%) or have heard of it but don't know what it is (17%). Awareness and knowledge of cold-smoked fish was higher, with just under half (44%) saying that they have heard of cold-smoked fish and know what it is. This compares to just over a quarter (26%) who say they have heard of hot-smoked fish and know what it is. This can be seen in Figure 1.

Figure 1: Knowledge of smoked fish

Base: All Adults aged 16-75 in UK (2,390 who consented to the collection of their personal health-related data).



When looking across UK nations, consumers in Scotland are more likely than those in the rest of the UK to say that they have heard and are familiar with cold-smoked fish (59% Scotland vs 43% in the rest of the UK- see Table 1) and those in Scotland are more likely to have heard of hot-smoked fish (40% Scotland vs 25% in the rest of the UK- see Table 2).

Table 1: Knowledge of cold-smoked fish by nation

Knowledge statement	Total (A)	EWNI (B)	Scotland (C)
Yes, I've heard of this and I know what it is	44%	43%	59% B

Knowledge statement	Total (A)	EWNI (B)	Scotland (C)
Yes, I've heard of this, but I don't know what it is	19%	19%	15%
No, I've never heard of this	32%	33%	23%
Don't know	5%	5%	3%
Base	2390	1835	555

Base: All Adults aged 16 to 75 in the UK (2,390 who consented to the collection of their personal health related data)

Table 2: Knowledge of hot-smoked fish by nation

Knowledge statement	Total (A)	EWNI (B)	Scotland (C)
Yes, I've heard of this and I know what it is	26%	25%	40% B
Yes, I've heard of this, but I don't know what it is	17%	17%	19%
No, I've never heard of this	51%	52%	39%
Don't know	5%	5%	2%
Base	2390	1835	555

Base: All Adults aged 16 to 75 in the UK (2,390 who consented to the collection of their personal health related data)

Awareness and knowledge of smoked fish varies across vulnerable consumers. As outlined in Table 4, when it comes to hot-smoked fish, older consumers (aged 65-75) are more likely to say that they have never heard of it compared to consumers overall (62% vs 51%). Reflecting this, those with a self-reported weakened immune system are more likely to say that they have heard of both types of smoked fish but do not know what they are compared to older consumers (22% vs 13% of consumers aged 65-75 for cold-smoked fish, and 20% vs 11% of consumers aged 65-75 for hot-smoked fish).

No significant differences in knowledge of smoked fish type were identified among those who reported cooking for someone with a weakened immune system.

Table 3: Knowledge of hot-smoked fish by vulnerable group

Knowledge statement	Total (A)	65 and over (B)	Weakened immunity (C)	Any vulnerable group (D)
Yes, I've heard of this and I know what it is	44%	50%	42%	47%
Yes, I've heard of this but I don't know what it is	19%	13%	22% BD	18% B
No, I've never heard of this	32%	33%	34%	32%
Don't know	5%	4%	2%	4%
Base	2390	301	331	605

Base: All adult aged 16 to 75 in UK (2,390 who consented to the collection of their personal health related data)

Table 4: Knowledge of hot smoked fish by vulnerable group

Knowledge statement	Total (A)	65 and over (B)	Weakened immunity (C)	Any vulnerable group (D)
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Yes, I've heard of this and I know what it is	26%	26%	30%	29%
Yes, I've heard of this but I don't know what it is	17%	11%	20% B	16% B
No, I've never heard of this	51%	62% ACD	47%	52%
Don't know	5%	2%	3%	3%
Base	2390	301	331	605

Base: All adult aged 16 to 75 in UK (2,390 who consented to the collection of their personal health related data).

All consumers were shown the following information about cold-smoked fish:

'Cold-smoked' fish is normally labelled as 'smoked' fish on packaging. It has been cured (for example, in salt) and then smoked at a low temperature, but it is not cooked through. RTE cold-smoked fish typically come in thin slices, and it can be eaten hot or cold. Examples include smoked trout slices and smoked salmon slices.

Likewise, all consumers were shown the following regarding hot-smoked fish:

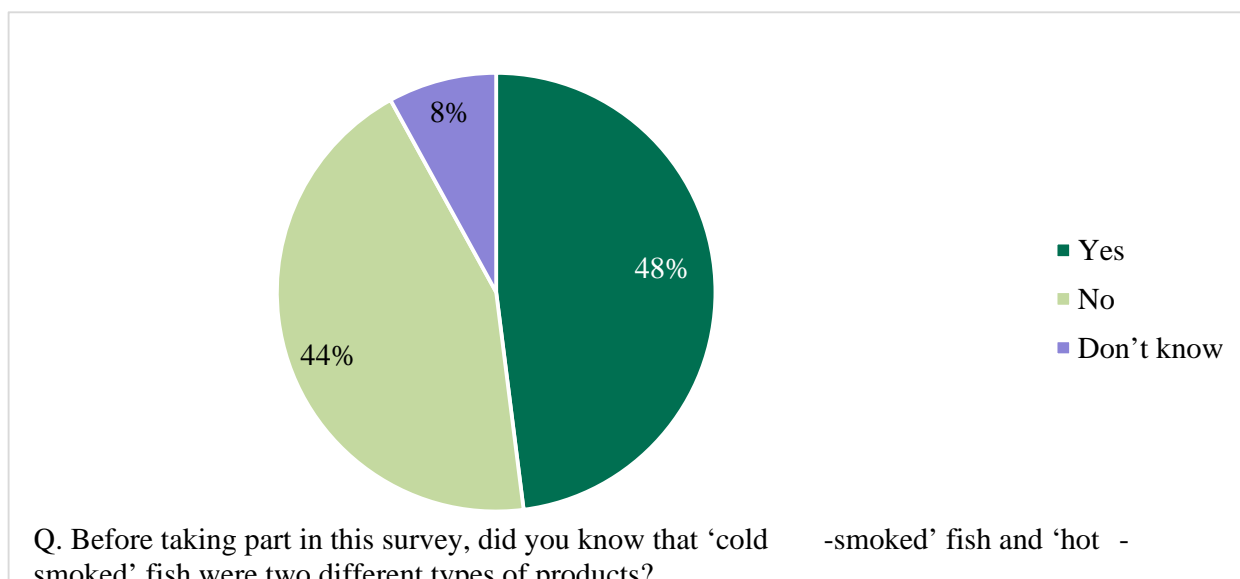
'Hot-smoked' fish has been smoked at a high heat until cooked through. It is usually sold as whole fish or fillets and comes apart in flakes, like regular cooked fish, and it can be eaten hot or cold. Examples include RTE hot-smoked salmon and hot-smoked mackerel.

After being shown this information about cold-smoked fish and hot-smoked fish, those who said earlier in the survey that they had heard of each type of smoked fish were asked if their previous knowledge matched the information provided. Among those previously familiar with each type of smoked fish, a large majority (91%) said that their understanding matched the description in the survey for both cold-smoked fish and hot-smoked fish. This match between previous knowledge and the description in the survey is similar for vulnerable consumers who had heard of each type of smoked fish. This is also the case for people who regularly cook for vulnerable consumers.

Consumers overall are more divided on whether they knew before participating in the survey that cold-smoked fish and hot-smoked fish were two different types of products (see Figure 2).

Figure 2: Knowledge of cold-smoked fish and hot-smoked fish as two different products

Base: All Adults aged 16-75 in UK (2,390 who consented to the collection of their personal health-related data).



There are differences in levels of awareness of the two types of smoked fish products across UK nations. People in Scotland are more likely to say that they knew cold-smoked fish and hot-smoked fish were two different types of products before taking part (58% in Scotland vs 47% in the rest of the UK). This can be seen in Table 5.

As with consumers overall, people with a weakened immune system and those aged 65-75 were also split on whether they knew that cold-smoked fish and hot-smoked fish were two different types of products (47% and 45% respectively said they knew- see Table 6). There are no significant differences in knowledge of fish types between those who cook for a vulnerable person compared to consumers overall.

Table 5: Knowledge of cold-smoked fish and hot-smoked fish as two different products by nation

Knowledge statement	Total (A)	EWNI (B)	Scotland (C)
Yes	48%	47%	58% B
No	44%	45%	38%
Don't know	8%	8%	4%
Base	2390	1835	55

Base All adults aged 16 to 75 in UK (2,390 consented to the collection of their personal health-related data).

Table 6: Knowledge of cold-smoked fish and hot-smoked fish as two different products by vulnerable group

Knowledge statement	Total (A)	65 and overs (B)	Weakened immunity (C)	Any vulnerable group (D)
Yes	48%	45%	47%	48%
No	44%	47%	45%	43%
Don't know	8%	9%	8%	9%
Base	2390	301	331	605

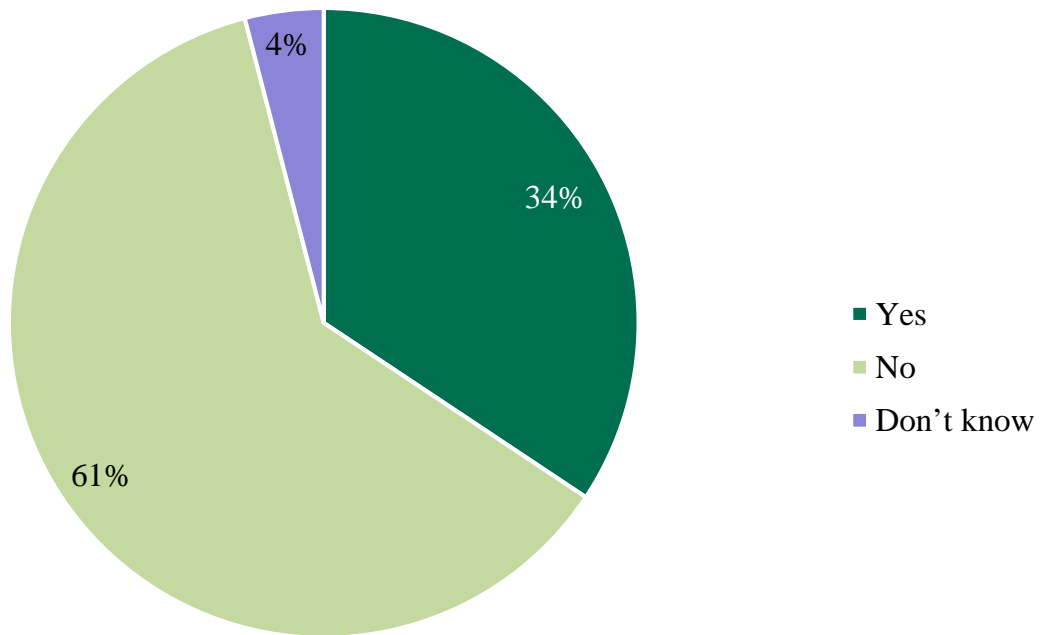
Base All adults aged 16 to 75 in UK (2,390 consented to the collection of their personal health-related data).

Awareness of risks associated with consuming RTE smoked fish for vulnerable consumers

Awareness of risks associated with consuming RTE smoked fish is low overall. Around a third of people (34%) said that they previously knew that some groups of people are at higher risk when consuming RTE smoked fish compared to 61% who said they did not know this.

Figure 3: Awareness of higher risk of Listeria infection for vulnerable people

Base: All Adults aged 16-75 in UK (2,390 who consented to the collection of their personal health-related data).



Q. Before taking part in this survey, did you know that certain groups of people are at higher risk of food poisoning caused by the bacteria Listeria when eating RTE smoked fish?

Among vulnerable consumers, older consumers are less aware of the risks associated with Listeria when consuming RTE smoked fish. As seen in Table 7, people aged 65-75 (69%) are more likely than consumers overall (61%) and those with a weakened immune system (57%) to say that they did not know some groups were at higher risk of food poisoning as a result of consuming RTE smoked fish. Conversely, there is greater awareness among those with a weakened immune system about the risks of food poisoning caused by Listeria when eating RTE smoked fish (41% vs 34% of consumers overall).

There are no significant differences between UK nations or among those who cook for a vulnerable person when it comes to knowledge of the risks of food poisoning from Listeria when eating RTE smoked fish.

Table 7: Awareness of higher risk of Listeria infection for vulnerable people by vulnerable group

Level of awareness	Total (A)	65 and overs (B)	Weakened immunity (C)	Any vulnerable group (D)
Yes	34%	27%	41% ABD	36% B
No	61%	69% ACD	57%	61%
Don't know	4%	4%	2%	3%
Base	2390	301	331	605

Base: All adults aged 16 to 75 in K (2,390 who consented to the collection of their personal health-related data)

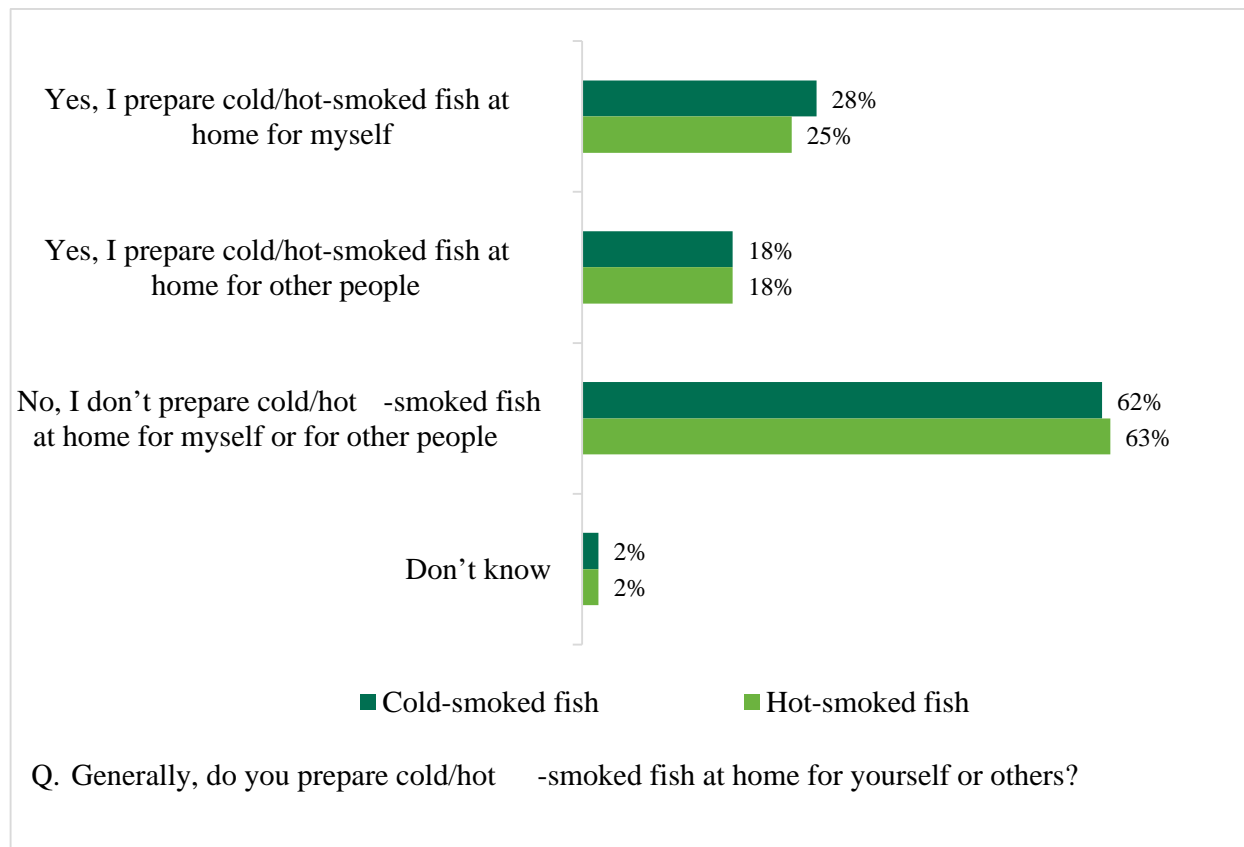
Consumption of RTE smoked fish

How are RTE hot-smoked fish and RTE cold-smoked fish currently consumed?

Most consumers say that they do not generally prepare cold-smoked (62%) or hot-smoked fish (63%) at home. Around a quarter prepare either cold-smoked fish (25%) or hot-smoked fish (28%) for themselves at home, and one in five prepare cold- and hot-smoked fish at home for other people (both 18%). This is shown in Figure 4.

Figure 4: Preparation of smoked fish at home

Base: All Adults aged 16-75 in UK (2,390 who consented to the collection of their personal health-related data).



People with a weakened immune system are more likely than the overall sample to prepare hot-smoked fish at home for themselves or for others (44% vs 35% of consumers overall). Those who cook for a vulnerable person to *Listeria* infection are also more likely to prepare both cold- and hot-smoked fish for others (28% and 27% respectively vs 18% of consumers overall for both).

People in Scotland are more likely to prepare both types of smoked fish at home, in keeping with their greater familiarity with these products. As such, those in Scotland are also more likely to say that they prepare cold-smoked fish at home for other people (23% vs 17% for the rest of the UK), and this is similar when it comes to preparing hot-smoked fish at home for themselves (34% vs 24% for the rest of the UK).

Reported consumption of both types of smoked fish products is similar. Around half of consumers eat cold-smoked fish (51%) and hot-smoked fish (48%) at least once a year, either at home, with friends and family, eating out or buying food to take away. Figure 5 shows reported consumption frequency of both cold-smoked and hot-smoked fish. In line with other findings, among vulnerable consumers, people aged 65-75 are the least likely to consume hot-smoked fish at least once a year (45%).

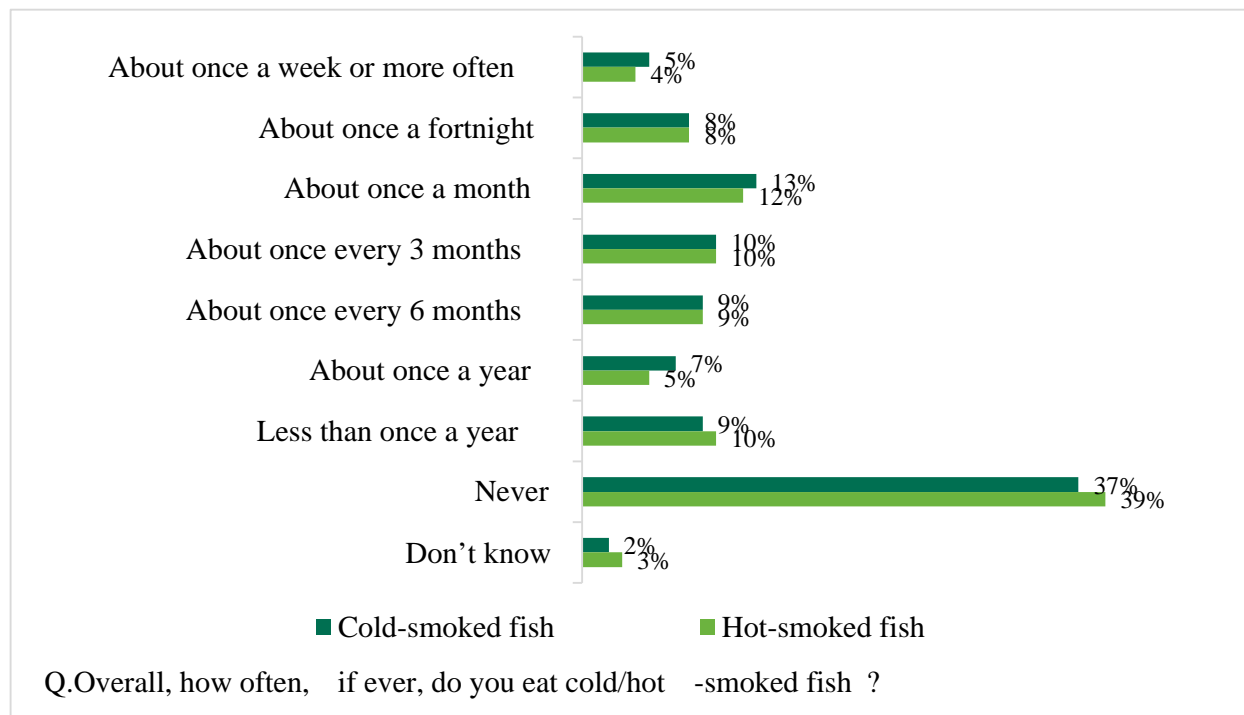
Consumption of smoked fish is also higher in Scotland compared to the rest of the UK. Most consumers in Scotland say that they consume both cold-smoked fish (59% vs 51% in the rest of

the UK) and hot-smoked fish (60% vs 47% in the rest of the UK) at least once a year.

No significant differences were identified regarding consumption frequency among those who cook for a vulnerable person to Listeria infection.

Figure 5: Consumption of smoked fish

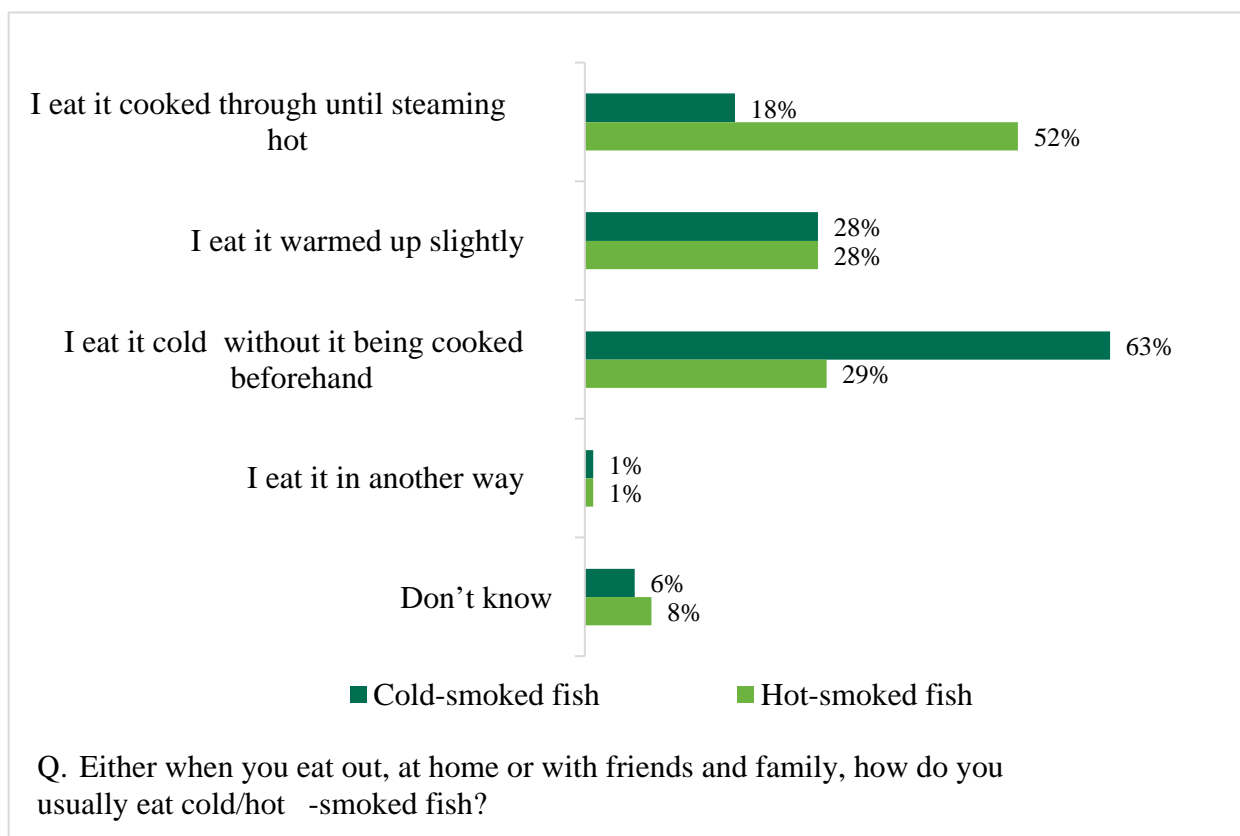
Base: All Adults aged 16 to 75 in UK (2,390 consented to the collection of their personal health related data)



While overall consumption patterns are similar, there are differences in the ways consumers report eating cold-smoked and hot-smoked fish. Cold-smoked fish is usually eaten cold by consumers, without being cooked through beforehand. Hot-smoked fish is usually eaten cooked through until steaming hot (see Figure 6).

Figure 6: Way of eating smoked fish

Base: All who eat cold-smoked fish (n=1,570) hot-smoked fish (n=1,504) at least once a year



When it comes to consuming cold-smoked fish, findings are generally consistent across the UK nations. However, Scottish consumers are more likely to report eating hot-smoked fish cold compared to consumers in the rest of the UK (38% vs 28%- see Table 9). There is a similar pattern among those who cook for vulnerable consumers, with most (68%) saying that they eat cold-smoked fish cold, and half (50%) eat hot-smoked fish cooked through until steaming hot.

Among vulnerable consumers, those with a weakened immune system are more likely to report consuming cold-smoked fish either cooked through until steaming hot (26% vs 18% overall) or warmed up slightly (37% vs 28% overall). Conversely, those aged 65-75 are more likely to consume cold-smoked fish cold compared to those with a weakened immune system and consumers overall (75% vs 55% of those with a weakened immune system and 63% of consumers overall). This is shown below in Table 10.

Table 8: Ways of eating cold-smoked fish by nation

Statement	Total (A)	EWNI (B)	Scotland (C)
I eat it cooked through until steaming hot	18%	18%	20%
I eat it warmed up slightly	28%	28%	29%
I eat it cold	63%	63%	66%
I eat it in another way	1%	1%	1%
Don't know	6%	6%	4%
Base	1570	1161	409

Base: All who eat cold-smoked fish at least once a year (1,570)

Table 9: Ways of eating hot-smoked fish by nation

Statement	Total (A)	EWNI (B)	Scotland (C)
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I eat it cooked through until steaming hot	52%	52%	52%
I eat it warmed up slightly	28%	28%	35%
I eat it cold	29%	28%	38% B
I eat it in another way	1%	1%	-
Don't know	8%	8%	1%
Base	1504	1109	395

Base: All who eat hot-smoked fish at least once a year (1,504)

Table 10: Ways of eating cold-smoked fish by vulnerable group

Statement	Total (A)	65 and overs (B)	Weakened immunity (C)	Any vulnerable group (D)
I eat it cooked through until steaming hot	18%	11%	26% ABD	20% B
I eat it warmed up slightly	28%	17%	37% ABD	29% B
I eat it cold	63%	75% CD	55%	63% C
I eat it in another way	1%	-	-	-
Don't know	6%	7%	3%	5%
Base	1570	109	220	398

Base: All who eat cold-smoked fish at least once a year (1,570)

Table 11: Ways of eating hot-smoked fish by vulnerable group

Statement	Total (A)	65 and overs (B)	Weakened immunity (C)	Any vulnerable group (D)
I eat it cooked through until steaming hot	52%	55%	55%	54%
I eat it warmed up slightly	28%	17%	32% B	27% B
I eat it cold	29%	32%	31%	31%
I eat it in another way	1%	-	-	-
Don't know	8%	8%	6%	7%
Base	1504	179	225	391

Base: All who eat hot-smoked fish at least once a year (1,504).

Response to risk communications and advice

Would consumers be receptive to cooking advice for RTE cold-smoked fish and RTE hot-smoked fish?

The following wording was included in the questionnaire to outline current government advice:

Listeria is a bacteria which can cause an illness called listeriosis from eating contaminated food.

While illness is rare, for people who do become ill, listeriosis mainly causes mild symptoms such as fever, vomiting and diarrhoea. However, in pregnant women and their unborn babies, people aged over 65, and people with weakened immune systems, it can cause serious illness and even death.

Listeria is widespread in the environment and can contaminate a wide range of food. It is most commonly found in chilled RTE foods that do not require further cooking or re-

heating, such as RTE smoked fish. However, *Listeria* can be destroyed by thorough cooking.

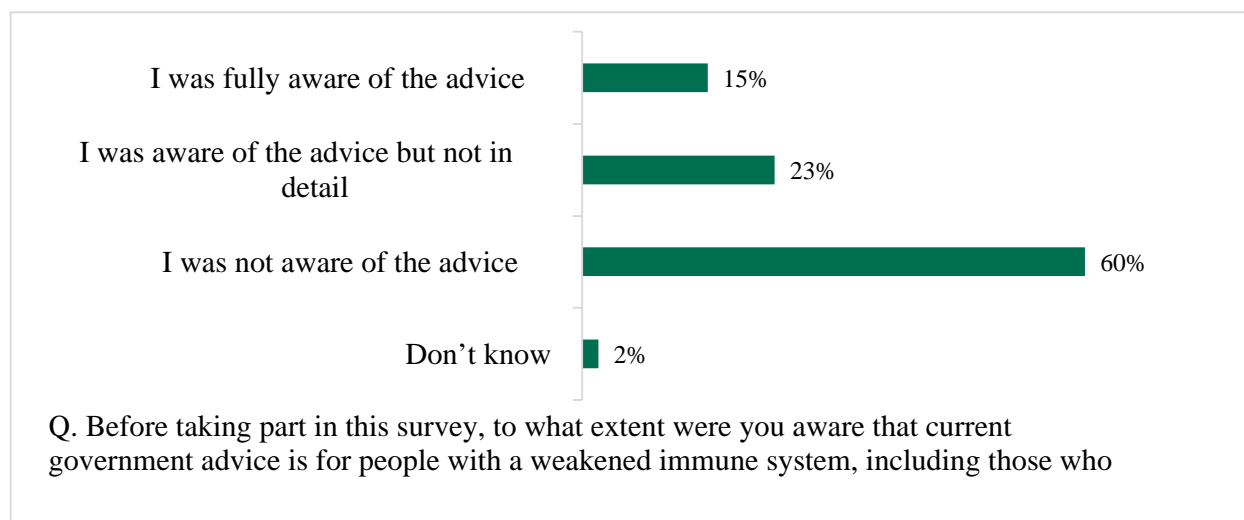
Current government advice is for people with a weakened immune system, including those who are pregnant or aged over 65, to thoroughly cook RTE smoked fish before eating it to avoid listeriosis.

As seen in Figure 7, awareness of the current government advice is low, with a minority of consumers being fully aware (15%) and most not aware (60%). Levels of awareness are consistent across the UK, with similar proportions reporting that they are not aware of the current government advice in Scotland (59%) and in the rest of the UK (60%).

When comparing across vulnerable consumers, older consumers aged 65-75 report the lowest level of awareness of government advice. This group is more likely than those with a weakened immune system to say that they were not aware of the advice (66% vs 57% of people with a weakened immune system). No significant differences were identified among those who reported cooking for a vulnerable consumer when compared with the overall sample.

Figure 7: Awareness of government advice for vulnerable consumers

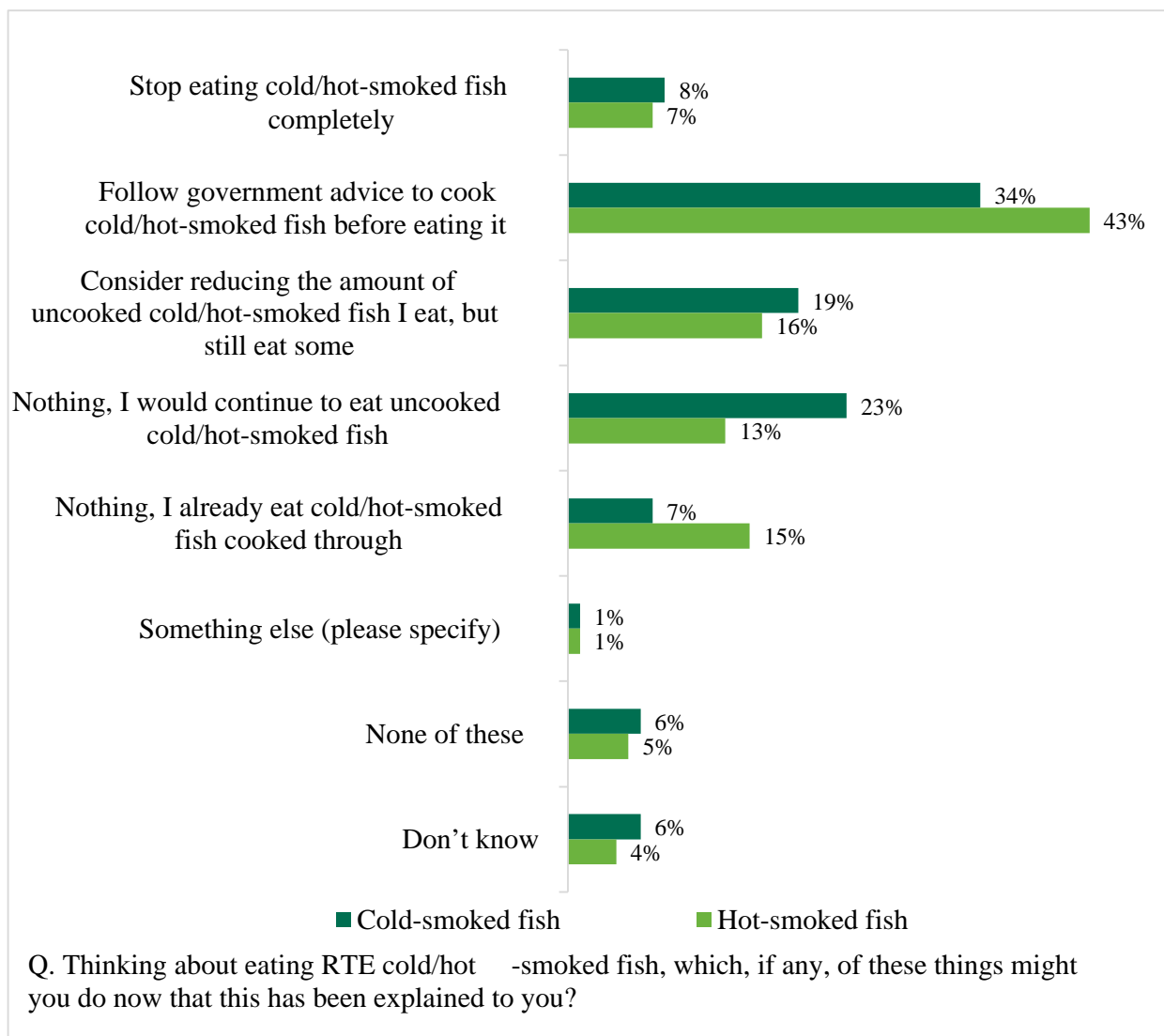
Base: All Adults aged 16-75 in UK (2,390 who consented to the collection of their personal health-related data).



Views are divided among vulnerable consumers who currently eat cold- and hot-smoked fish about whether they would follow government advice to thoroughly cook smoked fish before eating it. Overall, more say they would follow the advice for hot-smoked fish, reflecting consumer preferences for how to eat each type of product highlighted earlier (see Figure 8).

Figure 8: Likelihood to follow government advice

Base: All in vulnerable group who eat cold-smoked fish (398) or hot-smoked fish (391)



People with a weakened immune system who eat cold-smoked fish are more likely to say that they would either follow current government advice (40% vs 34% of vulnerable consumers who eat it overall) or consider reducing the amount of uncooked cold fish they eat (27% vs. 19%, see Table 12).

Similarly, people with a weakened immune system are also more likely to consider reducing the amount of uncooked hot-smoked fish they eat (22% vs 16% of vulnerable consumers who eat it overall). Vulnerable consumers aged 65-75 who eat smoked fish are more likely to say they would not follow government advice than vulnerable consumers who eat smoked fish overall. A third of this older group say that they would continue to eat uncooked cold-smoked fish (33% vs 23% for vulnerable consumers who eat this overall- see Table 12).

Notably, when it comes to hot-smoked fish, consumers aged 65-75 are more likely to say that they already eat it cooked through, therefore they won't change their behaviour as a result of being exposed to the advice (24% vs 15% for vulnerable consumers who eat it overall). This can be seen in Table 13 below.

There are no significant differences between UK nations or among people who cook for a vulnerable consumer to Listeria infection when it comes to the likelihood to follow government advice.

Table 12: Likelihood to follow government advice for cold-smoked fish by vulnerable group

Government advice statement	Total (A)	65 and overs (B)	Weakened immunity (C)	Any vulnerable group (D)
Stop eating cold-smoked fish completely	8%	7%	9%	8%
Follow government advice to cook cold-smoked fish before eating it	34%	26%	40% B	34% B
Consider reducing the amount of uncooked cold-smoked fish I eat, but still eat some	19%	11%	27% BD	19% B
Nothing, I would continue to eat uncooked cold-smoked fish	23%	33% CD	15%	23% C
Nothing, I already eat cold-smoked fish cooked through	7%	8%	6%	7%
Something else (please specify)	1%	-	1%	1%
None of these	6%	7%	3%	6%
Don't know	6%	8%	5%	6%
Base	398	192	220	398

Base: All in vulnerable group who eat cold-smoked fish (398).

Table 13: Likelihood to follow government advice for hot-smoked fish by vulnerable group

Government advice statement	Total (A)	65 and overs (B)	Weakened immunity (C)	Any vulnerable group (D)
Stop eating hot-smoked fish completely	7%	5%	9%	7%
Follow government advice to cook hot-smoked fish before eating it	43%	39%	47%	43%
Consider reducing the amount of uncooked hot-smoked fish I eat, but still eat some	16%	8%	22% BD	16% B
Nothing, I would continue to eat uncooked hot-smoked fish	13%	16%	9%	13%
Nothing, I already eat hot-smoked fish cooked through	15%	24% CD	9%	15% C
Something else (please specify)	1%	-	1%	1%
None of these	5%	6%	4%	5%
Don't know	4%	5%	4%	4%
Base	391	179	225	391

Base: All in vulnerable group who eat hot-smoked fish (391).

Reasons for not following government advice

For cold-smoked fish, the most common reasons given by vulnerable consumers who say they would not follow the advice are:

- they have always eaten cold-smoked fish without cooking it and haven't had any problems (48%)
- they prefer cold-smoked fish uncooked (28%)
- they think it's already cooked through the smoking process (25%); and
- they don't think they are at risk by eating cold-smoked fish without cooking (23%).

For hot-smoked fish, the most common reasons among vulnerable consumers who say that they would not follow the advice are:

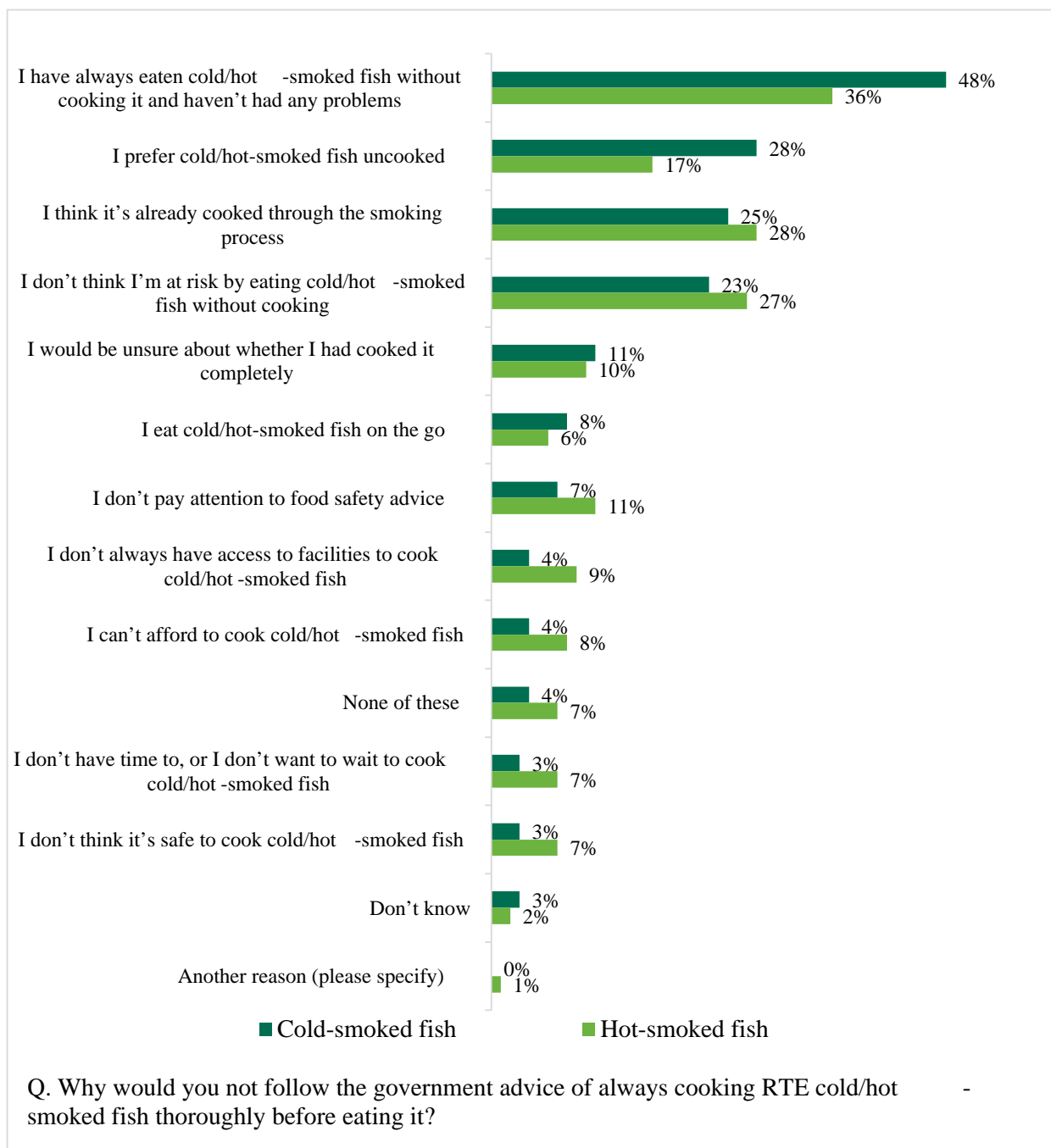
- they have always eaten hot-smoked fish without cooking it and haven't had any problems (36%)
- they think it's already cooked through the smoking process (28%) and
- they don't think they're at risk by eating hot-smoked fish without cooking (27%).

A smaller proportion of those who would not follow the advice prefer hot-smoked fish uncooked (17%) compared with those prefer cold-smoked fish uncooked (28%).

Given the small sample bases of vulnerable consumers across nations, determining statistically significant differences across these groups was not possible;. Therefore, significant differences are not reported in this section.

Figure 9: Reasons for not following government advice

Base: All in vulnerable groups who eat cold-smoked fish (186) or hot-smoked fish (122) and will continue to eat it uncooked.



Knowledge of risk for vulnerable consumers and likelihood to follow government advice

Previous knowledge of government advice appears to make some difference to the likelihood to follow the advice when it comes to consuming cold-smoked fish. Among those vulnerable consumers who eat cold-smoked fish and were previously fully aware of the government advice, more than four in ten say they would follow it (44%), while among those who were aware but not in detail, 35% say they would follow the advice. On the other hand, among those vulnerable consumers who eat cold-smoked fish that were not previously aware of the government advice, fewer say they would follow it (30%).

The pattern is not the same for hot-smoked fish. Among vulnerable consumers who eat hot-smoked fish and were previously fully aware of the government advice, 42% say they would follow it, while among those who were partially aware 39% say they would follow the advice.

Conversely, among vulnerable consumers who eat hot-smoked fish but who were not previously aware of the government advice, 47% say they would follow it.

It is important to note that consumption preferences, and other determinants of behaviour, could also influence people's receptiveness to adopting the advice. As previously highlighted in the report, there is a general preference for consuming cold-smoked fish uncooked or cold and hot-smoked fish cooked through until steaming hot. Previous knowledge of government advice will not be the only factor influencing people's openness to the advice.