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EPA Fish Focus

Group Final Report

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Prepared for

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1. Executive Summary

Objective: The United States (U.S.) Environmental Protection Agency (EPA) developed a set of images to convey fish parts that should and should not be eaten to reduce possible exposure to contaminants. The objective of the work described in this report was to pretest the images with the primary audiences before being shared with entities that develop fish consumption advisories and/or otherwise communicate this type of information to the public. Pretesting occurred to ensure these images were understood as intended.

Methods: Three series of focus groups were conducted to test the images across 21 total languages/cultures. These focus groups provided a platform for participants to share their experiences and provide feedback about their fish consumption habits, the images, and the most appropriate messaging used within the images. This report covers the results of the third series of focus groups, which included 16 languages/cultures (note that 17 focus groups were held, however, two of them were for English-speaking Native American audiences).* By conducting focus groups in multiple languages, the EPA was able to test and gain an understanding of which image was preferable across a diverse audience by identifying underlying themes and patterns.

Results: The results for the third series of focus groups varied regarding fish consumption habits, the fish image, and the most appropriate messaging used within the images.

- Fish consumption habits: Focus groups consistently identified fish fillet and steak as safe to eat. However, it was also common for focus groups to identify organs, head, skin, and fat as safe to eat before seeing that the fish image highlights that these parts are often unsafe due to higher chemical contamination.
- Fish image: The focus groups preferred the fish images that included a QR code leading to a website with additional information. Focus groups also provided feedback regarding the font readability, colors, and overall understanding of the image.
- Messaging: Each language/culture had unique feedback regarding the messaging used, further described in the results and conclusions of this report.

The results for the first and second series of focus groups are available in **Appendices S-U**.

Next Steps: The EPA has incorporated feedback from each focus group into revised fish image translations for each respective language/culture. The wording for each language/culture used in the final images is unique to that language/culture due to the diverse feedback received from each focus group. This report and the final images will be posted on the EPA website for use by entities that develop fish consumption advisories and/or otherwise communicate this type of information to the public. For example, state agencies are one potential audience that may use these images when developing fish consumption advisories.

The EPA will post fish image translations on its website for these 21 languages and cultures:

- | | | |
|------------------------|---------------------------------------|-----------------|
| 1. Amharic | 8. English (Native American audience) | 15. Polish |
| 2. Arabic* | 9. French* | 16. Portuguese |
| 3. Bengali | 10. Haitian Creole | 17. Russian* |
| 4. Cambodian | 11. Hmong | 18. Spanish |
| 5. Cantonese | 12. Japanese | 19. Tagalog |
| 6. Chinese (Mandarin)* | 13. Korean | 20. Thai |
| 7. English | 14. Laotian | 21. Vietnamese* |

*Note that the Arabic, Chinese (Mandarin), French, Russian, and Vietnamese-speaking focus group results are not discussed or presented in this report since these were conducted during Phases 1 and 2.

2. Introduction

The United States (U.S.) Environmental Protection Agency (EPA) developed a set of images to convey fish parts that should and should not be eaten to reduce possible exposure to contaminants. The final images will be made publicly available on the EPA's website for others to use when developing fish consumption advisories.

Images needed to be pretested with the primary audiences (i.e., individuals who cook and eat the fish they catch or individuals who receive or buy locally caught fish from others to eat) before they are shared with the public to ensure these images are understood as intended. Three series of focus groups were conducted to test the images across 21 total languages or cultures. These focus groups provided a platform for participants to share their experiences and provide feedback on the images, allowing for a nuanced, in-depth understanding of their perceptions and preferences. By conducting focus groups in multiple languages, the EPA was able to test and gain an understanding of which image was preferable across a diverse audience through identifying underlying themes and patterns.

The first series of focus groups were conducted to test the images with English, Spanish, and Vietnamese speakers, and a report was developed that described the outcomes of that effort (**Appendix U**). The images were then revised using the feedback from focus group participants.

The second series of focus groups were conducted to test the revised images with English, Spanish, Vietnamese, Russian, Chinese (Mandarin), Arabic, Tagalog, and French speakers in August, October, and November of 2022 and January and June of 2023. The images were again revised using feedback from these focus groups and a second report was prepared with these results (**Appendices S-T**).

The third series of focus groups were conducted with Cambodian, Korean, Hmong, Cantonese, Haitian Creole, Laotian, Portuguese, Bengali, Japanese, Thai, Polish, Amharic, and Spanish speakers, and three focus groups were conducted with English speakers, from January through August of 2024. Of these three English-speaking focus groups, two consisted of Native Americans. None of the participants in the third English-speaking focus group identified as Native American. Throughout the report, the two Native American focus groups are referred to as "Native American English-speaking" and the third focus group is referred to as only "English-speaking." The results and conclusions of the third series of focus groups are detailed in **Section 3** and **Section 4** of this report.

Hindi and Gujarati were originally going to be tested in this third series of focus groups; however, participant recruitment revealed that Hindi was primarily only used in spoken language for religious purposes and both Hindi- and Gujarati-speaking individuals were primarily vegetarian. For this reason, the Hindi and Gujarati focus groups were cancelled, and Tagalog and Spanish from the second series of focus groups were retested. Tagalog and Spanish were selected as the languages to retest based on U.S. Census numbers and translation complexity.

2.1. Participant Eligibility

Participants were eligible for the focus groups if their primary language matched the language in the fish images and they reported catching fish to share with others, buying locally caught fish to eat, or preparing fish for themselves or others to eat. The participant screener in English is provided in **Appendix A**.

2.2. Participant Recruitment and Screening

Focus group participants were recruited by Ebony Marketing Systems (EMS). EMS recruiters used their database to call potential participants to complete the recruitment process. Participants who were eligible and interested were invited to participate.

2.3. Focus Group Discussion Guide Development

A semi-structured discussion guide was developed to test (1) images with and without a QR code, evaluating which of them was preferred by the participants, and (2) images with different language options to assess the participants' comprehension and receptivity, e.g., what participants think of the phrases "research has found" vs. "studies have found" when describing the level of contamination that some fish parts may have. The guide included a combination of quantitative data collection (i.e., Zoom polls) and qualitative follow-up discussion initiated by the focus group moderator. The focus group discussion guide in English is provided in **Appendix A**. ICF's Institutional Review Board (IRB) reviewed the project's design and materials and determined the activities conducted during the focus groups were Not Human Subjects Research (NHSR).

2.4. Data Collection

The focus groups were conducted virtually via Zoom from January through August of 2024. Participants were able to see each other and the moderator. The moderator used the screen share feature to show the fish images. These images are provided in the Discussion Guide in **Appendix A**. Each focus group lasted approximately 60 minutes.

2.5. Analysis

EMS collected opinions during the focus groups on a matrix organized by image and image comparisons. Results from Zoom polls were imported into the matrix and matched with the qualitative follow-up discussion for each image. Responses were further segmented by topic to organize and summarize the data, noting patterns and trends. ICF used this summary, the poll data, and the focus groups' transcripts to develop this report.

3. Results

3.1. Presurvey – Participant Characteristics

All participants were asked to complete a presurvey by phone about their fishing, fish-eating, fish-preparation, and shopping habits. Their demographic, pregnancy status or plans, primary language, and parenting or child caretaking status were also collected. The participants' names were blinded using letters, and information in parentheses denoted in which focus group they participated. For example: Participant A (Korean) was part of the Korean-speaking focus group and Participant B (Cambodian) was part of the Cambodian-speaking focus group.

Table 1 and **Table 2** below summarize the participants' demographic background. The researchers aimed for an even male-to-female ratio. Participants identified themselves as Ahmara, African American, Alaskan Natives, Asian, Bangladeshi, Bengali, Black/African American, Black-American, Brazilian, Brazilian (Black), Caucasian, Caucasian-Hispanic, Ethiopian, Hispanic, Mexican, Native/American Indian, and White. Participants ranged from 18 to 76 years of age. Fifty-two participants took care of children under age 11, seven were pregnant, and 27 planned to become pregnant in 2024. The focus groups also had differences in education and income. Twenty-four participants' highest level of education was a high school diploma or completed General Education Development (GED) and the overwhelming majority had some college education or held a four-year degree or advanced degree. The Bengali- and English-speaking groups reported the highest education levels, with all participants holding a four-year college degree. Moreover, all participants except two individuals from the Cantonese-speaking group reported an annual income above \$20,000 across focus groups.

Table 1. Participant Characteristics (Part 1)

Question	Korean Participants (n = 7)	Cambodian Participants (n = 6)	Hmong Participants (n = 9)	Native American 1 Participants (n = 8)	Native American 2 Participants (n = 7)	Cantonese Participants (n = 10)	Haitian Creole Participants (n = 6)	Thai Participants (n = 8)
Eat Fish								
Yes	7 (100%)	6 (100%)	9 (100%)	8 (100%)	7 (100%)	10 (100%)	6 (100%)	8 (100%)
No	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Catch Fish to Eat or Share								
Yes	7 (100%)	4 (67%)	9 (100%)	7 (88%)	6 (86%)	8 (80%)	3 (50%)	2 (25%)
No	0 (0%)	2 (33%)	0 (0%)	1 (12%)	1 (14%)	2 (20%)	3 (50%)	6 (75%)
Buy Locally Caught Fish								
Yes	7 (100%)	6 (100%)	9 (100%)	7 (88%)	7 (100%)	10 (100%)	6 (100%)	8 (100%)
No	0 (0%)	0 (0%)	0 (0%)	1 (12%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Prepare Fish								
Yes	7 (100%)	4 (67%)	9 (100%)	5 (63%)	6 (86%)	10 (100%)	6 (100%)	3 (37%)
No	0 (0%)	2 (33%)	0 (0%)	3 (37%)	1 (14%)	0 (0%)	0 (0%)	5 (63%)
Age								
Average	47	49	39	30	35	43	37	55
Range	31 - 64	34 - 60	31 - 71	18 - 53	26 - 46	23 - 55	28 - 53	36 - 76
Parent, Guardian. OR Caretaker of Child <11 yrs.								
Yes	2 (29%)	1 (17%)	3 (33%)	2 (25%)	1 (14%)	5 (50%)	3 (50%)	0 (0%)
No	5 (71%)	5 (83%)	6 (67%)	6 (75%)	6 (86%)	5 (50%)	3 (50%)	8 (100%)
Pregnant								
Yes	1 (14%)	0 (0%)	2 (22%)	0 (0%)	0 (0%)	2 (20%)	1 (17%)	0 (0%)
No	6 (86%)	6 (100%)	7 (78%)	8 (100%)	7 (100%)	8 (80%)	2 (33%)	8 (100%)
Not Applicable	0 (0%)	0 (%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (50%)	0 (0%)
Planning for Pregnancy within 1 yr.								
Yes	1 (14%)	1 (17%)	2 (22%)	1 (12%)	0 (0%)	2 (20%)	1 (17%)	1 (12%)
No	2 (29%)	5 (83%)	7 (78%)	7 (88%)	7 (100%)	8 (80%)	1 (17%)	7 (88%)
Not Applicable	4 (57%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (67%)	0 (0%)
Gender								
Male	3 (43%)	3 (50%)	2 (22%)	6 (75%)	4 (57%)	4 (40%)	3 (50%)	2 (25%)
Female	4 (57%)	3 (50%)	7 (78%)	2 (25%)	3 (43%)	6 (60%)	3 (50%)	6 (75%)

Question	Korean Participants (n = 7)	Cambodian Participants (n = 6)	Hmong Participants (n = 9)	Native American 1 Participants (n = 8)	Native American 2 Participants (n = 7)	Cantonese Participants (n = 10)	Haitian Creole Participants (n = 6)	Thai Participants (n = 8)
Ethnicity								
Hispanic/Latino	0 (0%)	0 (0%)	0 (0%)	1 (12%)	2 (29%)	0 (0%)	0 (0%)	0 (0%)
Not Hispanic/Latino	7 (100%)	6 (100%)	9 (100%)	7 (88%)	5 (71%)	10 (100%)	6 (100%)	8 (100%)
Race								
Alaskan Natives	0 (0%)	0 (0%)	0 (0%)	1 (12.5%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Asian	7 (100%)	6 (100%)	9 (100%)	0 (0%)	0 (0%)	10 (100%)	0 (0%)	0 (0%)
Black/African American	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	6 (100%)	8 (100%)
Native/American Indian	0 (0%)	0 (0%)	0 (0%)	7 (87.5%)	7 (100%)	0 (0%)	0 (0%)	0 (0%)
Marital Status								
Married	6 (86%)	3 (50%)	7 (78%)	2 (25%)	2 (29%)	5 (50%)	1 (17%)	6 (76%)
Divorced	0 (0%)	0 (0%)	0 (0%)	1 (12%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Single	1 (14%)	1 (17%)	1 (11%)	5 (63%)	4 (57%)	5 (50%)	2 (33%)	1 (12%)
Single but living with a partner	0 (0%)	2 (33%)	1 (11%)	0 (0%)	1 (14%)	0 (0%)	3 (50%)	0 (0%)
Widowed	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (12%)
Language Most Comfortable Speaking								
English	0 (0%)	0 (0%)	0 (0%)	8 (100%)	7 (100%)	0 (0%)	0 (0%)	0 (0%)
Korean	7 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
(Cambodian) Khmer, English	0 (0%)	6 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Hmong	0 (0%)	0 (0%)	3 (33%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Hmong and English	0 (0%)	0 (0%)	6 (67%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Chinese/Cantonese	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	10 (100%)	0 (0%)	0 (0%)
English/Haitian Creole	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (50%)	0 (0%)
Haitian Creole	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (50%)	0 (0%)
Thai	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	8 (100%)
Highest Level of Education								
Some high school	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
High School or GED	0 (0%)	1 (17%)	0 (0%)	5 (63%)	1 (14%)	0 (0%)	1 (17%)	0 (0%)
Some College	2 (29%)	1 (17%)	4 (44%)	1 (12%)	3 (43%)	5 (50%)	3 (50%)	4 (50%)
Four-Year College Degree or More	5 (71%)	4 (67%)	5 (56%)	2 (25%)	3 (43%)	5 (50%)	2 (33%)	4 (50%)

Question	Korean Participants (n = 7)	Cambodian Participants (n = 6)	Hmong Participants (n = 9)	Native American 1 Participants (n = 8)	Native American 2 Participants (n = 7)	Cantonese Participants (n = 10)	Haitian Creole Participants (n = 6)	Thai Participants (n = 8)
Total Annual Household Income								
Under \$20,000 per year	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2(20%)	0 (0%)	0 (0%)
\$20,000 - \$44,999 per year	0 (0%)	2 (33%)	0 (0%)	3 (38%)	0 (0%)	0 (0%)	1 (17%)	1 (12%)
\$45,000 - \$74,999 per year	5 (71%)	1 (17%)	2 (22%)	1 (12%)	5 (71%)	5 (50%)	4 (67%)	0 (0%)
\$50,000 or more per year	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (38%)
\$75,000 or more per year	2(29%)	2 (33%)	3 (33%)	2 (25%)	2 (29%)	1 (10%)	1 (17%)	3 (38%)
\$100,000 or more per year	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (12%)
N/A	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Prefer not to answer	0 (0%)	1 (17%)	4 (45%)	2 (25%)	0 (0%)	2 (20%)	0 (0%)	0 (0%)

Table 2. Participant Characteristics (Part 2)

Question	Bengali Participants (n = 8)	Amharic Participants (n = 6)	Polish Participants (n = 10)	Japanese Participants (n = 10)	Portuguese Participants (n = 9)	Laotian Participants (n = 6)	Tagalog Participants (n = 10)	Spanish Participants (n = 10)	English Participants (n = 7)
Eat Fish									
Yes	8 (100%)	6 (100%)	9 (100%)	10 (100%)	9 (100%)	6 (100%)	10 (100%)	10 (100%)	7 (100%)
No	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Catch Fish to Eat or Share									
Yes	5 (63%)	5 (83%)	5 (56%)	7 (70%)	6 (67%)	5 (83%)	5 (50%)	6 (60%)	4 (57%)
No	3 (37%)	1 (17%)	4 (44%)	3 (30%)	3 (33%)	1 (17%)	5 (50%)	4 (40%)	3 (43%)
Buy Locally Caught Fish									
Yes	8 (100%)	6 (100%)	7 (78%)	10 (100%)	7 (72%)	5 (83%)	9 (90%)	8 (80%)	6 (86%)
No	0 (0%)	0 (0%)	2 (22%)	0 (0%)	2 (22%)	1 (17%)	1 (10%)	2 (20%)	1 (14%)
Prepare Fish									
Yes	8 (100%)	6 (100%)	5 (56%)	7 (70%)	6 (67%)	6 (100%)	7 (70%)	8 (80%)	4 (57%)
No	0 (0%)	0 (0%)	4 (44%)	3 (30%)	3 (33%)	0 (0%)	3 (30%)	2 (20%)	3 (43%)
Age									
Average	39	38	46	53	39	54	39	27	41
Range	27 - 45	29 - 55	36 - 61	38 - 74	27-58	39 – 70	19 - 68	18 - 39	30 - 51
Parent, Guardian. OR Caretaker of Child <11 yrs.									
Yes	5 (63%)	4 (67%)	4 (44%)	3 (30%)	3 (33%)	2 (33%)	6 (60%)	6 (60%)	2 (29%)
No	3 (37%)	2 (33%)	5 (56%)	7 (70%)	6 (67%)	4 (67%)	4 (40%)	4 (40%)	5 (71%)
Pregnant									
Yes	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (14%)
No	4 (50%)	4 (67%)	5 (56%)	7 (70%)	9 (100%)	6 (100%)	10 (100%)	10 (100%)	6 (86%)
Not Applicable	4 (50%)	2 (33%)	4 (44%)	3 (30%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Planning for Pregnancy within 1 yr.									
Yes	2 (25%)	2 (34%)	3 (33%)	1 (10%)	3 (33%)	1 (17%)	2 (20%)	2 (20%)	2 (29%)
No	2 (25%)	2 (33%)	2 (22%)	6 (60%)	6 (67%)	5 (83%)	8 (80%)	8 (80%)	5 (71%)
Not Applicable	4 (50%)	2 (33%)	4 (44%)	3 (30%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Gender									
Male	4 (50%)	3 (50%)	4 (44%)	3 (30%)	1 (11%)	4 (67%)	3 (30%)	3 (30%)	5 (71%)
Female	4 (50%)	3 (50%)	5 (56%)	7 (70%)	8 (89%)	2 (33%)	7 (70%)	7 (70%)	2 (29%)

Question	Bengali Participants (n = 8)	Amharic Participants (n = 6)	Polish Participants (n = 10)	Japanese Participants (n = 10)	Portuguese Participants (n = 9)	Laotian Participants (n = 6)	Tagalog Participants (n = 10)	Spanish Participants (n = 10)	English Participants (n = 7)
Ethnicity									
Hispanic or Latino/a	0 (0%)	0 (0%)	0 (0%)	0 (0%)	8 (89%)	0 (0%)	0 (0%)	10 (100%)	1 (14%)
Not Hispanic or Latino/a	8 (100%)	6 (100%)	9 (100%)	10 (100%)	1 (11%)	6 (100%)	10 (100%)	0 (0%)	6 (86%)
Race									
African American	0 (0%)	4 (66%)	0 (0%)	1 (10%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Ahmara	0 (0%)	1 (17%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Asian	0 (0%)	0 (0%)	0 (0%)	9 (90%)	0 (0%)	6 (100%)	10 (100%)	0 (0%)	0 (0%)
Bangladeshi	1 (12%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Bengali	7 (88%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Black-American	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (29%)
Brazilian	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7 (78%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Brazilian (Black)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (11%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Caucasian	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (43%)
Caucasian-Hispanic	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (14%)
Ethiopian	0 (0%)	1 (17%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Hispanic	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	10 (100%)	1 (14%)
Mexican	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (11%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
White	0 (0%)	0 (0%)	9 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Marital Status									
Married	7 (88%)	3 (50%)	8 (89%)	7 (70%)	3 (33%)	6 (100%)	7 (70%)	4 (40%)	5 (71%)
Divorced	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Single	1 (12%)	3 (50%)	1 (11%)	3 (30%)	6 (67%)	0 (0%)	3 (30%)	6 (60%)	2 (29%)
Single but living with a partner	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Widowed	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

Question	Bengali Participants (n = 8)	Amharic Participants (n = 6)	Polish Participants (n = 10)	Japanese Participants (n = 10)	Portuguese Participants (n = 9)	Laotian Participants (n = 6)	Tagalog Participants (n = 10)	Spanish Participants (n = 10)	English Participants (n = 7)
Language Most Comfortable Speaking									
Bengali and English	5 (63%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Bengali, English, and Hindi	3 (37%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Amharic	0 (0%)	3 (50%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Amharic and English	0 (0%)	3 (50%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
English	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7 (100%)
Polish	0 (0%)	0 (0%)	7 (78%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Polish and English	0 (0%)	0 (0%)	2 (22%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Japanese	0 (0%)	0 (0%)	0 (0%)	1 (10%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Japanese and English	0 (0%)	0 (0%)	0 (0%)	9 (90%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Portuguese and English	0 (0%)	0 (0%)	0 (0%)	0 (0%)	9 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Laotian and English	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	6 (100%)	0 (0%)	0 (0%)	0 (0%)
Tagalog and English	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	10 (10%)	0 (0%)	0 (0%)
Spanish	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	5 (50%)	0 (0%)
Spanish and English	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	5 (50%)	0 (0%)
Highest Level of Education									
Some high school	0 (0%)	1 (17%)	0 (0%)	0 (0%)	0 (0%)	1 (17%)	0 (0%)	0 (0%)	0 (0%)
High School or GED	0 (0%)	1 (17%)	0 (0%)	2 (20%)	2 (22%)	0 (0%)	3 (30%)	8 (80%)	0 (0%)
Some College	0 (0%)	0 (0%)	2 (22%)	0 (0%)	2 (22%)	2 (33%)	1 (10%)	1 (10%)	0 (0%)
Four-Year College Degree or More	8 (100%)	4 (67%)	7 (78%)	8 (80%)	5 (56%)	3 (50%)	6 (60%)	1 (10%)	7 (100%)
Total Annual Household Income									
Under \$20,000 per year	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
\$20,000 - \$44,999 per year	0 (0%)	2 (33%)	0 (0%)	0 (0%)	3 (33%)	1 (17%)	2 (20%)	0 (0%)	1 (14%)
\$45,000 - \$74,999 per year	3 (37%)	3 (50%)	3 (33%)	1 (10%)	1 (11%)	0 (0%)	0 (0%)	4 (40%)	0 (0%)
\$50,000 or more per year	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
\$75,000 or more per year	5 (63%)	1 (17%)	5 (56%)	3 (30%)	3 (33%)	4 (67%)	2 (20%)	0 (0%)	5 (71%)
\$100,000 or more per year	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
N/A	0 (0%)	0 (0%)	0 (0%)	1 (10%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Prefer not to answer	0 (0%)	0 (0%)	1 (11%)	5 (50%)	2 (22%)	1 (17%)	6 (60%)	6 (60%)	1 (14%)

3.2. Presurvey – Fish Consumption Habits

All focus group participants reported eating fish, and 126 of 136 participants reported buying or receiving locally caught fish to eat. Additionally, 29 of 136 participants said they do not prepare (i.e., clean, gut, skin, or fillet) fish before eating it, and 42 of 136 participants said they do not catch fish to eat or share with others.

3.3. Survey

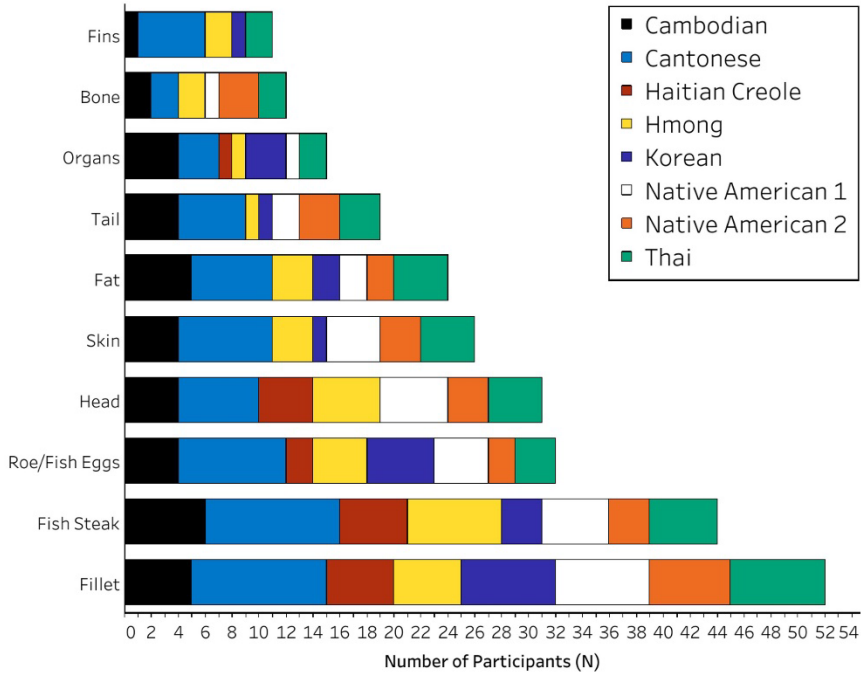
The focus group participants were asked to answer a series of survey questions. A full list, including questions asked via Zoom poll and follow-up questions asked by the moderator, are provided in the Discussion Guide in English in **Appendix A**. Quotations captured from the focus groups, as participants responded to the questions, are presented in **Appendices B-R**.

Poll #1: Which part of the fish do you eat?

Before seeing the images, participants were asked to indicate which fish parts they eat by selecting options from a poll. The poll #1 results are shown below in **Figure 1** and relevant quotations related to this poll are provided below in **Table 3**.

Participants reported that the fish parts they ate most often were fillet, fish steak, and roe/fish eggs. Native American English-, Cantonese-, Bengali-, Amharic-, Polish-, Portuguese-, Tagalog-, and English-speaking participants did not have comments in this poll, and therefore quotes from these groups are not included in **Table 3**. Overall, few participants had seen fish consumption safety information previously.

A. Part 1



B. Part 2

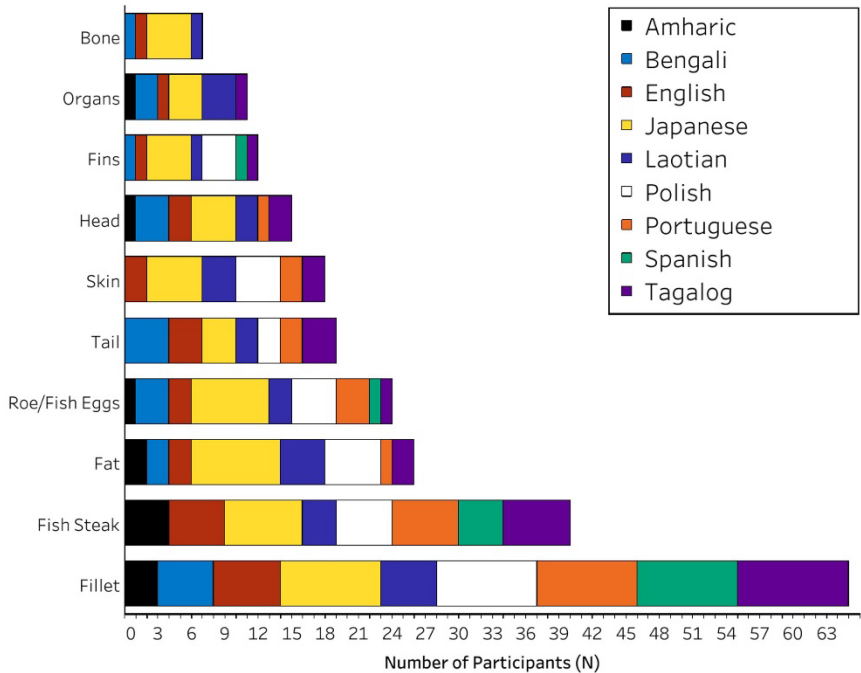


Figure 1. Results from Poll #1 (A. Part 1, B. Part 2): Which part of the fish do you eat? (Multiple answers per participant allowed.) An interactive version is available on the Tableau website.

Table 3. ICF identified the following quotations as relevant to Poll #1

Focus Group	Participant ^a and Quote
Korean	Participant D: “Yes. I have seen an article in the Korean American community, and I have seen it once in the newspaper. [...] I think I may have heard it at a hearing, perhaps at the City Hall or some type of governmental related location. I currently live in California, and following the Fukushima incident, via various routes, far away and in California. I have come across information that included other information as well.”
Hmong	Participant J: “When I was working at Ob clinic, we have instructions for the patients that talk about how to eat fish and how to protect the baby.”
Cambodian	Participant E: “I never heard or seen any information about this. I just know from my mother that she taught me to cook, and I also know from my family members, but I have never heard this kind of information before.”
Cambodian	Participant F: “For me, I grew up in a big village near the ocean. There was a family that found blowfish. I do not know which parts they ate. The whole family, mother, and children died after eating it. When I was young, I just knew that fish is poisonous, and nowadays in the modern times, they have more information about which part of the fish is safe and unsafe to eat. I just know that if the fish cooks well, it will not be dangerous to eat.”
Haitian Creole	Participant F: “[What part of a fish to eat is] something we naturally know; it’s not written anywhere.”
Thai	Participant A: “Okay, I’ve never seen them put up announcements like that. But I choose [what parts of fish to eat] myself...”
Laotian	<p>Participant A: “Tails are not edible. That’s my favorite [the fish eggs]. That’s my favorite part.”</p> <p>Participant C: “Lao people eat all parts. Whether it is fins or stomach, we eat all of them... I eat the meat. Meats and tails are able to be deep fried. My wife’s sibling has a restaurant. Whatever [type of fish, if] they are deep fried, I eat them all.”</p> <p>Participant E: “The fish head is the best one. At our home, children are not allowed to eat, but adults can eat. It is edible. Its eyes are good.”</p> <p>Participant F: “Only the fish meat and flesh. We’ll throw away the entrails part. The one you eat...”</p>
Spanish	<p>Participant B: “[My doctor] only told me that fillet or fish in general is good for lowering cholesterol.”</p> <p>Participant H: “Only as a fillet.”</p>

^a The participants’ names were blinded using letters and only a selection of key quotes is presented in this table, and therefore, does not necessarily reflect the opinions of all participants.

Poll #2: Which parts of fish are safe to eat?

Participants were asked to select which parts of the fish they thought were safe to eat by selecting them using a poll before seeing the fish images. The poll #2 results are shown below in **Figure 2** and relevant quotations related to this poll are provided below in **Table 4**.

All focus groups had at least half of participants indicate that fillet and steak were safe to eat. While an overwhelming majority of participants across all focus groups indicated that fillet is safe to eat, half or slightly over half of participants from the Amharic- and Bengali-speaking focus groups indicated that fillet is safe to eat. Similarly, an overwhelming majority of participants across all focus groups indicated that steak is safe to eat. However, half or slightly over half of participants from the Bengali-, Korean-, Laotian-, Spanish-, and Thai-speaking focus groups thought that steak is safe to eat. The rest of this section contains discussion of the focus group opinions regarding the other parts of the fish (organs, skin, head, fat, bones, tail, fins, fish roe/eggs).

Nine focus groups leaned towards consensus regarding the other parts of the fish (organs, skin, head, fat, bones, tail, fins, fish roe/eggs) being safe to eat. Those groups are bulleted below and minority opinions within those focus groups are included as sub-bullets:

- **Native American (Groups 1 and 2), Cantonese, Polish, Cambodian, Bengali, Portuguese, Tagalog, English**
 - All of the Native American English-speaking (Group 1) participants indicated roe/fish eggs were safe to eat, and over half of them thought that the head was safe to eat. Additionally, over half of the Native American English-speaking (Group 1) participants said that the skin, fat, and tail were safe to eat.
 - Only one Native American English-speaking (Group 2) participant indicated that fins and organs were safe to eat, and a few Native American English-speaking (Group 1) participants indicated that the organs were safe to eat. Native American English-speaking (Group 2) participants did not have comments in this poll, and therefore quotes from this group are not included in **Table 4**.
 - All Cantonese-speaking participants thought that roe/fish eggs were safe to eat.
 - Under half of the Cantonese participants indicated that the fins, organs, bones, and tail were safe to eat. Cantonese-speaking participants did not have comments in this poll, and therefore quotes from this group are not included in **Table 4**.
 - An overwhelming majority of Polish-speaking participants indicated that fat, fins, skin, and roe/fish eggs were safe to eat.

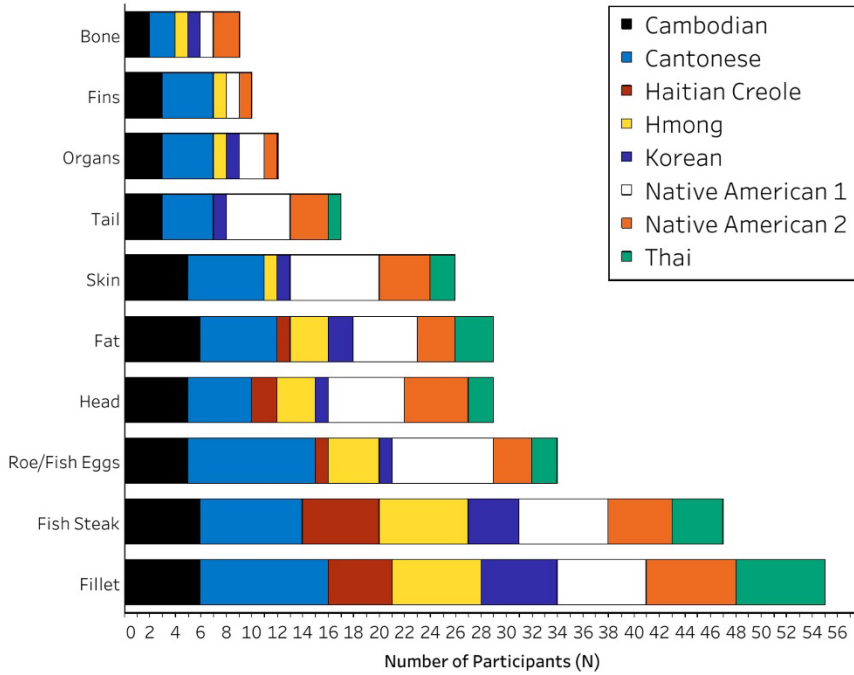
- An overwhelming majority of the Cambodian-speaking participants indicated that the skin, head, eggs, and fat were safe to eat. Additionally, Cambodian-speaking participants indicated some fish eggs are poisonous.
 - One Cambodian-speaking participant indicated they did not know what is safe, so different fish parts are consumed, because they rely on them for subsistence.
- An overwhelming majority of Bengali-speaking participants thought that roe/fish eggs were safe to eat.
- Few Bengali-speaking participants indicated that fat, skin, tail, bones, organs, and fins were safe to eat. Bengali-speaking participants did not have comments in this poll, and therefore quotes from this group are not included in **Table 4**.
- An overwhelming majority of Portuguese-speaking participants indicated that roe/fish eggs were safe to eat.
 - Under half of the Portuguese-speaking participants thought that head was safe to eat, and a few Portuguese-speaking participants indicated that fat, skin, and bones were safe to eat.
- An overwhelming majority of Tagalog-speaking participants thought that fat was safe to eat, and over half of Tagalog-speaking participants indicated that skin was safe to eat.
 - Half of Tagalog-speaking participants thought that head and roe were safe to eat, and under half of Tagalog-speaking participants indicated that tails were safe to eat.
 - Few Tagalog-speaking participants thought that fins and organs were safe to eat. Tagalog-speaking participants did not have comments in this poll, and therefore quotes from this group are not included in **Table 4**.
- An overwhelming majority of English-speaking participants indicated that fat and roe/fish eggs were safe to eat.
 - Over half of English-speaking participants thought that head and skin were safe to eat.
 - Under half of English-speaking participants thought that fins and tails were safe to eat, and few English-speaking participants thought that bones or organs were safe to eat. English-speaking participants did not have comments in this poll, and therefore quotes from this group are not included in **Table 4**.

Eight focus groups did not have consensus opinions regarding the other parts of the fish (organs, skin, head, fat, bones, tail, fins, fish roe/eggs) being safe to eat. Those groups are bulleted below:

➤ **Amharic, Japanese, Korean, Hmong, Haitian Creole, Thai, Laotian, Spanish**

- Few Amharic-speaking participants indicated that head and roe/fish eggs were safe to eat.
- Few Japanese-speaking participants indicated that bones, fins, tails, and organs were safe to eat.
- One Korean-speaking participant thought that the tail, bones, organs, skin, head, and eggs were safe to eat. Korean-speaking participants did not have comments in this poll, and therefore quotes from this group are not included in **Table 4**.
- One Hmong-speaking participant thought that the fins, bones, organs, and skin were safe to eat. Another Hmong-speaking participant indicated that Americans may avoid the fish head and the tail, but people from other cultures eat them and think most of the fish is edible.
- A single Haitian Creole-speaking participant thought that fat and roe/fish eggs were safe to eat. Haitian Creole-speaking participants did not have comments in this poll, and therefore quotes from this group are not included in **Table 4**.
- A single Thai-speaking participant thought the tail was safe to eat and under half of participants thought the fat, head, skin, and roe were safe to eat. Thai-speaking participants did not have comments in this poll, and therefore quotes from this group are not included in **Table 4**.
- Under half of Laotian-speaking participants indicated that roe/fish eggs were safe to eat, and few Laotian-speaking participants indicated that fat, fins, head, skin, tails, bones, and organs were safe to eat.
- Under half of Spanish-speaking participants thought that fat was safe to eat, and few Spanish-speaking participants thought that head, skin, and roe/fish eggs were safe to eat. Spanish-speaking participants did not have comments in this poll, and therefore quotes from this group are not included in **Table 4**.

A. Part 1



B. Part 2

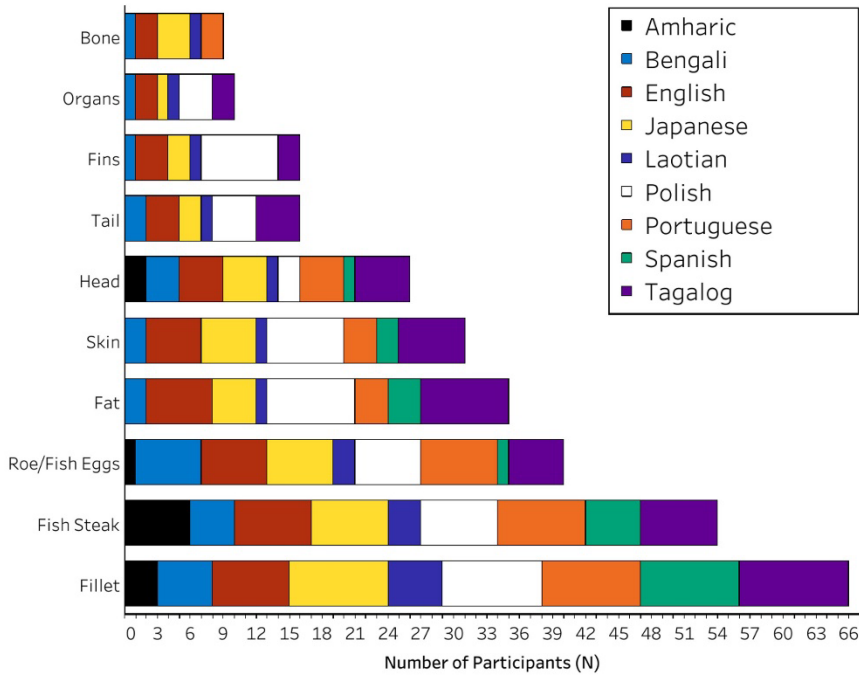


Figure 2. Results from Poll #2 (A. Part 1, B. Part 2): Which parts of fish are safe to eat? (Multiple answers per participant allowed.) An interactive version is available on the Tableau website.

Table 4. ICF identified the following quotations as relevant to Poll #2

Focus Group	Participant ^a and Quote
Hmong	<p>Participant A: "I'm seeing that the fish is split into parts that can be eaten or into parts that Americans may think it can't be eaten. Perhaps Americans see that it can't be eaten, but for Hmong people or in general other brown races, we think we can eat fish head and tail. Even though this image says otherwise, for us Hmong people, we can eat every part of the fish. So I think that is confusing. It doesn't quite meet the purpose because it is confusing. I don't know if other folks here agree or disagree. Which is why I agree that this image is not for Hmong people, but for Americans only. Sorry. Because for us Hmong people, we do eat all parts of the fish. We can boil, grill all parts of the fish except we don't eat the bones. There's even some fish where we do eat the bones."</p>
Cambodian	<p>Participant A: "In the ocean, the big Kompot fish have different species, some kinds are safe to eat, and some are not safe to eat. We know which one of them [is safe]." "I know for sure alligator gar that Cambodians call crocodile fish in America. This fish looks like a crocodile. Their eggs are poisonous to eat."</p> <p>Participant F: "We do not know what is safe for us to eat when we can find anything. We just eat because we have no choice, but now we study and learn more about the food that is safe and unsafe to eat like in Japan now we can study more."</p>
Native American Group 1	<p>Participant H: "I was told that information by my father."</p> <p>Participant B: "Well, I know there's different kinds of fish. For example, like the blow off fish, the one that blows up, that's the one that is very dangerous, because if you don't know how to cut this blow of fish, it has a lot of toxic that's very hazardous and it's poisonous. You could die if you don't cook it right."</p>
Amharic	<p>Participant C: "I have heard that eating the head is good." [on where they get information about fish from] "Forefathers [seniors]."</p> <p>Participant D: "I have heard that eating the head is good. If I can add, I heard about fish oil. [...] I saw it on Facebook post and my husband told me about it from what he learned."</p>
Polish	<p>Participant G: "I have an answer. In my city. I live in California. In San Francisco, in Alameda, a few times in San Francisco, and in my city, I've seen posters like this about which parts of fish and which fish are safe for pregnant women to eat."</p>

Focus Group	Participant ^a and Quote
Japanese	<p>Participant F: "The one that just came to my mind is the blowfish, but if you ask me where I saw or heard that, I don't know where, but somehow I was told that since I was a child, that blowfish is dangerous. Of course, if you cook it properly, it is safe, but I have been told since I was a child to be careful because it can be dangerous to eat."</p> <p>Participant I: "I heard it from a sushi restaurant, in the United States they stopped selling tresus keenae for a while. I love them, but when I asked for some, I was told, "Oh, they are gone now. I asked why, and was told that they were out. When I asked him why, he replied, "The FDA has taken care of some kind of bacteria or something in the clams, you know, the bacteria. When they did random inspections or whatever they did, all imports of mill clams were banned because they were detected, and so were red clams."</p> <p>Participant J: "Television, publications, magazine articles, etc. For example, I can't think of any particular part in particular, but for example, some of them contain mercury. I remember that there have been times when such things have been taken up as part of the environmental pollution theme."</p>
Portuguese	<p>Participant C: "When you say safe, is it because of contamination? Because, like, I think it's not safe to eat the bone because you might choke. Or the fin too, because it can choke. And something that can be bad for your heart. Things like that. Is it because of contamination or in another sense?"</p>
Laotian	<p>Participant C: "It depends on where we get the fish from. If the fish is from the fish farm pond, we will eat in a certain way. If the fish is from a natural source, we will eat it another way. As there's no right answer and we don't know where the fish is from, the farm-raised fish has chemicals."</p> <p>Participant E: "I eat all this part, but I throw away the head and entrails parts."</p>

^a The participants' names were blinded using letters and only a selection of key quotes is presented in this table, and therefore, does not necessarily reflect the opinions of all participants.

3.3.1. Images

During each focus group, participants were shown ten images and asked to complete Zoom polls to capture their preferences regarding the phrases on those images. Follow-up questions were asked by the moderator to gain an understanding of the rationale behind the participants' choices. The results per image or group of images are provided below.

3.3.1.1. Fish with QR Code vs. Fish without QR Code

Poll #3: How much do you agree or disagree with this statement? "This image is useful to me."

After seeing a fish image with a QR code, as well as one without a QR code, participants were asked whether they found it useful. The fish images are shown below in **Figure 3** and relevant quotations related to poll #3 are provided below in **Table 5**.

Twelve focus groups generally leaned towards **agreement** that the image is useful. Those groups are bulleted below with key commentary:

➤ **Haitian Creole, Korean, Hmong, Polish, Amharic, Thai, Cambodian, Portuguese, Laotian, Tagalog, Spanish, English**

- All Haitian Creole-speaking participants found the image to be useful.
 - One Haitian Creole-speaking participant wanted to know the health hazards of eating fish marked as throw away and suggested that this information be provided in some way.
 - Participants indicated that colors helped determine which parts of the fish were safe to eat.
 - One participant remarked that red, more so than green, demonstrates the fish parts individuals should avoid.
- All Spanish-speaking participants agreed that the image was useful.
 - Spanish-speaking participants indicated that the image taught them that some fish parts are healthier than others.
 - One Spanish-speaking participant remarked that the specific color for each section is useful.
- An overwhelming majority of the Korean-, Hmong, Polish-, Portuguese-, English-speaking participants agreed or strongly agreed that the image was useful to them.
 - The Korean- and Hmong-speaking participants indicated that the image would catch their attention, mentioning that the colors were eye-catching and provided clear messaging (i.e., what to eat vs. throw away).

- Although Polish participants thought highly of the image and that the information contained in the image is useful, they found the design of the image to be flawed. Several participants specifically pointed to the unappealing color scheme of the image. One participant even said that the image was “very basic and just unprofessional.”
- Portuguese-speaking participants agreed that information about the levels of contamination for different parts of the fish was new to them. However, some Portuguese-speaking participants indicated that the contamination argument was irrelevant since some parts of the fish are not consumed in their culture.
- One Portuguese-speaking participant thought that the image only pertained to large, whole fish. Another Portuguese-speaking participant indicated that the message is more of an opinion than a warning. Another Portuguese-speaking participant thought the image was informative but not aesthetically pleasing.
- Hmong-speaking participants said the text needed more spacing to make it easier to read and that the colors were hard to associate with parts of the fish. These participants suggested adding a chart to clarify the significance of each color.
- The Korean-speaking focus group thought the image was nice to see, that the colors were consistent, and the information was well presented. These participants suggested using brighter colors.
- An overwhelming majority of English-speaking participants agreed that the image was useful.
 - Several English-speaking participants indicated that the different colors make the diagram easier to understand.
 - Several English-speaking participants thought that the image revealed new information that they had not previously considered.
 - One English-speaking participant remarked that the categories are very clear.
 - Another English-speaking participant added that the separation of different fish parts in the diagram is helpful.
- An overwhelming majority of Tagalog-speaking participants agreed that the image was useful and thought the image highlighted the parts of the fish that are safe to consume.
 - Several Tagalog-speaking participants were surprised that skin and fat should be thrown out since Filipinos typically eat almost all parts of the fish.

- One Tagalog-speaking participant thought that brighter colors would be more captivating.
- Another Tagalog-speaking participant suggested that the image should indicate why certain fish parts should be thrown away.
- Over half of Amharic-speaking participants agreed that the image was useful.
 - Two participants thought the image clearly described the parts of the fish that are safe to eat, the parts that individuals should refrain from eating, and the parts that should be thrown away.
 - Another participant remarked that the fork and knife signs and the trash can are visible and even “grabbed my attention.”
 - However, some participants wondered whether the fish in the image represents all types of fish and not just bony fish.
 - Another participant said they eat fish with caution but do not believe in throwing away fish.
- Over half of the Laotian-speaking participants agreed that the image was useful.
 - Although Laotian-speaking participants thought that the information provided in the image was helpful, several participants emphasized some of the benefits that come with eating different parts of the fish.
 - One Laotian-speaking participant, who did not find the image useful, indicated that fish consumption practices often vary by generation and noted that older Laotians are more likely to eat all parts of the fish.
- Over half of the Thai-speaking participants agreed or strongly agreed that the image was useful, but the remainder of the participants neither agreed nor disagreed that the image was useful.
 - Participants noted that the color and text size of the image reduced its effectiveness.
 - Two participants suggested larger text size and brighter colors to make the image more legible and interesting, respectively. Participants suggested using traffic light colors (e.g., red, yellow, and green) to show which parts of the fish that are safe to eat.
 - Another participant noted that the image might not apply to every species of fish and stated that certain species of smaller fish are meant to be eaten whole.

- Half of the Cambodian-speaking participants agreed that the image was useful to them, indicating that they have to be careful with fish because of modern-day pollution.
 - A Cambodian-speaking participant said the overall challenge is to ensure the fish is clean enough before consumption for it to be safe.
 - Another Cambodian-speaking participant liked the image and thought the information was useful but indicated that the bones or the head are delicious and recalled the impression that Americans waste large amounts of food.
 - The Cambodian-speaking participants reflected on the information conveyed by the image and agreed in its importance given the high cost of healthcare in the United States.
 - They also indicated that the text below the fish images clearly conveys the message on fish parts consumption safety.
 - There were concerns about the letters being too small to read when written in Cambodian and the need for different colors for the fish parts. Cambodian-speaking participants suggested using green for safe parts, red for the parts that need to be thrown away, and yellow for the ones that should be avoided.

Five focus groups generally leaned towards **neither agreement nor disagreement** that the image is useful. Those groups are bulleted below with key commentary:

➤ **Native American English-speaking (Groups 1 and 2), Cantonese, Bengali, Japanese**

- The majority of the Native American English-speaking (Groups 1 and 2) focus group participants did not agree or disagree with the image. Over half of the Native American Group 1 focus group remarked on how the image could be viewed as misinformation or not necessarily correct in certain contexts. For example, situations where the fish parts labeled “to avoid” are still edible or when individuals have previously consumed the fish part without noticing adverse effects.
 - However, a few Native American English-speaking (Group 1) participants and the majority of Native American English-speaking (Group 2) participants agreed that the image is helpful in the educational context and is nicely labeled.
 - Native American English-speaking (Group 2) participants had varying opinions about the usefulness of the image.
 - Some Native American English-speaking (Group 2) participants found the image to be helpful, suggesting that the image should be advertised at a fish market, so individuals know what parts of the fish are safe to consume and what parts should be discarded.

- Other Native American English-speaking (Group 2) participants noted that the image was comprehensive, simple to understand, and sparked their interest. In contrast, one individual questioned the validity of the information, yet wanted to learn more about the image like other participants.
- Cantonese-speaking participants were equally divided on the usefulness of the image.
 - One individual remarked that the picture and wording is understandable.
 - However, some Cantonese respondents found the image to be confusing, noting that the color of the image lacks contrast and suggesting green, yellow, and red to indicate safe parts and parts to avoid.
 - One individual remarked that it is not clear whether the image is telling people not to eat fish or asking a question.
 - Another individual noted the issue of color-blindness and suggested adding patterns to identify different fish parts.
- Bengali-speaking participants were divided on the usefulness of the image.
 - One individual indicated that the classification and color-coding of the image was useful.
 - Another participant noted the importance of the image for pregnant women.
 - Some Bengali-speaking participants found the message to be unclear, with one participant noting that it failed to include a category for fats. Another individual felt scared by the picture, adding that the image showed the dangers of eating fish head, which this individual has done for years.
- Over half of Japanese-speaking participants neither agreed nor disagreed that the image was useful.
 - One Japanese-speaking participant thought the image suggested that too many fish parts, including some of the most delicious parts, should be thrown away. However, this participant also indicated that the contamination warning was useful.
 - Another Japanese-speaking participant stated that the graphic does not appropriately capture how Japanese people process and consume fish.
 - Only a few Japanese-speaking participants found the image to be useful with one participant reporting that the graphic was informative and easy to read.

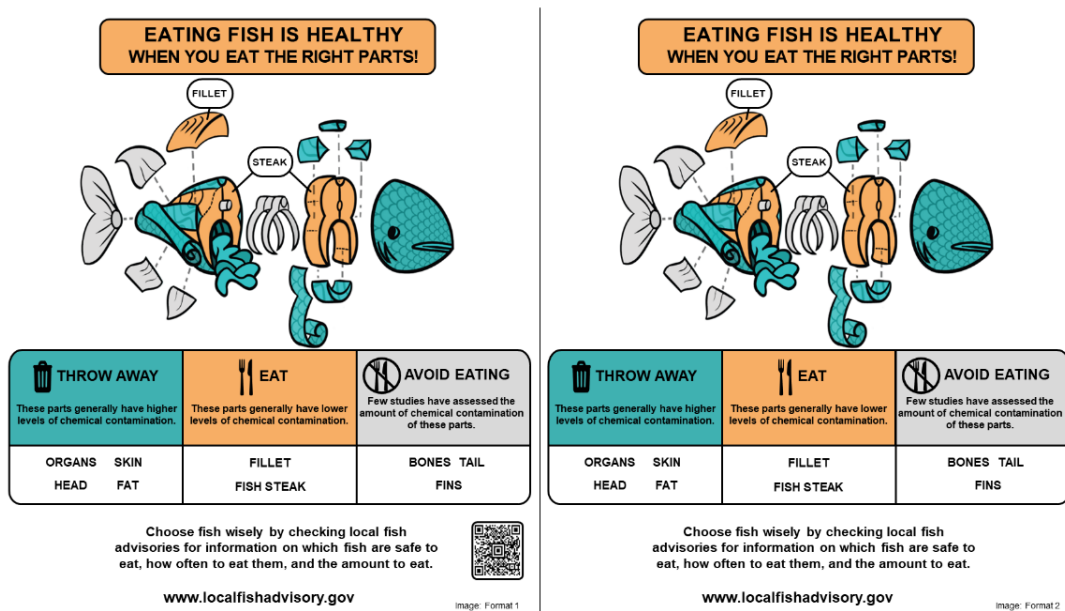


Figure 3. Fish images with and without QR code (left and right, respectively).

Table 5. ICF identified the following quotations as relevant to Poll #3

Focus Group	Participant ^a and Quote
Korean	Participant C: “Yes [...] It shows which part is safe to eat. It looks great [but] I wish it was a brighter color.” [the image could be improved if] Instead of “throw it away,” it says “avoid eating,” maybe.”
Hmong	Participant B: “The colors. Because the fish has three colors. Plus, the chart [...] tells you information of which parts to throw away, to eat or not eat, and the colors help you see that right away.”
Cambodian	Participant A: “I think before when we ate the natural fish, I did not have a lot of feelings, but nowadays freshwater fish and saltwater fish are not good because of pollution. So, we need to be careful when eating fish.” Participant E: “When I saw this image of fish, I remembered that if I ate according to what it said, I would have to throw away the head, skin, tail, and bones a lot. I also remember there is a saying that Americans waste so much food because I've only seen the video on the Japanese side, where he makes a fish, he has almost nothing left, and he reduces the waste. However, if we eat according to this image, there will be a lot of waste that we throw away and it is a lot.”

Focus Group	Participant ^a and Quote
Native American Group 1	<p>Participant E: “[I]f this is really being used as an educational piece to teach people what they can eat and what they can’t, I do notice that it’s very nicely color coded. Like the parts of the fish that are throw-away are the same, that blue color, what it’s saying is safe to eat is orange, and what they’re saying to avoid eating is that gray color. So if this is just meant for educational purposes despite whatever we think, it is very clear to get what information is trying to get out by being able to let you visually see what is what.”</p> <p>Participant H: “[The image is] a little misinformation. I’m not saying all of it is incorrect, but with avoid eating it’s still in the category of you can eat but you can choose to throw that away” ... “I definitely [think it should] say ‘avoid eating, but it’s still edible.’”</p>
Native American Group 2	<p>Participant D: “The way it looks like a pie chart is breaking down, what’s good, and what’s bad to eat.”</p> <p>Participant E: “Looking at [the] image, I was intrigued. I had to keep looking at it to get the real insight. They have [you learn] that, okay, this is the part that you have to throw away, this is the part that you have to consume. It’s [a] comprehensive image that is going to intrigue someone to learn more, to know about it more.”</p>
Cantonese	<p>Participant C: “[The image] is too confusing [...] first the orange is part, is it a question or a statement? It sounds like a question to me. And then the parts that correspond on top are confusing on what part it is. They should point to the part they are talking about.”</p> <p>Participant J: “About 1% of the male population are color blind and about 1% of the women population are color blind as well. So [as] we rely on color, [they] should also add patterns to identify [the parts of the fish].”</p>
Haitian Creole	<p>Participant C: “Anyway, it’s good information because when you’re managing your health. ... [Knowing what to throw-away is] really necessary, but if you eat the parts marked in blue, what can it cause to your health?”</p> <p>Participant E: “Yes, I would change the colors [...]when you think about the green color you wouldn’t associate it with something that you should avoid. It’s something you shouldn’t do. And with the red color, you know to take precautions not to use that.”</p>
Thai	<p>Participant E: “And what is clearly seen is the graphic image that is the component of the fish. But if it’s the letters or the details below. If it were bigger, it might draw more attention. Or the colors that make it more refreshing, something like this. Or let the subject look interesting, this one looks like a fish, the color is a little faded, and that is to make it bigger or clearer and tell us what we’re looking at. By doing so, it would clearly convey what we’re looking at and why.”</p>

Focus Group	Participant ^a and Quote
Bengali	<p>Participant A: “Yes [the visual is useful because it is] pictorial, pictorial is always better I think. the classification is correct, I mean it’s color-wise coded like that. [...] There may be no health benefits like the skin or fat. [There were] certain parts to avoid like in the head mercury levels were high when I was pregnant, I was told not to take more than a certain level of mercury.”</p> <p>Participant D: “It didn’t attract me because I was scared when I saw it. I have been eating fish head for so long, my mother told me to eat fish head, am I going to die now? I didn't know that. The picture was very good, I mean very clear, but now I'm very afraid of what I did wrong all these years.”</p> <p>Participant H: “I have a little problem reading Bengali because I am not used to it. [...] I want to say that I think the diagram of the fish is not very clear because the bones you are showing are the ribs, that should have been shown a little more clearly - an outline of the fish. And that's how we are showing it. I mean by enlarging the fish parts here because those things and looking like specially the skin area and the fat area. If I have to tell just based on the picture, the parts needed to be clear and there should have been a category for fats.”</p>
Amharic	<p>Participant B: “Yes, it is clear that it is presented in picture, [even] for people who have never eaten fish, for example, as it outlines which part is eaten, which part is not eaten very well, no doubt it is useful as it is clear for everyone.” “...what is used here, I think, is one type of fish... there are other types, for example, boneless fish, how are they seen or treated?”</p> <p>Participant C: “It gives information very well, I have seen three things in it: It tells us what parts of a fish are edible, and second, it tells us the parts of a fish that should not be eaten, the parts we have to refrain from eating, because their different chemical pollution level is high as studies show there is a part that it displays that, and again the third, parts that should be completely thrown away.”</p> <p>Participant D: “There is the trash can or the eat and avoid eating, the fork and knife signs at the bottom... those are clear and visible. They grabbed my attention... and the way the parts of the fish are expressed, although I don’t know each part’s names, I say, the image attracted my attention.”</p>
Polish	<p>Participant A: “I can say that it is useful to me. Because I learned new things that I didn't know. I don't know what fish steak are (dzwonek/dzwonko in Polish), but I agree with the predecessor that the graphic design is poor. Besides, I don't like how the ones in that top two-line line. Table text is borderless.”</p> <p>Participant E: “I can be the first to say that in general it seems to me that there is a lot of information and it is useful, but in general, the drawing, colors and how it is presented, I do not like it at all and it is not very attractive.” “Yes, I agree with everything, it's badly presented, badly done, yes, it looks very basic and just unprofessional.”</p>

Focus Group	Participant ^a and Quote
Japanese	<p data-bbox="448 279 1414 407">Participant C: "I think it's easy to read. That's why. I mean, either you throw it away or you can eat it. So, I think it's a little bit of an equilibrium, and I think we're going to learn a lot, and we're going to be careful and we're going to be able to have fish accordingly." So, I am very reassured to see this graph."</p> <p data-bbox="448 443 1414 600">Participant G: "I thought that you don't eat like a book. For example, the underbelly under the part of the steak, If you look at the top here, the top of the steak, it's broken down into three parts, but we don't process and eat it like this. So when you say it's kind of like this, it's a little bit off to me; maybe this part is where the fat may be.... I don't really see it this way."</p> <p data-bbox="448 636 1414 953">Participant J: "At first glance, I felt that you were throwing away the most delicious part. I feel like the organs, the skin, the head, the fat, oh no, that's where it's good. And generally, you can eat all of them, if you want to, depending on how you cook them. So I was thinking, like, isn't that a little too much wasting, really? I mean, it's kind of a waste. Then now, after all I come to think, after the second and third times I looked at it, I saw that the key word was "chemical contamination level," so I had to take that into consideration. If we take into account the fact that toxic substances tend to accumulate in this area, is there a slight difference? I am beginning to wonder if there is a beneficial difference."</p>

Focus Group	Participant ^a and Quote
Portuguese	<p>Participant C: "I have, for me that question comes back to my previous question, why would I discard bone, tail and fin regardless of someone telling me that there is contamination, because I think the problem, even if there was no contamination, is different. You can't eat bone, tail and fin, it's not even edible, you can't digest it, it's not tasty. And it's not safe either. It's not safe in this sense of swallowing and such. And about what is disposable, like, a lot of people eat skin, a lot of people eat heads, a lot of people eat fat, so, I would think a lot more about questioning whether this information is real or not, why avoid consuming bones, tails and fin, because you think so, for reasons of biochemistry, contamination."</p> <p>Participant E: "[it is useful] to know in terms of what to avoid consuming, because naturally I thought it was okay, I knew that some things should be discarded and others should be avoided. As for the levels, I didn't know, this is still new to me, the contamination levels."</p> <p>Participant E: "Ok. How much does that go for all types of fish? I think it's a matter of logic." "It's very clear. Okay. I just think it's not like that visually, in terms of aesthetics, I don't think it's the most attractive image. Okay. It's very informative."</p> <p>Participant F: "I think it's relevant, but I would only think about this fish if it were a really whole, big fish. If it were another type of fish, I wouldn't even consider this image. We eat raw astyanax fish in Paraná, from the water, understand?"</p> <p>Participant I: "But, [Participant E], if you pay attention, they're saying on the chemical side, it's the fish that come from the polluted sea, practically, right? And if it's that fresh river with pure water, this chemical contamination isn't as much there in the fish. Maybe it's more of a point of view, right?"</p>
Laotian	<p>Participant C: "Mostly, it's about generation. I am 50 years old, and everybody here might be in the same range, the elders. Our kids might not eat the head part, but I still eat it as my parents taught me so, and I'm used to it. For the head part, if you don't know, it might be stuck in your throat. If we're wealthy, we will only buy the meat part to eat. But just like [Participant E] mentioned earlier, it is reasonable. Fish oil is good for your bones. Entrails have a lot of proteins if you make it clean first, but there's no right or wrong. They showed us the standard principle, which part to keep or which part to throw away. But for me, I eat them all. I only don't eat bones. If it's Bluegill, I eat the bones."</p> <p>Participant F: "What they show us is helpful. We know which part is edible and which part is not. Everybody is different, everybody has different tastes. What [other participants have claimed] is right, some people do not throw away anything; they eat everything. The information provided is good. They shared what should be eaten and what shouldn't."</p>

Focus Group	Participant ^a and Quote
Tagalog	<p>Participant A: "As [Participant B] mentioned, I didn't know before that not all fish skin is safe to eat. It seems that not all fish skins can be consumed, depending on the type of fish. This information is very helpful to me."</p> <p>Participant B: "For me, this is surprising since most people eat fish skin. As Filipinos, we often eat fish with the skin on, but these images suggest that the skin should be discarded."</p> <p>Participant D: "If the colors were brighter, it would catch more attention."</p> <p>Participant E: "I liked the diagram because it makes it relatively easy to determine what should be eaten and what shouldn't be eaten."</p> <p>Participant F: "It is useful because, first and foremost, I didn't know that the fat needs to be discarded. This information highlights which parts should be eaten and which are not advisable to consume."</p> <p>Participant G: "The perception is that as Filipinos, we eat almost all parts of the fish, so the fat is a favorite among Filipinos. That's why I was surprised that it actually needs to be thrown away."</p> <p>Participant G: "What I would say is that what's missing from the picture is the reason why it needs to be thrown away. I didn't read, or maybe the reason why it should be avoided or not eaten wasn't included."</p>
Spanish	<p>Participant F: "We haven't seen it, just as they are putting it here. The good parts, I haven't seen it [...] because let's say I've seen like videos pretty much of how it's cleaned or how fish is made [...] but not like this specifically or as the image is showing it."</p> <p>Participant H: "Maybe the image shows different parts of the fish that we didn't know they had, or that they can be eaten or that they can't be eaten."</p> <p>Participant H: "[I like] that each section corresponds to the color of the information."</p> <p>Participant J: "The image is communicating] which [part] is healthier. And which [part] to avoid."</p>

Focus Group	Participant ^a and Quote
English	<p>Participant B: "I think the color has already said so much about the image here. So, from the color specifications, we can clearly see what the image is saying."</p> <p>Participant C: "The image clearly stated parts of the fish that can be highly contaminated with chemical and that really drove down some information that I really didn't think about previously."</p> <p>Participant D: "I think the color coating is helpful. That you have the green or whatever color that is for throwaway, the orange for eat and the gray for avoid. I think that helps make it very clear and understandable diagram."</p> <p>Participant E: "Oh, I think it's very clear. I like the categories. Throw away, eat, avoid eating, and it's very clear on the bottom."</p> <p>Participant F: "Yeah, I was little surprised about the head, like in the fish, this is the most sacred part of the fish is the cheeks. Cheeks is part of the head, then I know a lot of people who eat it."</p> <p>Participant G: "I like how it's spread out so that you can out, it's labeled very clearly in the fish, and it's spread out into different parts rather than having the fish all as one piece. This one has it kind of spread out and it's easy to follow the chart."</p>

^a The participants' names were blinded using letters and only a selection of key quotes is presented in this table, and therefore, does not necessarily reflect the opinions of all participants.

3.3.1.2. Image – Final Preference

The participants were shown the images with and without a QR code, side by side. The preferred image before reviewing the language option is shown below in **Figure 4** and relevant quotations related to determining the final image preference are provided below in **Table 6**.

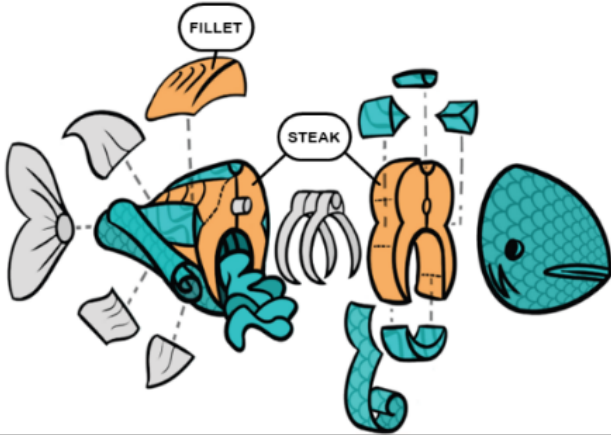
Generally, across focus groups, an overwhelming majority of participants preferred the image with the QR code, as it provided faster access to additional information from anywhere. Key pieces of feedback collected from participants are bulleted below:

- Cambodian-speaking participants indicated that spacing edits were needed for the image with QR code to make it easier to see.
- A Native American English-speaking (NA1) participant indicated that the QR code would translate well for the newer generations.
- Cantonese participants remarked on the conveniency and added information offered from the image with the QR code.
- Haitian Creole-speaking participants remarked that the QR code is useful; however, a couple participants indicated they did not notice the QR code. The Haitian Creole-speaking participants agreed that there should be a note for people to scan for more information.
- A Thai-speaking participant indicated that the image with the QR code is more modern and can be linked to social media.
- A Bengali-speaking participant remarked that the QR code and image may be redundant and suggested enlarging the picture and removing the QR code.
- Amharic-speaking participants thought the image with the QR code was useful. One Amharic-speaking participant remarked that the information was useful even if the source of the information is not known. Another Amharic-speaking participant thought that the QR code indicates the fish has passed government safety standards.
- Several Polish-speaking participants indicated that the image with the QR code was useful.
- One Polish-speaking participant remarked that having the QR code in their browser history is particularly helpful since they can go back and easily revisit the information provided in the code. Another participant indicated that they are cautious about unknown QR codes, however, they would trust this QR code since it is part of this image.
- An overwhelming majority of Japanese-speaking participants preferred the image with the QR code. One Japanese-speaking participant thought the QR code made them think more carefully about fish consumption. In contrast, one Japanese-speaking participant

was uncertain about the contents of the QR code and indicated they would never scan it.

- Even though over half of Portuguese-speaking participants voted for the image with the QR code, Portuguese-speaking participants did not think the QR code contained any additional information about fish consumption that was not already communicated in the image.
- Laotian-speaking participants were split over the inclusion of the QR code in the image. Laotian-speaking participants did not think the QR code provided any additional information. One Laotian-speaking participant indicated that they did not know how to use the QR code.
- Although all Tagalog-speaking participants selected the image with the QR code, participants agreed that the presence of the QR code did not change the value of the information contained within the image. One Tagalog-speaking participant thought that the QR code is more likely to catch people's attention and save them time with easier access to information. Another Tagalog-speaking participant indicated that the image does not appear trustworthy without the QR code.
- Although the overwhelming majority of Spanish-speaking participants voted for the image with the QR code, Spanish-speaking participants thought the QR code did not contain any additional information that was not already in the image. However, one Spanish-speaking participant added that they found more information with the QR code. Another Spanish-speaking participant indicated that the QR code may provide additional information about the content of the image.
- Although an overwhelming majority of English-speaking participants selected the image with the QR code, participants had mixed opinions about the value of the QR code. Several English-speaking participants indicated that the image does not need both the QR code and the website link. One English-speaking participant added that some people might see the QR code first. Another English-speaking participant indicated that the QR code gives them the ability to do their own research as a consumer and is easier to access than the website. Another English-speaking participant added that the use of the QR code depends on one's age.

**EATING FISH IS HEALTHY
WHEN YOU EAT THE RIGHT PARTS!**



 THROW AWAY These parts tend to have higher levels of chemical contamination.	 EAT These parts tend to have lower levels of chemical contamination.	 AVOID EATING Few studies have assessed the amount of chemical contamination of these parts.
ORGANS SKIN HEAD FAT	FILLET FISH STEAK	BONES TAIL FINS

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.

www.localfishadvisory.gov



Image: Language 1

Figure 4. Preferred image before reviewing the language options.

Table 6. ICF identified the following quotations as relevant in determining final image preference

Focus Group	Participant ^a and Quote
Hmong	Participant H: [Referring to adding QR code and if it changes the meaning of the image] “Yes it does, because QR code is more modern and more used. Folks who are young will probably see the QR code first with their phone camera before viewing the image. Young people would likely use their phone to use the QR code and would probably more attracted to that.”
Korean	Participant G: “I think I would trust it more.”
Cambodian	Participant D: “I can see this image without the QR code looks more balanced than with QR code. But like everyone said QR code is used everywhere now so having the QR code is good. I want to say that I tried to scan the QR code in this image.”
Native American Group 1	Participant E: “[The image] still has the website at the bottom, so I still feel like I could go and see what species of fish is more safe to eat, but maybe with the newer generation, the QR code would be nicer just because people like to put their phones at stuff. But overall, I still feel like I can get further information.”
Native American Group 2	Participant D: “[The QR code is] very useful. It's like a shortcut. People on the go [can scan] with your phone on the go.” “They can put it in Spanish too.”
Cantonese	Participant A: “I noticed the QR code, but there are a lot of things with QR codes. If someone wants to save the picture, they can take a picture and get info from the QR code. I would choose the one with [the] QR code. If I want more information, I would just scan the QR code, so the picture doesn't need to have that much (text) next to it.”
Haitian Creole	Participant B: “And when I see other flyers and posters like that and they have QR codes in them, in front of the QR code, next to the QR code, they always say, ‘scan this for more information.’ So, if I saw the QR code with that note to scan for more information, it would do something more for me, you understand ?” Participant F: “[...] the [QR] code plays a role if we have it. Like when we have a website, like if we put information like if people need that information, they can just take the QR code, take their phone, scan it, and get the information. But without the [QR] code, they won't get the information.”
Thai	Participant A: “QR code is the best channel [to spread information].” Participant E: “... you can link [the QR code] to social media more with the QR code.”
Bengali	Participant B: “I don't think the actual image with the picture is for general awareness because there is no detail in the picture. Anyone who wants to get the details can go to the website and see it with the QR code. It doesn't make a difference. If I am really serious I will also check the website, but can also check the QR code. Two pieces of information may be redundant. Instead, the picture can be enlarged a bit more without the QR code.”

Focus Group	Participant ^a and Quote
Amharic	<p>Participant C: "I think, what gets a QR code is one that passes that safety standards and has been approved by the operator government agency, and I don't think that the fish that doesn't have a QR code could be taken to the market... and it seems to me that the QR code carries a message that would mean the fish is qualified for market in terms of health and environment."</p> <p>Participant E: "It gives detailed information... for example, the diagram puts it generally... first, there is no time limit ..in the details through a QR code, however, it could be specified when to eat and, as fish types are varied, the website gives us details about the fish that are found in the area, and having the QR code is useful, even we don't know who gave us this information. I think it changes the meaning of the image."</p>
Polish	<p>Participant A: "I agree that QR code, helps, especially that if I typed it into my phone I would have it in the history in the browser and I could go back to it, but I would not scan some stranger code on a street pole." "For me, it is very important that there is a dot. Gov means that the source of this information is supposedly a government institution. For me, it is, it increases the value of this whole leaflet."</p> <p>Participant B: "I think it's a bit all the same, but if this code is supposed to lead to some extended information, it's better if it is there than if it doesn't exist, although recently I've read about being careful how to scan a QR code, because they can be fake and lead to various strange links. So I, for example, probably wouldn't have scanned a completely random code. But if it is here and it is supposed to be useful to someone that's good."</p>
Japanese	<p>Participant E: "I've been thinking about how I have been. I think that the way we look at fish as a meal will be a little more careful after all. I think I'm going to be a little more careful about how safe fish is next to the QR code, because I'm not sure how safe it is. I have been eating it, but how should I eat it? It says to choose wisely, so I guess. I thought that people would be reminded of the fact that they used to eat food without thinking about it, but now they need to be a little more careful, and they would check the QR code to find out what it is."</p> <p>Participant J: "Personally, unless it's something really bad, I just, if there's a quick picture like this and there's a QR code on it, I would never scan it, because I don't know what's in it. In the sense that even if there were, they would ignore it anyway, so it would be the same as if there were no such thing, because I'll ignore it."</p>
Portuguese	<p>Participant H: "It's a bit of that, because the information with QR code or not, the consumption information, being healthy is still there."</p>
Laotian	<p>Participant C: "If we scan this principle, there will be a document. They will show what is edible and what is prohibited. That's what I think. Having QR code and no QR code might be one has a document and the other doesn't."</p> <p>Participant F: "QR code is what we scan and it will show this picture or this information. I don't really know that it can be scanned. I don't know how to use it."</p>

Focus Group	Participant ^a and Quote
Tagalog	<p>Participant D: “When I read the words, they caught my attention. When I look at the picture, my eyes are drawn to what should be discarded and what should be eaten. It gives me direction and information that I can use when eating fish, so it's okay with me to have just the words because they are easy to understand.”</p> <p>Participant G: “What I noticed is that without a QR code, it might not be as noticeable or as likely to catch attention. Nowadays, everything involves technology, so when people see information, there's often a QR code because the current generation is used to that. Without a QR code, it takes more time to read everything instead of just scanning it with a phone.”</p> <p>Participant I: “For me, it doesn't look legit without a QR code, so someone who sees this might think it's not effective, almost like it's just a joke.”</p> <p>Participant I: “[The image] changed in terms of the impression it gives me. Information-wise, it's the same, but the impact is different.”</p>
Spanish	<p>Participant D: “[I prefer the image with the QR code] because we found more information.”</p> <p>Participant F: “Yes, [...] most use the QR code. I wouldn't really use the code because I'm already reading what it has, let's say what's important in the information, I wouldn't take out my phone and be, why am I going to put the code if the information is already there... All the information is basically on the poster, so I don't need to take out the phone to put the code anymore. Not anymore.”</p> <p>Participant H: “There is a QR code [...] maybe it's to provide more information about the image and the content of the image.”</p>

Focus Group	Participant ^a and Quote
English	<p>Participant A: "I think, yeah, you could probably get, it's probably just going to take you directly to the website, but I think this is going to be more of an age-related thing because depending on your age you may be more likely to just hit that QR code."</p> <p>Participant B: "I think if it's still the same information, I wouldn't think it's necessary to have the QR code and the website here as well. Okay. It's just like I'm saying you discarded the QR code just to redirect it to the same website. So if the websites going to be here then the QR code doesn't need to be here so you don't need to provide [both]."</p> <p>Participant C: "Well, I really don't think we should have this or that. I am okay with the two of them there... I would personally go for the QR code, I wouldn't see the website link. I'll just go straight for the QR code. Some people might just be techy and that's what will catch their eye easier like that."</p> <p>Participant E: "What does the QR code provide? [...] I would feel more confident if there was a QR code because I would like to do my own research as a consumer." "I think [removing the QR code is] misleading because if I want more information I would like to scan the QR code and see what it would give me. [...] I would feel more confident if there was a QR code because I would like to do my own research as a consumer."</p> <p>Participant E: "I would say I prefer [the QR code] because we get so much information on a daily basis that I'm not going to physically go in and type into my phone. there's so many QR codes that I deal with, I just scan and go directly to the website. It makes it easier for me, more accessible, I just scan and click."</p> <p>Participant F: "I don't see what it brings to the image or without QR code. The picture is for me is the same and there is the same explanation of what to eat and what to throw or what to avoid in a fish."</p>

^a The participants' names were blinded using letters and only a selection of key quotes is presented in this table, and therefore, does not necessarily reflect the opinions of all participants.

3.3.2. Language

3.3.2.1. Comparison of Wording – Parts tend to have vs. generally have

Poll #4: Which wording do you like better? "tend to have" or "generally have"

Participants were shown two options for wording, “These parts tend to have...” and “These parts generally have...,” so they could choose which they preferred and elaborate on why. See **Figure 5** below for the entire phrasing options. The poll #4 results are shown below in **Figure 6** and relevant quotations related to this poll are provided below in **Table 7**.

Eleven focus groups generally favored the “generally have” option. Those groups are bulleted below with key commentary:

- **Cambodian, Haitian Creole, Korean, Cantonese, Native American English (Groups 1 and 2), Thai, Japanese, Amharic, Tagalog, Spanish**
 - All Cambodian- and Haitian Creole-speaking participants and an overwhelming majority of Korean-, Cantonese-, Tagalog-, and Spanish-speaking participants, preferred the “generally have” language because it was clearer and easier to understand.
 - One Cantonese participant indicated that Cantonese speakers use “generally have” more often and another Cantonese-speaking participant noted that “generally have” is more objective than “tend to have.”
 - However, one Tagalog-speaking participant added that the phrase “tend to have” enables them to decide for themselves what fish parts are safe to consume for a particular fish.
 - One Spanish-speaking participant added that “generally have” assures that something is true, whereas “tend to have” implies a feeling of doubt.
 - The majority of the Native American English-speaking (Groups 1 and 2) selected the “generally have” option.
 - However, the Native American English-speaking (Group 1) participants did not believe either wording options to be stronger or much different from the other.
 - Native American English-speaking (Group 2) participants were concerned about the wording, thinking that either option meant that all fish parts were contaminated, suggesting the terminology was unclear and could be misunderstood.

- Over half of Thai- and Japanese-speaking participants selected the “generally have” option.
 - Thai-speaking participants expressed confusion over both options and suggested that both phrases should be changed. Two participants remarked that an example numerical contamination value would be useful to clarify both wording options.
- Two Japanese-speaking participants indicated that “generally have” is more reliable than “tend to have.” Another Japanese-speaking participant remarked that “generally have” is easier to understand. Another participant suggested the phrase “generally speaking” would be easier to understand than “generally have.”
- Most Amharic-speaking participants selected the “generally have” option, however, these participants indicated that their choice was mainly driven by the ambiguity of the phrase “tend to have.”
 - One Amharic-speaking participant remarked that the phrase “tend to have” indicates that something is not definite whereas the phrase “generally have” means that something is fully proven.

Six focus groups generally favored the “tend to have” option. Those groups are bulleted below with key commentary:

➤ **Polish, Bengali, Hmong, Portuguese, Laotian, English**

- Over half of Polish-, Bengali-, Portuguese-, and English-speaking participants preferred the “tend to have” option.
 - One Polish-speaking participant remarked that “tend to have” is a more reliable term, whereas “generally have” is more uncertain and unprofessional. Another participant shared this opinion, noting that “generally have” is too colloquial. Another Polish-speaking participant indicated that “tend to have” is one word and “generally have” is two words in Polish and preferred the shorter phrase “tend to have.”
 - There was no commentary from the Bengali-speaking participants regarding this selection after probing by the moderator.
 - One Portuguese-speaking participant indicated that “tend” evokes a feeling of doubt.

- One English-speaking participant remarked that “tend to” is an action word. Another English-speaking participant added that “tend to” has fewer syllables and is easier to understand. One English-speaking participant added that “generally have” means that something has been confirmed and may be more scientifically sound whereas “tend to” means that something is not certain. Another English-speaking participant indicated that “generally” is more relatable.
- Hmong-speaking participants had difficulty choosing one of the options. Over half of these participants chose the “tend to have” option indicating it had fewer words.
 - Hmong-speaking participants commented that the message in both options was verbose.
- An overwhelming majority of Laotian-speaking participants selected the “tend to have” option.
 - One Laotian-speaking participant thought that “tend to have” has a deeper meaning.

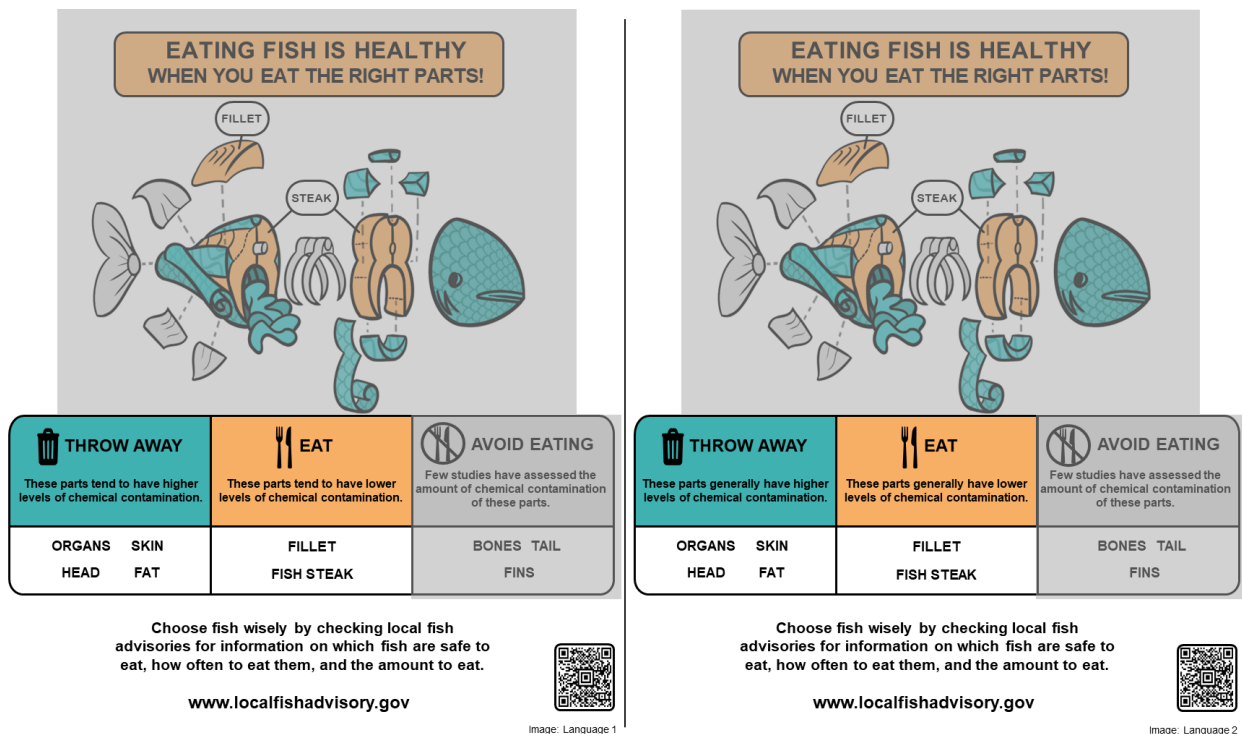
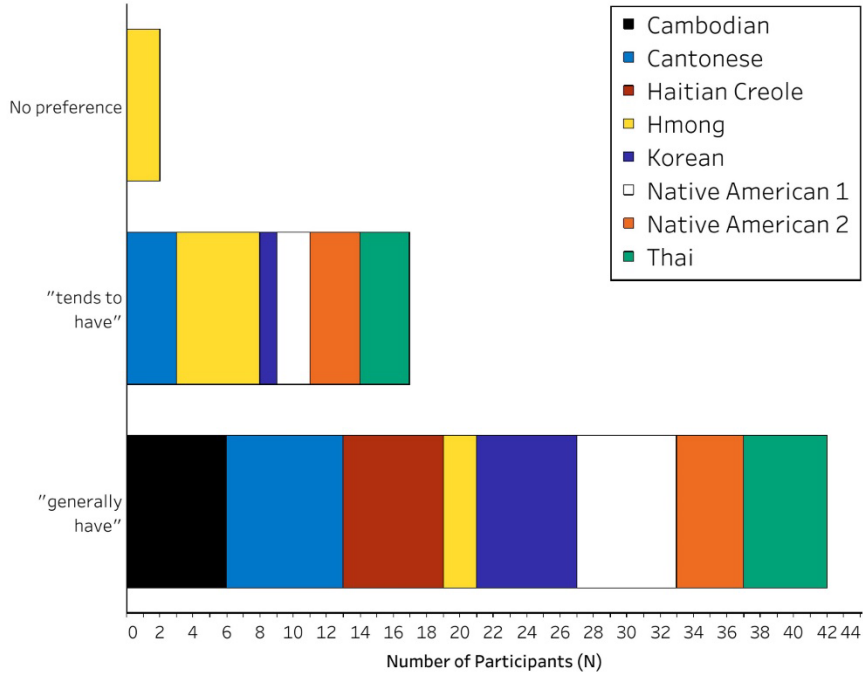


Figure 5. Image with wording differences: “tend to have” vs. “generally have”

A. Part 1



B. Part 2

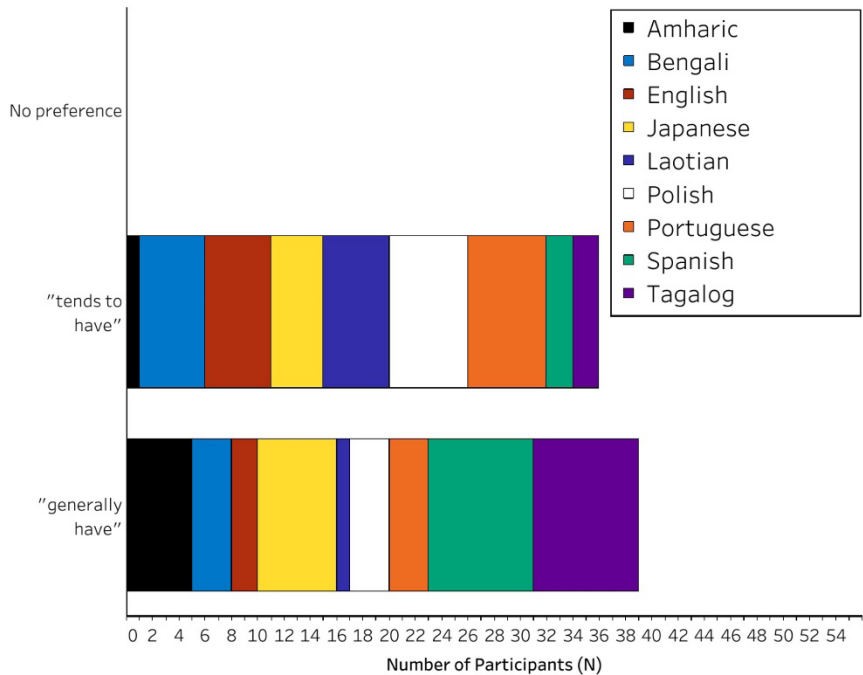


Figure 6. Results from Poll #4 (A. Part 1, B. Part 2): Which wording do you like better? "tend to have" or "generally have" (Single answer per participant.) An [interactive version](#) is available on the Tableau website.

Table 7. ICF identified the following quotations as relevant to Poll #4

Focus Group	Participant ^a and Quote
Korean	Participant D: [on the use of 'generally'] "There is a change in the nuance in the section that says to 'eat'. There seems to be more certainty in having a lower level of chemical contamination. [...] The phrase 'tend to', I think, is too much of a vague expression. We do not know the percentage - not even a broad range, so I think removing that and using 'generally' would make the best expression."
Hmong	Participant B: [On generally vs. tend to] "Perhaps the ['tend to have'] image is better because there are less words and [it is] easier to understand than [the 'generally have'] image. Because it seems lengthy."
Cambodian	Participant B: "When we hear the word 'tend to have' [it is] not clear. To be clear and sure the word 'generally have' is better."
Native American Group 1	Participant H: "I did choose generally just because it's different wording than tend. It seems generally just seems a lot longer to say than tend sounds more persuasive, but really either way, if another person is reading tend or generally in that, they're still going to think the same thing."
Native American Group 2	Participant G: "I'd also like to put it in terms for a person who doesn't understand the terminology, how would he be able to decipher the term 'higher levels of chemical contamination'? Because let's say you do not have that level of understanding [...] put it into simpler terms, I[t] would [be] better."
Cantonese	Participant B: "Cantonese people when they speak, they don't use the first phrase 'tend to have.' The second one, 'generally have' is more often used."
Haitian Creole	Participant C: "Let's remove the tend, because they might not be familiar with the word tend."
Thai	<p>Participant E: "[Tend to have] seems unclear to me. I'm not sure what information that sentence is trying to convey to us, whether it's about a positive or negative tendency in meaning or about high or low contamination levels. But if we change 'tendency' to 'probability,' it might be clearer. Or perhaps there's another word that could be used instead."</p> <p>Participant G: "[Agreeing with Participant C that the wording should be changed to] "like a contamination rate of 9% or 3%. I'm just giving examples because when we're interested, we also pay attention to numbers. But in this image, there are no numbers. If I look at something, sometimes I want to see numbers, like a phone number or something. It would make it clearer. But I understand this one. However, in image viewing, it's interesting to have numbers along with colors."</p>

Focus Group	Participant ^a and Quote
Amharic	<p>Participant B: "This one [generally] means it is fully, 100% proven, but the other one, 'tend to have' means... I mean... it doesn't seem definite to me [...] For example, 'tend to' doesn't imply that they totally contain chemicals, but this one [generally] the information it gives us is the chemical is high... it means it is confirmed that they have high levels of chemicals."</p> <p>Participant D: "I now understood the difference... if it says 'tend to' it means that it is not yet at a certain stage... it's just approaching, that is what I think. If it says they have high level of chemical pollution, it might mean that is confirmed, but the other one [tend] implies that it is in a process, that's what it gives to me."</p> <p>Participant E: "The word 'tend to' is an ambiguous word that people may not clearly understand. For high or low, people can guess the level by themselves as opposed to using the term 'tend to.'"</p>
Polish	<p>Participant B: "The second one, the phrase that they generally have in my opinion sounds more colloquial. And that's why I like it less. It should not be used colloquial language. It should be very formal."</p> <p>Participant G: "tend to have there is one word, generally have there are two words (in Polish), so for me it's just shorter. Shorter sentence."</p> <p>Participant H: "For me, "tend to have" is more reliable. "Generally have" is a bit of a wobbly statement that is unprofessional and basically gives me less confidence that this is the way to go."</p>
Japanese	<p>Participant G: "I think 'generally' is more reliable."</p> <p>Participant I: "It is a bit easier to understand to say; 'It's low or high.' Stating 'There is a tend to have' is very cautious. I feel like I'm taking an academically prudent position. So, I understand. However, if the message is to be directed to the general public, then 'It's high. It's low.' I thought it would be easier to understand if I added 'generally speaking.'"</p>
Portuguese	<p>Participant H: "It gives me a feeling of doubt, right? Tends, yes."</p>
Laotian	<p>Participant C: "Tends to have' is slightly deeper. I prefer that word."</p>
Tagalog	<p>Participant C: "I chose 'generally have' because it's easier to understand, and the image provides awareness or knowledge to people."</p> <p>Participant D: "I chose 'generally have' because it is easier for me to understand compared to 'tends to have.'"</p> <p>Participant H: "I prefer 'tends to have'] Because that way, you can determine what is suitable and what is not for a certain fish."</p>

Focus Group	Participant ^a and Quote
Spanish	<p>Participant E: "Yes, ['generally has'] is basically explaining that the green part, well, it's basically garbage. And the other, if it is for eating, that it is passable for eating. It is more understandable."</p> <p>Participant I: "Because 'generally' is already assuring that it is true and they 'tend ' is still like doubting whether yes or no. Well, that's how I understand it [...] 'tend' is like it may be yes or it may be no."</p>
English	<p>Participant B: "I think I choose 'tends to' because tends to is a verb, that's an action word. So it still impresses this tend to because people still eat this parts and all that. So 'tend to' definitely means it's an action word, not 'generally.' 'Generally' means it has chemicals and 80% of people that eat this fish, they've had some kind of complications or health challenges that are somehow very, very critical. So I prefer using the word 'tends to.'"</p> <p>Participant C: "So for me, just hearing 'generally' means it's been confirmed maybe scientifically. [...] It's no longer, may, may not 'tend to' was a bit soft but generally meant or means right now it means this is what it is. That's how it sounded to me right now."</p> <p>Participant C: "When you say this part 'tend to,' it sounds like they tend to work, they might not really or it might not be in all the case, right? But it 'tends to,' but right now you're saying this part 'generally have' and so it is actually a confirm theme. It's 'generally' just like the word goes with who knows all the fish. I just hope it's not the same with my catfish...generally sounds a little bit more, I guess serious, there's more urgency if you will, or there's more scientific behind it."</p> <p>Participant D: "I mean with these kind of signs that could be viewed by different people all over the world, I think simpler is better and 'tend to' is a one syllable word and 'generally' is a four-syllable word. So it just makes it easier to read and easier to understand from people. I think that it flows a little bit better also."</p> <p>Participant G: "The only reason I choose 'generally' is I use that word more frequently. That's the one I relate to better or like."</p>

^a The participants' names were blinded using letters and only a selection of key quotes is presented in this table, and therefore, does not necessarily reflect the opinions of all participants.

3.3.2.2. Comparison of Wording – research vs. studies

Poll #5: Which wording do you like better? “research” or “studies”

Participants were shown two wording options, “Generally, research has found...” and “Generally, studies have found...” so they could choose which option they preferred and elaborate on why. See **Figure 7** below for the entire phrasing options. The poll #5 results are shown below in **Figure 8** and relevant quotations related to this poll are provided below in **Table 8**.

Eight focus groups generally preferred the “Generally, studies have found...” option. These groups are bulleted below with key commentary:

➤ **Korean, Amharic, Polish, Native American English (Group 1), Haitian Creole, Bengali, Portuguese, English**

- All Korean-speaking participants preferred the “studies” option because it sounded more authoritative.
- All Amharic-speaking participants selected the “studies” option; however, participants noted the similarity of both “research” and “studies.”
- One Amharic-speaking participant specifically indicated that research means “to examine or to study.”
- An overwhelming majority of Polish-speaking participants preferred the “studies” option.
 - One Polish-speaking participant indicated that “studies” is more scientific, and the use of this word increases trust in the information presented. Another Polish-speaking participant remarked that “studies” is more credible and suggested that there should be a reference or QR code to validate which studies were used. Another Polish-speaking participant even suggested that “research” is influenced by the entity paying the researcher.
- Over half of the Native American English-speaking (Group 1) participants chose the “studies” option and thought “studies” sounded friendlier and “research” sounded more official.
- Over half of the Haitian Creole-speaking participants chose the “studies” option; however, all Haitian Creole-speaking participants commented that the two options are interchangeable.
- Over half of Bengali-speaking participants selected the “studies” option, with one participant remarking that ‘study’ is easier for the public to understand.

- One Bengali-speaking participant noted no difference between “research” and “studies.”
- An overwhelming majority of Portuguese-speaking participants chose the “studies” option, with one participant remarking that “studies” is more scientific and that “research” is part of the study.
 - However, one Portuguese-speaking participant indicated that “research” is more in-depth than “studies.”
- Over half of English-speaking participants selected the “studies” option. One English-speaking participant added that scientists or doctors perform “studies” whereas anyone can do “research”. Another English-speaking participant indicated that “studies” means that “research” has been previously done.
 - However, one English-speaking participant added that “research” is more credible since the entity conducting the “studies” matters. Another English-speaking participant selected “research” since that is how their friends and family who work in “research” refer to it. This participant added that “research” also sounds more official.

Five focus groups generally preferred the “**Generally, research has found...**” option. These groups are bulleted below with key commentary:

➤ **Thai, Cambodian, Cantonese, Native American English (Group 2), Laotian**

- All Thai-speaking participants and the overwhelming majority of Cambodian-, Cantonese-, and Laotian-speaking participants preferred the “research” option. Over half of Native American English-speaking (Group 2) participants selected the “research” option, because they thought “research” seemed broader and more in-depth than just “studies.” Thai-speaking participants noted that “research” involves a deep dive into something and denotes credibility.
 - A single Thai-speaking participant suggested modifying “research” to “research findings.”
 - Cambodian-speaking participants remarked that they thought “research” requires a greater level of effort to find the information, analyze it and synthesize the results for the public. One Cambodian-speaking participant thought that the word “studies” could confuse Cambodian speakers.
 - The Cantonese-speaking participants indicated that “research” is simpler to understand; however, one participant remarked that they thought “studies” sounded more official.

- One Native American English-speaking (Group 2) participant suggested the options could be used interchangeably.
- Laotian-speaking participants agreed that “research” should be conducted first to gather data and “studies” should follow the “research.”

Four focus groups were evenly **split** between which phrasing option they preferred. These groups are bulleted below with key commentary.

➤ **Hmong, Japanese, Tagalog, Spanish**

- For the Hmong focus group, the results were mixed. Hmong participants were evenly split between the options and had opposing opinions, suggesting that either language option could be used.
- Japanese-speaking participants were evenly divided between the “research” and “studies” options and indicated that both word choices were similar.
 - One Japanese-speaking participant thought that there was little difference between “research” and “studies,” and added that both words were equally hard to understand. Another Japanese-speaking participant remarked that “research” gives the impression of sampling fish whereas “studies” connotes reading literature or conducting laboratory work. Another Japanese-speaking participant who selected the “research” option indicated that “research” sounds as if something was actively implemented.
- Tagalog-speaking participants were evenly split between the options and had differing opinions, suggesting that either language option was appropriate.
 - One Tagalog-speaking participant thought that “research” is more thorough and detailed. Another Tagalog-speaking participant suggested that “research” indicates that the impact on people has already been determined, whereas “studies” suggests that the impact on people has not yet been determined. Several Tagalog-speaking participants indicated that “studies” is easier to understand in Tagalog as opposed to “research,” which involves more challenging words.
- Spanish-speaking participants were evenly split between the “research” and “studies” options.
 - Several Spanish-speaking participants thought that “studies” includes evidence and results, whereas “research” involves mostly investigation. One Spanish-speaking participant indicated that “studies” more clearly articulates the parts of

the fish that are safe to eat and the parts of the fish to discard. In contrast, one Spanish-speaking participant thought that “research” is a stronger word.

THROW AWAY
Generally, research has found that these parts have higher amounts of chemical contamination.

EAT
Generally, research has found that these parts have lower amounts of chemical contamination.

AVOID EATING
Limited research has assessed the amount of chemical contamination of these parts.

ORGANS	SKIN	FILLET	BONES TAIL
HEAD	FAT	FISH STEAK	FINS

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.

www.localfishadvisory.gov

Image: Language 3

THROW AWAY
Generally, studies have found that these parts have higher amounts of chemical contamination.

EAT
Generally, studies have found that these parts have lower amounts of chemical contamination.

AVOID EATING
Few studies have assessed the amount of chemical contamination of these parts.

ORGANS	SKIN	FILLET	BONES TAIL
HEAD	FAT	FISH STEAK	FINS

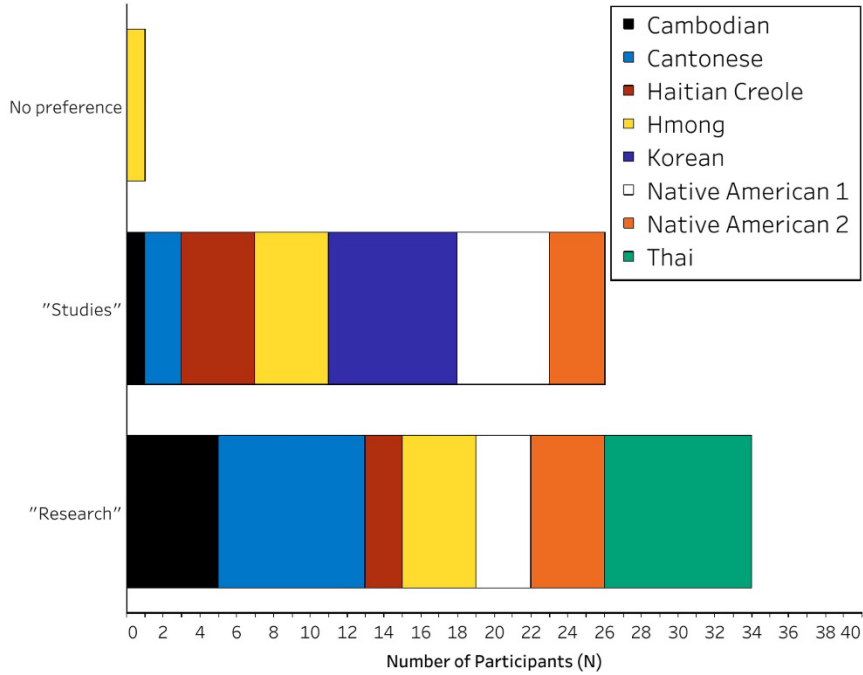
Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.

www.localfishadvisory.gov

Image: Language 4

Figure 7. Image with wording differences: “research” vs. “studies”

A. Part 1



B. Part 2

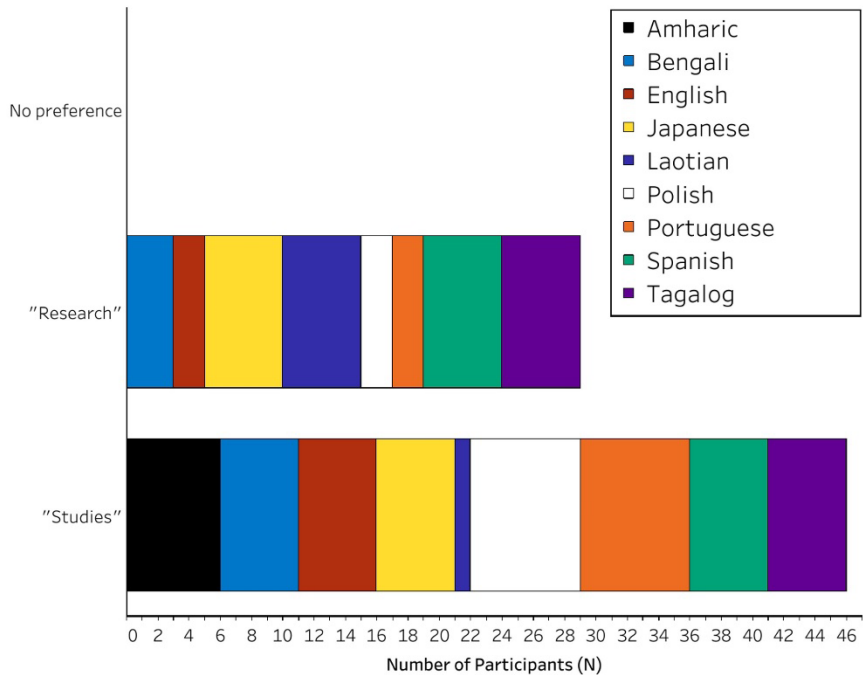


Figure 8. Results from Poll #5 (A. Part 1, B. Part 2): Which wording do you like better? “studies” or “research” (Single answer per participant.) An interactive version is available on the Tableau website.

Table 8. ICF identified the following quotations as relevant to Poll #5

Focus Group	Participant ^a and Quote
Korean	Participant G: [on research vs. studies] "I hold more meaning in 'studies' than 'research' Because 'research' feels like something that anyone can do, but 'studies' feel like conclusions by experts, so it feels more professional. For me, at least."
Hmong	Participant B: "For me, why I prefer 'studies', because it is the process of studying like someone has done the work to find evidence, data, to support the research goal. Whether it is true or not, there has been the act of finding the truth. It can be like it is this way because of this and it is this way because of that. Thus, to me it sounds more professional and more academic." Participant F: "When you go look for things, when in Hmong 'research' sounds easily understandable than the latter. The latter does sound okay but I like the first one more. It is more professional."
Cambodian	Participant D: "I choose the word 'research' over 'study.' For study we just go to school to learn. For research, it takes a lot of time to find information to put them together. I can go to school with a teacher from time to time. I understand that the word research is more valuable to me than just study because I value research more."
Native American Group 1	Participant D: "I said studies because it just sounds like a nicer word when someone says research, research shows, I think of pharmaceutical commercials. They both [say] the same pretty much. It just sounds better."
Native American Group 2	Participant F: "Yeah, research to me just kind of is synonymous with in-depth. It just seems like it's a deeper kind of getting into it, and a study could be anything."
Cantonese	Participant D: "Research is more simple." Participant C: "I feel like "study" is more official. Has official support. Like everyone can put information on YouTube. But is there any backup to the information? But if it is information coming from the government? Or is it one's own research? Anyone can open a YouTube account to put their research on it. So I think "Study" is more official."
Haitian Creole	Participant F: "There's no difference between research and study. The study leads to research. It's the same thing. According to all the information we have, they're connected together. It's what gives these two answers."
Thai	Participant A: "Research is not just about reading, but it's about delving deep into testing everything and presenting the research results. It's like this, but studying just reads a few comments, it doesn't delve deep. I prefer the word "research" more [...] If we add more research findings, it will be excellent."

Focus Group	Participant ^a and Quote
Bengali	<p>Participant H: “What time of the year is [the fish] being obtained? How you are cleaning it? [How] are not? Whether you can eat the fish or not depends on these. So, It is a study, because it is relative. I would use the research word only if I had this focused, what does say, what is showing to a group, I mean scientifically if I want to show this picture to a group, then obviously I would need more details of the same picture, plus I would use the word ‘research,’ over there, but for the common public I think, ‘study’ is much easier word on their minds.”</p>
Amharic	<p>Participant B: “Study and research both are the same... they describe the same thing... so... I selected one just because it I had to choose one, otherwise they are similar words... they convey the same thing...”</p> <p>Participant D: “I prefer the one with ‘Studies found,’ I feel that it is better with studies. I think both are related terms... when we say research, it is to examine, or to study, so now I understand both are similar.”</p>
Polish	<p>Participant B: “As I look at this leaflet. There are a lot of very general phrases like in general. There is less, not more, there are no percentages, there are no scientific, professional formulations. Due to the fact that we can freely skip the term studies here, just some research. Yes. In general, the tests, it's all great! Generally, it's super simple language, so sloppy and that's it.”</p> <p>Participant D: “So yes, research is research, but whoever pays and does research gets money simply and the result.”</p> <p>Participant E: “I too, as if I subscribe to the fact that studies sounds more credible. But I would miss having an asterisk or a reference there. Or maybe this QR led to it being written what specific research, who conducted it?”</p> <p>Participant G: “I prefer studies. A more scientific word...So this studies kind of increases the reliability and trust in this information presented on the leaflet.”</p>
Japanese	<p>Participant C: “Yes, ‘research.’ I did it because it actually sounded like something that was implemented somehow, in action. That’s why I voted it personally.”</p> <p>Participant H: “I chose ‘research’, but I'm not sensing that much difference between ‘study’ and ‘research’. I like the sound of ‘research’ better, though.”</p> <p>Participant I: “When I say ‘research’, I feel like I see a lot of fish in front of me. It appears to me that lot of fish were covered. When I say ‘study,’ I mean that I have studied a variety of literature, or that I have thoroughly examined a certain number of samples in a laboratory under a microscope. It sounds more like a laboratory. If I call it ‘research,’ it is more like going out to the ocean, catching fish from here and there, and looking at all kinds of fish, you know? I have that impression.”</p>

Focus Group	Participant ^a and Quote
Portuguese	<p>Participant E: "I prefer study because it seems more scientific, research can be anything..." "In my mind, research is part of the study."</p> <p>Participant I: "Research is something more in-depth, right? I like research more. More about research. It's research that goes deeper."</p>
Laotian	<p>Participant C: "If we have not researched first and we studied, there will be nothing for our conversation. It is about going to school. They research first, then we go to study."</p> <p>Participant E: "Research" allows us to better remember."</p> <p>Participant F: "Research then studies. Without research, how can we study?"</p>
Tagalog	<p>Participant B: "I chose 'research' because it involves gathering facts and doing thorough research. It means that the information seen in images is given effort to be shown as true and includes all relevant details."</p> <p>Participant C: "For me, I chose 'research' because when you say research, it implies that there is already evidence or impact on people that has been discovered. In contrast, 'studies' is still in the process of examining what its effects might be on people."</p> <p>Participant E: "I chose the term 'studies' because I don't understand research in Tagalog. Many of the words are too deep for some people, so for me, it's deep. 'Studies' is easier to understand."</p> <p>Participant G: "I chose 'studies' because the word research seems too specialized; it's too deep in Tagalog, so I chose 'studies.'"</p>
Spanish	<p>Participant E: "Studies' is more convincing [...] because a study already has results and research is just learning what they are basically reporting. Well, there are almost no results in research and in a study yes."</p> <p>Participant F: "I agreed with [Participant E] because the study is like it's already based [on evidence]. And research is just like they are still investigating."</p> <p>Participant G: "Well, for me 'studies' [gives me more insight] on fish such [as] what is good and what is bad."</p> <p>Participant J: "I chose 'research' because it sounds stronger. And as [Participant E] said, who is like him, like some investigations more like what is happening, but there are also many fish. And there are also different things that we still don't know which we can eat and which we can't. Well, that's why I think that in research it's a stronger word."</p>

Focus Group	Participant ^a and Quote
English	<p>Participant A: "I think, well, what I was thinking was you're not listening to studies. So where the studies coming from tends to matter. It's done by a fish company. I'm not really concerned with what their studies say. Right. 'Research' a little bit more general, A little. It could be a comparison. If you put 'EPA studies,' 'EPA research,' it kind of defines it a little bit more for me. So 'studies,' having read studies from different groups of people. Sometimes the people that want you to go their way, I think it leaves it a little more open."</p> <p>Participant A: "I think 'research' to me comes across as a little bit more trustworthy."</p> <p>Participant D: "I think anybody can do research. Scientists do studies or doctors do studies."</p> <p>Participant E: "I put down 'studies' because it makes me feel secure that research has been performed."</p> <p>Participant G: "Yeah, I chose 'research' just because I have friends and family members that do research as their work. So none of them say, yeah, I do studies. They all refer to it as research. So in my opinion it sounds more official when you say 'research.'"</p>

^a The participants' names were blinded using letters and only a selection of key quotes is presented in this table, and therefore, does not necessarily reflect the opinions of all participants.

3.3.2.3. Language – Final Preference

Poll #6: Which is the easiest to understand of all options: “tend to have,” “generally have,” “research,” “studies”

Participants were asked which of the four options was the easiest to understand after the discussion about poll #5. The full phrasing options are shown below in **Figure 9**. The poll #6 results are displayed below in **Figure 10** and relevant quotations to this poll are provided below in **Table 9**.

Five focus groups generally indicated the “research” option as the easiest to understand. These groups are bulleted below with key commentary:

➤ **Thai, Cambodian, Cantonese, Bengali, Laotian**

- All Thai-speaking participants preferred the “research” option.
 - The Thai participants did not believe the other options were as clear as the “research” option, with one participant remarking that “research” implies the information is trustworthy.
- An overwhelming majority of the Cambodian-speaking participants and half of the Cantonese-speaking participants preferred the option including “research.”
 - Cantonese-speaking participants noted that “research” is simpler, more direct, and often includes “studies.”
 - Two Cantonese participants remarked that the phrase does not need the word “generally” as the word is associated with hesitancy.
- Half of Bengali-speaking participants preferred the “research” option.
 - One Bengali-speaking participant added that “research” is more in-depth and has a greater impact on people. Another Bengali-speaking participant remarked that “research” is more credible than “studies.”
- Under half of Bengali-speaking participants selected the “generally have” option.
 - One Bengali-speaking participant indicated that ‘generally’ is synonymous with usually, which is preferable to them.
- An overwhelming majority of the Laotian-speaking participants preferred the option including “research.”
 - One Laotian-speaking participant added that “tends to have” is just too difficult to understand.

- Another Laotian-speaking participant indicated that the meaning behind “tends to have” can vary.

Four focus groups favored the word “studies”. These groups are bulleted below with key commentary:

➤ **Korean, Amharic, Hmong, Portuguese**

- The overwhelming majority of Korean-speaking participants preferred the option including “studies.”
- Half of Amharic-speaking participants preferred the “studies” option. Although participants indicated that both “research” and “studies” were similar, only one Amharic-speaking participant thought that “research” was the easiest to understand.
- Under half of Hmong-speaking participants preferred “studies.” However, this selection still received the most votes during poll #6 since the participants were split between the four options.
 - The remaining Hmong participants were split between the “research” and “tend to have” options. This likely indicates that multiple options may be suitable for communicating this message. Hmong-speaking participants indicated that Hmong required clarity about the word “chemical contamination” and what chemical it was referring to, regardless of the word choices being discussed.
- Over half of Portuguese-speaking participants selected the “studies” option. Portuguese-speaking participants did not have comments in this poll and quotes from these groups are not included in **Table 9**.

Five focus groups favored the wording “generally have”. These groups are bulleted below with key commentary:

➤ **Japanese, Haitian Creole, Native American English (Groups 1 and 2), Tagalog**

- Half of Japanese-speaking participants selected the “generally have” option.
 - One Japanese-speaking participant indicated that “generally” refers to members of the public and is understandable. In contrast, another Japanese-speaking participant noted that “research” is carried out by the government and rooted in authority. Another Japanese-speaking participant added that the sentence length for all word choices is too long.
 - The remaining Japanese-speaking participants were split between the “research” and “tend to have” options, indicating some split opinions in the group and that multiple options may be suitable for communicating this message.

- Half of the Haitian Creole-speaking participants preferred the “generally have” option.
 - Under half of Haitian Creole-speaking participants preferred “research,” indicating some split opinions in the group and that multiple options may be suitable for communicating this message.
- Half of Spanish-speaking participants selected the “generally have” option.
 - However, under half of Spanish-speaking participants preferred the “studies” option. One Spanish-speaking participant selected the “research” option. Spanish-speaking participants did not have comments in this poll and quotes from these groups are not included in **Table 9**.
- Over half of the Native American English-speaking (Group 1), and under half of the Native American English-speaking (Group 2) participants preferred the “generally have” option.
 - However, under half of Native American English-speaking (Group 1) preferred “research” and few Native American English-speaking (Group 2) participants preferred “studies.” The split opinions between “generally have,” “research,” and “studies” indicates that multiple options may be suitable for communicating this message.
- Under half of Tagalog-speaking participants selected the “generally have” option. However, this selection still received the most votes during poll #6 since the participants were split between the four options.
 - However, one Tagalog-speaking participant indicated that “research” most appropriately captures the contents of the image and is therefore easier to understand. Another Tagalog-speaking participant added that “research” substantiates why certain fish parts can be consumed while others should be thrown away. Another Tagalog-speaking participant stated that most people will not understand “research” even though “research” is a more appropriate term, especially in the United States. This same participant added that they would prefer a mix of English and Tagalog, known as Taglish.

One focus group generally identified the “tend to have” option as the easiest to understand. The focus group key commentary is bulleted below.

➤ Polish

- The overwhelming majority of Polish-speaking participants selected the “tend to have” option. However, several Polish-speaking participants remarked that the easiest term is not necessarily the most convincing term. One Polish-speaking participant indicated that “generally have” portrays a less credible message.

One focus group was split between the “tend to have,” “generally have,” and the “research” options as the easiest to understand. The focus group key commentary is bulleted below.

➤ English

- English-speaking participants were evenly split between each of the following phrase options: “tend to have,” “generally have,” and “research.”
 - One English-speaking participant chose the “studies” option as the easiest to understand.

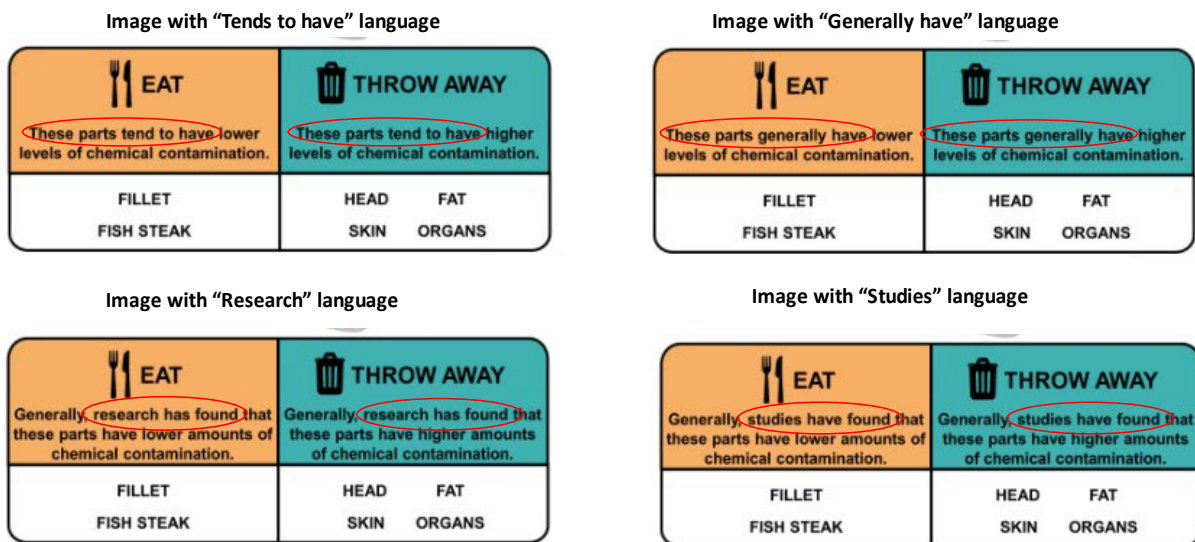
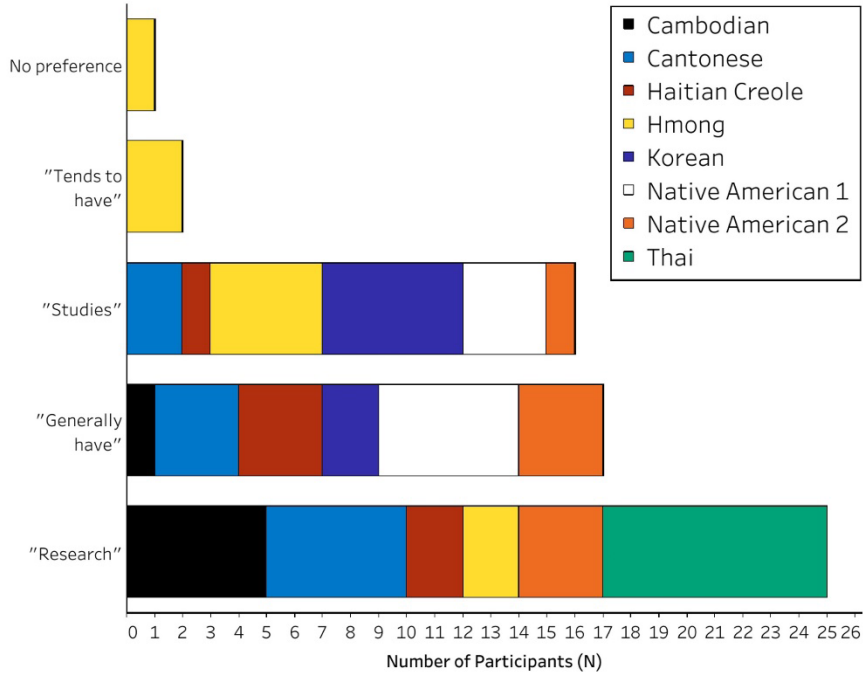


Figure 9. Image with all wording differences: “tend to have,” “generally have,” “research,” and “studies”

A. Part 1



B. Part 2

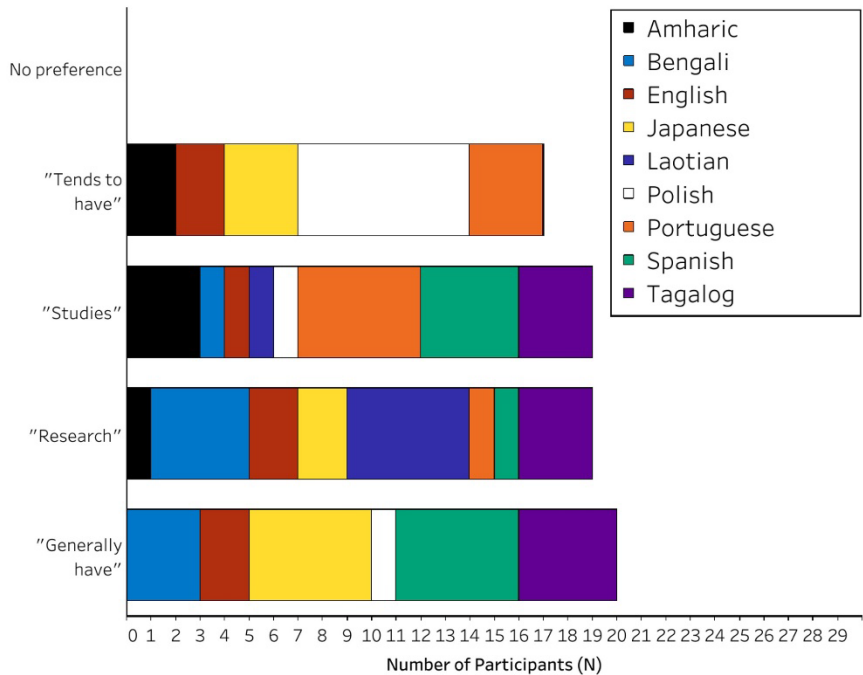


Figure 10. Results from Poll #6 (A. Part 1, B. Part 2): Which is the easiest to understand of all options: “tend to have,” “generally have,” “research,” “studies” (Single answer per participant.) An [interactive version](#) is available on the Tableau website.

Table 9. ICF identified the following quotations as relevant to Poll #6

Focus Group	Participant ^a and Quote
Korean	Participant E: "The word 'studies' is credible."
Hmong	Participant A: "I chose 'studies' because it's easier to understand."
Cambodian	Participant A: "The word that makes me believe that it is safe to eat is the word 'research'. It is clear. I know for sure that the word has been researched to find out, and then they put it in. The results are clear from 90% to 99% that it is safe to eat. The word 'research' makes me understand that I can eat."
Native American Group 2	Participant F: "It's probably not information that many of us really know about, so, we need to learn. But, you know, I picked the one with research and generally, but I would rewrite it. On the throwaway part, I would probably say research, I would take out generally. I would say 'research has found that these parts tend to have higher amounts of chemical contamination.' And then on the eating part, I would leave it the way it is."
Cantonese	Participant I: "Because the news always says 'research shows' so it's more direct."
Haitian Creole	Participant A: "I'm more familiar with this term [generally, and have heard it more often than the others], so it was easier to understand. [...] I'm less familiar with this phrase [tend to have], even though I understand it, this is not how I would even initially phrase it this way. This is why it's more difficult for me to understand."
Thai	Participant E: "As a consumer viewing this media, I believe that the term "research" indicates credibility. This media appears trustworthy."
Bengali	<p>Participant A: "I prefer 'generally' better which means usually and 'tend' means tendency. I would rather go with the usual thing rather than tendency."</p> <p>Participant B: "If it is a fact, then what I understand is adhyayan (অধ্যয়ন) means 'study', and gabeshona (গবেষণা) means 'research'. So, one can actually do 'study' with just data, from some samples. And the 'research' is much more in-depth, if someone has actually done any testing or 'research' on the chemistry where it says, yes. So, by 'research' I mean strong, if these are facts. I mean, I think these facts actually come from some 'research', not just from some 'study'. So, it's much more impactful and has a much more impact on people, if it's 'research.'"</p> <p>Participant C: "think 'research' has more credibility than 'studies'. 'Study'... doesn't seem like much 'research'. A lot of participants are in 'research', that's all done."</p>
Polish	<p>Participant A: "I agree with the predecessor that I chose what is the easiest. That doesn't mean the most precise or the most convincing, but the easiest."</p> <p>Participant G: "The easiest to understand doesn't mean it's the best for us." "I can say that on the same principle that the more complicated the vocabulary you use, the more difficult it is to understand the sentence."</p> <p>Participant H: "I think it's more a question of credibility here. If something is written in such a general way. For me, this is less credibility of such a message."</p>

Focus Group	Participant ^a and Quote
Japanese	<p>Participant E: "I also felt that this 'tend to have' is vague and unclear. 'Research' and 'study' mean that research has been done, and 'generally' means that the people reading this are ordinary citizens, so 'generally' is understandable, but 'tend to have' is vague and ambiguous."</p> <p>Participant I: "The ['research' and 'studies' options], I feel like they are trying to answer as accurately as possible without being poked by anyone. The top ['generally have'] one is shorter, more complete, and more concise. [For the 'research' option], there is research as the background to all of this. It's the result of that. It is already implicitly assumed, that is, the government is the one who is supposed to come up with this, right? I get the feeling that the government has done enough research behind the scenes to say this. In other words, it is short, but it is accompanied by authority. I can say that the government is saying."</p> <p>Participant J: "When there are three lines [of text], I'm going to dismiss it. I think [the wording for all] it is a little too long" [on their general impression of the wording] "This, alone, will not change its fundamental thoughts and actions, but as the other person mentioned earlier, I think it's a good starting point, or something to let you think like, 'oh, maybe it's just the way things are, I see'. So, somewhat to add to your information for that person, I would say."</p>
Laotian	<p>Participant A: "The word 'tends to' is too [difficult to understand], isn't it?"</p> <p>Participant F: "'Studies' is clear, but yeah this word 'tends to have' means maybe it is, maybe it is liked, many people may like it. We don't know what it is actually?"</p>

Focus Group	Participant ^a and Quote
Tagalog	<p>Participant B: "I chose 'research' because it represents the correct process and term or language for the images, making it more understandable for everyone. So, we researched to find the right language for the images."</p> <p>Participant F: "I chose 'research.' It's somewhat deep in Tagalog, but with research there is proof of why it is said that something should be eaten or discarded."</p> <p>Participant I: "I chose the term 'studies,' although research might be more appropriate if we use it in our current setting here in America. 'Studies' is better because the population here, for example, children who were brought here and grew up here, don't understand other languages. So, let's keep it simple with 'Studies' which can also mean research. But if I really want to be understood, I would just use Taglish (a mix of English and Tagalog), like saying, '<i>base sa pag-research, ito yung nangyayari</i>' (based on the research, this is what's happening). It still has the same meaning. Because if we insist on using the correct term, about 60% won't understand it, so it's pointless."</p> <p>Participant F: "Because if you say Generally have meaning in English is usually, it might not be right—it should be usually discarded or 'not eaten.' It seems like saying 'Okay, I'll just eat it because it's usual.' But when you say research there is a basis for why they say something to avoid eating it or recommended to eat that part of the fish."</p>
English	<p>Participant E: "I was actually the opposite. I think 'tend to' have was the easiest, 'generally' was the most difficult."</p> <p>Participant F: "'Generally' I would say the word 'generally' is kind of pretty easy to understand. 'Tends' could be like if you don't really speak too much English could be really difficult to understand. But 'generally' is in general fish got those chemicals or I think for me 'generally' will be the easiest to understand."</p>

^a The participants' names were blinded using letters and only a selection of key quotes is presented in this table, and therefore, does not necessarily reflect the opinions of all participants.

Poll #7: Which is the hardest to understand: “tend to have,” “generally have,” “research,” or “studies”?

Participants were asked which of the four phrasing options was the hardest to understand after the discussion about poll #6. See **Figure 9** above for the entire phrasing options. The poll #7 results are displayed below in **Figure 11** and relevant quotations related to this poll are provided below in **Table 10**.

Eight focus groups generally indicated the “tend to have” option as the hardest to understand. These groups are bulleted below with key commentary:

- **Cambodian, Korean, Native American English (Group 1), Cantonese, Haitian Creole, Thai, Tagalog, Spanish**
 - All Cambodian- and Spanish-speaking participants, an overwhelming majority of Korean-, Native American English-speaking (Group 1), Cantonese-, and Tagalog-speaking participants, and over half of Haitian Creole- and Thai-speaking participants indicated that the “tend to have” language was the hardest to understand.
 - One Spanish-speaking participant remarked that “tend to have” does not imply that something is certain.
 - One Tagalog-speaking participant indicated that “tend to have” is not frequently used in the media.
 - One Korean-speaking participant emphasized that specifying the authority behind the language used would add credibility to the message when using the “research” or “studies” options.
 - One Korean-, one Haitian Creole-, two Tagalog- and two Native American English-speaking (Group 1) participants thought “research” was the most difficult to understand.
 - One Hmong-, one Cantonese-, one Tagalog- and two Native American English-speaking participants (Group 1) thought the “studies” option was the most difficult to understand.

Three focus groups generally indicated the “generally have” option as the hardest to understand. These groups are bulleted below with key commentary:

- **Hmong, Native American English (Group 2), Portuguese**
 - An overwhelming majority of Hmong-speaking participants thought that “generally have” was the hardest to understand.

- One Hmong-speaking participant thought the “studies” option was the most difficult to understand.
- Under half of Native American English-speaking (Group 2) participants indicated that “generally have” was the most difficult to understand.
 - Only one Native American English-speaking (Group 2) participant thought “research” was the most difficult to understand, and only one Native American English-speaking (Group 2) participant thought “studies” was the most difficult to understand.
- Over half of Portuguese-speaking participants thought that “generally have” was the hardest to understand. Portuguese-speaking participants did not have comments in this poll and quotes from these groups are not included in **Table 10**.

One focus group generally indicated the “research” option as the hardest to understand. This group is bulleted below with key commentary:

➤ **Bengali**

- Half of Bengali-speaking participants indicated that “research” was the hardest to understand.
 - The remaining Bengali-speaking participants were split between the “tend to have” and “generally have” options.

One focus group generally indicated the “studies” option as the hardest to understand. This group is bulleted below with key commentary:

➤ **Laotian**

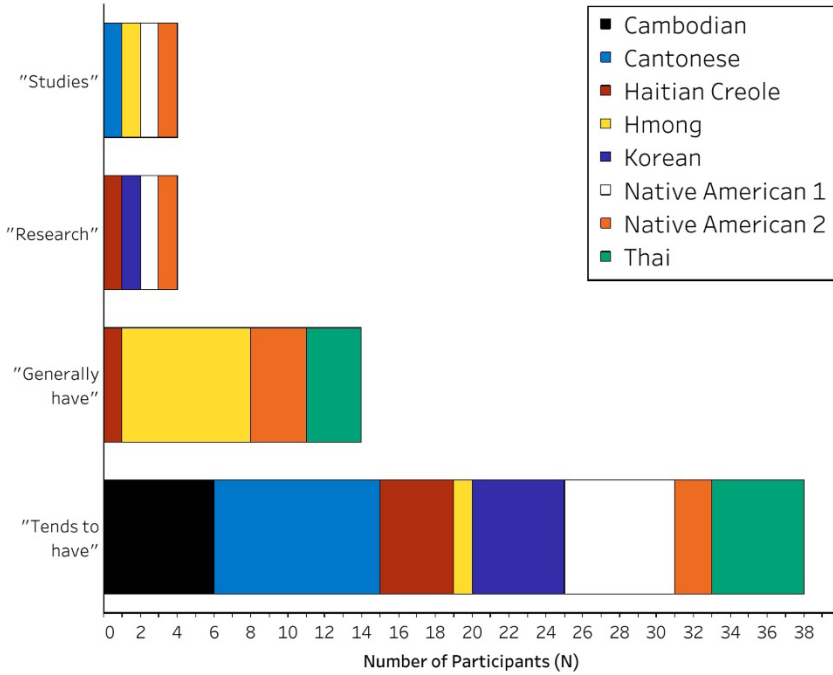
- Half of Laotian-speaking participants indicated that “studies” was the hardest to understand.
 - One Laotian-speaking participant indicated that the phrase “tends to have” is too difficult to understand.
 - Another Laotian-speaking participant thought that “tend to have” can have different meanings.

Four focus groups were generally **split** between which language option was the hardest to understand. These groups are bulleted below with key commentary:

➤ **Amharic, Polish, Japanese, English**

- Half of Amharic-speaking participants selected the “generally have” option, and the other half selected the “tend to have” option as the phrase that was the most difficult to understand.
 - One Amharic-speaking participant remarked that that the phrase “tend to have” changed their understanding of the message and prevented them from accepting the statement with certainty when compared to the phrase “generally have.”
- Polish-speaking participants were divided on the four language options. Under half of Polish-speaking participants selected “studies” as the most difficult language option, and few participants indicated that “research” and “generally have” were hardest to understand.
 - One participant remarked that these four terms are vague, which reduces the credibility of the message. Another Polish-speaking participant added that the complicated vocabulary makes it more challenging to understand the sentence.
- Japanese-speaking participants were also divided on the four language options. Under half of Japanese-speaking participants selected “research” as the most difficult language option, and few participants found “tend to have,” “generally have,” or “studies” as the hardest language choices to understand.
 - One Japanese-speaking participant remarked that “generally” was vague and the most difficult to understand. Another Japanese-speaking participant added that “tend to have” does not give a definitive answer as to the amount of something.
- Under half of English-speaking participants indicated that “generally have” was the hardest to understand.
 - Few English-speaking participants thought that “tends to have” was the most difficult to understand. One English-speaking participant added that “tends” can be difficult to understand for someone who is not as familiar with the English language.

A. Part 1



B. Part 2

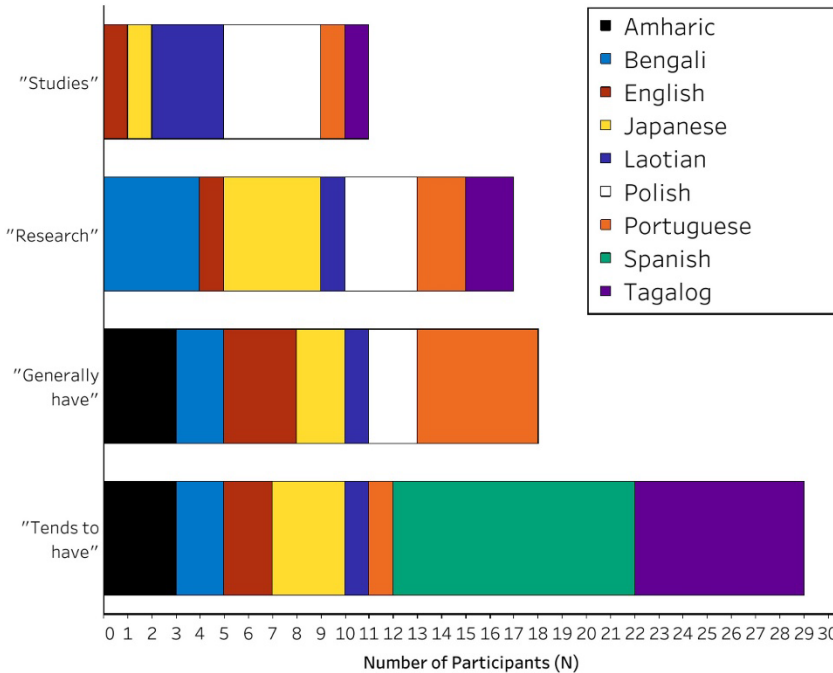


Figure 11. Results from Poll #7 (A. Part 1, B. Part 2): Which is the hardest to understand: “tend to have,” “generally have,” “research,” or “studies”? (Single answer per participant.) An interactive version is available on the Tableau website.

Table 10. ICF identified the following quotations as relevant to Poll #7

Focus Group	Participant ^a and Quote
Korean	Participant D: "I chose 'tend to' as the most difficult one to understand, and 'generally' as what I believe to be the best expression. As for 'research' vs. 'studies', I thought there should be more [information], specifically the goal for conducting the research thus [adding] more credibility."
Hmong	Participant A: "I chose 'generally have' because it sounds ambiguous."
Cambodian	Participant E: This word ['tend to have'] is too broad and no test of any evidence presented."
Cantonese	Participant B: "'Tend to have' [is hard to understand] because Cantonese people don't use this phrase much."
Haitian Creole	Participant A: "I'm less familiar with this phrase ['tend to have'], even though I understand it, this is not how I would even initially phrase it this way. This is why it's more difficult for me to understand."
Thai	Participant H: "Because for me, both 'generally' and 'tendency' cover the same ground. Neither of them is clear. In this section, there's high contamination, and in this section, there's no contamination, or something like that. It would be clearer."
Amharic	Participant B: "The changing of the wording hinders people from accepting it with certainty... now for example, for me to accept it with certainty... for example 'tend to,' especially, is an ambiguous term, and as a result, I have a feeling that it changes my thinking... the other one, however, when it says 'generally,' it indicates me that it is sure."
Polish	<p>Participant E: "All in all, these are vague, then maybe that's why I trust a little less, but in general, the difference between these four not so much."</p> <p>Participant G: "The easiest to understand doesn't mean it's the best for us." "I can say that on the same principle that the more complicated the vocabulary you use, the more difficult it is to understand the sentence."</p> <p>Participant H: "I think it's more a question of credibility here. If something is written in such a general way. For me, this is less credibility of such a message."</p>
Japanese	<p>Participant C: "It is not clear what the 'tend to have' is [referring to]. How much of a 'tend to have' do you mean?"</p> <p>Participant F: "I voted 'generally' [as difficult to understand] rather than 'research' or 'study'. To me, 'generally' sounds very vague So I guess it's really a personal feeling, but that's why I picked 'generally'."</p>
Laotian	<p>Participant A: "The word 'tends to' is too [difficult to understand], isn't it?"</p> <p>Participant F: "'Studies' is clear, but yeah this word 'tends to have' means maybe it is, maybe it is liked, many people may like it. We don't know what it is actually?"</p>

Focus Group	Participant ^a and Quote
Tagalog	Participant C: "My answer is 'tends to have' because this phrase is not something you usually hear. You don't often hear it in the news, newspapers, or media. I more commonly 'studies' and 'research,' but 'tends to have' is something I actually just saw for the first time in such signs."
Spanish	Participant E: " ['Tends to' is the hardest to understand] because as [Participant I] said the first time, it doesn't assure you anything. Well, that's basically hard to understand."
English	<p>Participant E: "I was actually the opposite. I think 'tend to' have was the easiest, 'generally' was the most difficult."</p> <p>Participant F: "Generally' I would say the word 'generally' is kind of pretty easy to understand. 'Tends' could be like if you don't really speak too much English could be really difficult to understand. But 'generally' is in general fish got those chemicals or I think for me 'generally' will be the easiest to understand."</p>

^a The participants' names were blinded using letters and only a selection of key quotes is presented in this table, and therefore, does not necessarily reflect the opinions of all participants.

3.3.2.4. Language – Gray fish parts

Poll #8: Which wording do you like better: “assessed” or “evaluated”?

All participants, except the Haitian Creole- and Bengali-speaking groups, were asked which wording they liked better: “assessed” or “evaluated.” Haitian Creole- and Bengali-speaking groups were not asked this question because “assessed” and “evaluated” have identical translations in those languages. See **Figure 12** below for the full phrasing options. The poll #8 results are shown below in **Figure 13** and relevant quotations related to this poll are provided below in **Table 11**.

Ten focus groups generally preferred the “evaluated” option. These groups are bulleted below with key commentary:

- **Cantonese, Cambodian, Native American English (Groups 1 and 2), Thai, Japanese, Hmong, Tagalog, Spanish, English**
 - All of the Cantonese-, Tagalog-, Spanish-, and English-speaking participants, an overwhelming majority of Cambodian-, Native American English-, Thai-, Japanese-, and Portuguese-speaking participants, and over half of Hmong-speaking participants preferred the word “evaluated.”
 - Native American English-speaking (Groups 1 and 2) participants thought that “evaluated” yielded a more quantitative and thorough result.
 - Cantonese-speaking participants commented that “assessed” seemed to be unsure or casual and “evaluated” is more professional.
 - One Japanese-speaking participant preferred “evaluation” as it is a more general term compared to “assessed” which is more technical and methods driven.
 - One Portuguese-speaking participant commented that “evaluated” means that detail was provided for every little part. Another Portuguese-speaking participant indicated that there is no difference between the two terms.
 - Tagalog-speaking participants indicated that “evaluated” is used more frequently and is easier to understand. One Tagalog-speaking participant added that they never heard the word “assessed” in Tagalog.
 - One Spanish-speaking participant thought that “evaluated” is synonymous with the ongoing study.
 - English-speaking participants indicated that “evaluated” sounds as if something has undergone testing and has produced a certain conclusion. One English-speaking participant associated “evaluated” with the role of the FDA.

- Hmong-speaking participants were split between the options, suggesting either option could be used for the images.

Three focus groups generally preferred the “assessed” option. The focus group key commentary is bulleted below.

➤ **Polish, Korean, Laotian**

- An overwhelming majority of Polish-speaking participants selected the word “assessed”. Polish-speaking participants thought that “assessed” sounded more definitive and more likely to be used in scientific literature.
 - Korean-speaking participants were split between the options, suggesting either option could be used for the images.
 - However, Korean-speaking participants agreed that “assessed” is more common and easier to understand in their language.
- An overwhelming majority of Laotian-speaking participants selected the word “assessed”. Although Laotian-speaking participants chose the word “assessed,” several participants indicated that “assessed” does not indicate certainty.
 - One Laotian-speaking participant indicated that “evaluated” suggests greater certainty.
 - Another Laotian-speaking participant added that “assessed” indicates a guess.
 - One Laotian-speaking participant added that “evaluated” is easier to understand when using market language.

One focus group was split between the “assessed” and “evaluated” options. The focus group key commentary is bulleted below.

➤ **Amharic**

- Amharic-speaking participants were evenly split between “assessed” and “evaluated,” but remarked that “evaluated” means that something (e.g., research) is still in progress, whereas “assessed” suggests that something has been completed, indicating that “assessed” may be preferable.

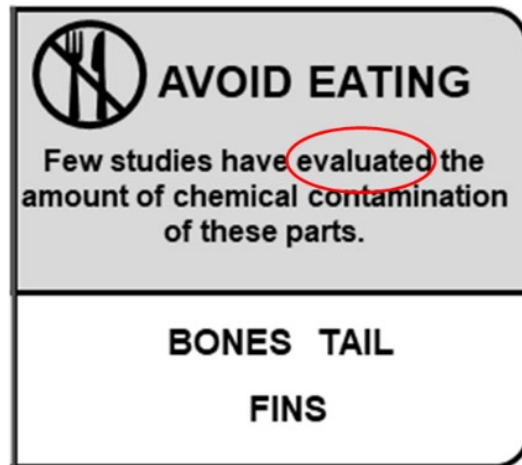
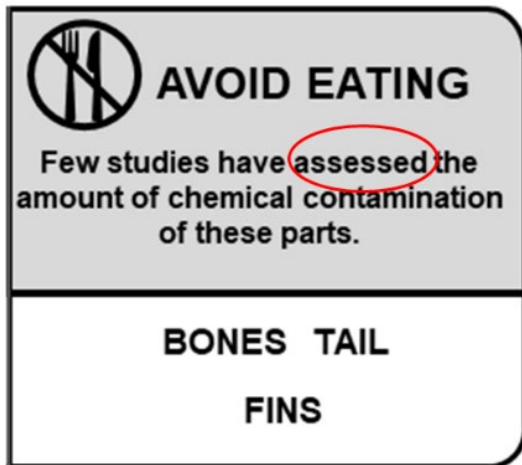
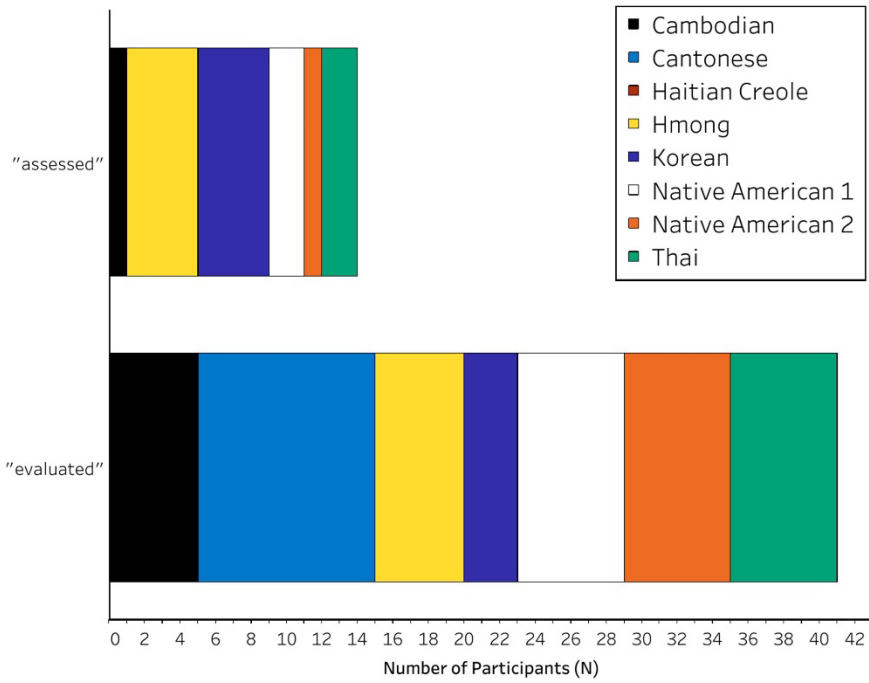


Figure 12. Image with wording differences: “assessed” vs. “evaluated.”

A. Part 1



B. Part 2

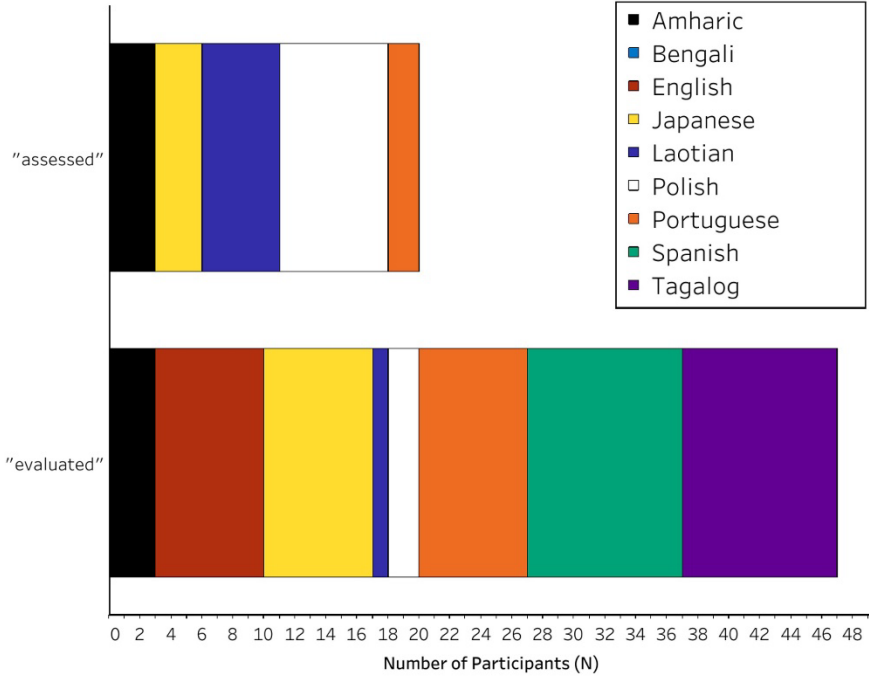


Figure 13. Results from Poll #8 (A. Part 1, B. Part 2): Which wording do you like better? "assessed" or "evaluated" (Single answer per participant.) An interactive version is available on the Tableau website.

Table 11. ICF identified the following quotations as relevant to Poll #8

Focus Group	Participant ^a and Quote
Korean	Participant E: "In my mind, something 'assessed' sounds like a confirmed result gained by results of a study, and something 'evaluated' creates an image of something that informs of various things while in the midst of something – whatever it could be."
Hmong	Participant A: "'Evaluated' shows a conduction of studies" [When asked about their reaction about the language] "Without trashing parts of the fish, what would you do to the parts you avoid eating?"
Cambodian	Participant E: "The word 'assessed' has deep meaning and [is] difficult to understand. The word 'evaluated' has a moderate level that the reader can understand."
Native American Group 1	Participant F: "Well, evaluated is more towards quality of something where assessment is just going over all the information that's collected."
Native American Group 2	Participant B: "agree with that. That was why I chose evaluated also because evaluated gives a kind of quantitative result. It kind of gives a definitive result, that yes, the research has been done, the study has been done, the practical, whatever thing was done, and we got this output. But assessment is like just physically saying we kind of studied it and this is what we kind of felt. It's not giving a kind of a direct answer a direct statement like evaluated."
Cantonese	Participant B: "'Evaluated' seems more formal ... 'Assessed' seems unsure, not as professional, doesn't seem like it is from real research."
Thai	Participant C: "To be able to assess, we have to evaluate it first. We don't have numbers yet, these two words have meanings. It's not just plain Thai language. So, we have to evaluate it first and then summarize the results as an assessment. So, I don't know how to weigh it. [...] Evaluation is the conclusion."
Amharic	<p>Participant A: "[Evaluated means the research] is not yet [done]. it means it's still in evaluation, not approved."</p> <p>Participant B: "To 'assess' in Amharic language it means it's made certain. When we say 'evaluated', however, it's not finalized, it is not complete, that is the feeling what it gives me..."</p> <p>Participant D: "To me if 'assessed,' it gives me a feeling that the thing is verified or is approved by a study... it gives me a sense as approved or it is checked... it passed a test, but if it is on evaluation but both are similar."</p>
Polish	<p>Participant C: "I like the assessed better. It seems to me that it is more as if something is counted, something is as if divided. Evaluated, seems to me very subjectively, that's how it is judged. Well, cool, it's unhealthy, so, I think it assessed that it will appeal to me more."</p> <p>Participant G: "I would also choose the word assessed. It seems to me that it is more common in scientific literature of some professional opinion."</p>

Focus Group	Participant ^a and Quote
Japanese	<p>Participant F: "I chose the 'assessed'. When I read this Japanese, 'evaluated the amount of pollution', I was a little concerned about the way you said 'evaluated the amount'. I thought it might mean something like 'the amount is calculated,' so I voted for the 'assessed' expression."</p> <p>Participant I: "Evaluation' is a word that I usually use in these situations, so I don't feel at all uncomfortable with it. However, I think 'assessed' involves a very concrete description of the process. This is a method. 'Assessment' is a method. And 'evaluation' is really 'evaluation,' which is a general thing. Therefore, I don't think the word 'assessed' is necessary to be included here, as it's such a technical, process-oriented word."</p>
Portuguese	<p>Participant D: "And evaluated is because they really got to every little part and have come to the conclusion that it is best avoided."</p> <p>Participant I: "I don't think it makes any difference."</p>
Laotian	<p>Participant C: "For me to understand, I would use 'evaluated.' This is personal for me." "It is easier to understand when using the market language, please let them know."</p> <p>Participant E: "Assessed] is not certain like 'evaluated'. If 'evaluated,' you have already inspected, it would be more certain."</p> <p>Participant F: "Yes, an assessment is simply a guess."</p>
Tagalog	<p>Participant A: "My first reaction when I saw the word 'assessed' in Tagalog was a bit surprising, as if I had forgotten where I had heard it before. I knew I had heard it, but I couldn't remember what 'assessed' meant."</p> <p>Participant B: "I chose the word 'evaluated' because I understand it better and hear it more often. It's easier to use and is used more frequently."</p> <p>Participant C: "I chose to use [evaluated] because I had never heard the word 'assessed' before in Tagalog."</p>
Spanish	<p>Participant I: "Evaluated is the right way to use it [...] because they are supposed to be doing a study. So, they are already evaluating the information that is being given [...] and assessed only is like we are going with the same thing that not, which [...] is not the way to say it."</p>

Focus Group	Participant ^a and Quote
English	<p data-bbox="443 285 1421 380">Participant C: “So ‘evaluated’ looks or sounds more like they've assessed the information, they've processed it, possibly they've carried out some certain [research] needs, and then they've come to a certain conclusion.”</p> <p data-bbox="443 415 1421 510">Participant E: “Yeah, I prefer ‘evaluated.’ I don't like ‘assessed.’ ‘Evaluate’ to me, sounds like it's been tested, it's been research assessed to me means that you're still looking into it.”</p> <p data-bbox="443 546 1421 667">Participant G: “If you see some vitamins or something, they say the, whatever has not evaluated the information here. So I'm more familiar with that word ‘evaluated.’ ‘Evaluated’ to things like this because that's what the AFD or whatever FDA uses.”</p>

^aThe participants' names were blinded using letters and only a selection of key quotes is presented in this table, and therefore, does not necessarily reflect the opinions of all participants.

Poll #9: Which wording do you like better: “little” or “limited”?

Participants were asked which wording they liked better: “little” or “limited.” See **Figure 14** below for the entire phrasing options. The poll #9 results are shown below in **Figure 15** and relevant quotations related to this poll are provided below in **Table 12**.

Twelve focus groups generally preferred the “limited” wording. These groups are bulleted below with key commentary:

➤ **Cambodian, Cantonese, Haitian Creole, Thai, Native American English (Groups 1 and 2), Korean, Bengali, Amharic, Portuguese, Tagalog, English**

- All Cambodian-speaking participants and an overwhelming majority of Haitian Creole-, Thai-, Native American English-speaking (Groups 1 and 2), Portuguese-, Tagalog-, and English-speaking participants, preferred the word “limited.”
 - One Tagalog-speaking participant indicated that “limited” seems more credible than “little.” Another Tagalog-speaking participant thought that “limited” is simpler to understand than “little.”
 - Native American English-speaking (Group 2) participants thought “limited” sounded more conclusive than “little.”
 - One English-speaking participant indicated that “limited” sounds more official.
 - However, another English-speaking participant selected “little” and indicated that “limited” means that individuals chose to stop the research at a certain point even though there is more research to be done.
- Over half of Korean-, Cantonese-, Bengali-, and Amharic-speaking participants preferred the word “limited.”
- The Cantonese participants remarked that the translation of “little” and “limited” from English to Cantonese is difficult for Cantonese speakers to understand. One Cantonese-speaking participant indicated that “limited” and “little” have different meanings in Cantonese. The same participant suggested that participants should focus on the English version since the words have been directly translated from English. grammatical.

Five focus groups generally preferred the word “little”. These groups are bulleted below with key commentary:

➤ **Polish, Japanese, Hmong, Laotian, Spanish**

- An overwhelming majority of Polish-speaking participants selected the word “little.” A Polish-speaking participant indicated that “little” makes the sentence more sensible.

Another Polish-speaking participant remarked that “little” is a more credible word that suggests further studies will be completed in the future.

- An overwhelming majority of Japanese-speaking participants also preferred the word “little.” One Japanese-speaking participant selected “little” and indicated that the Japanese character for “limited” was too hard to read. Another Japanese-speaking participant noted that “limited” is a more positive expression even though it is more difficult to read. Over half of Hmong-speaking participants preferred “little,” and the remaining participants selected “limited,” which suggests either option could be used for the images.
- However, Korean- and Hmong-speaking participants preferred the word ‘studies’ in other parts of the image, suggesting that the “Few studies” language would be their preference.
- Over half of Laotian-speaking participants selected the word “little.”
 - One Laotian-speaking participant indicated that “limited” is hard to understand.
- An overwhelming majority of Spanish-speaking participants chose the word “little.” Spanish-speaking participants thought that “little” is easier to understand than “limited” and sounds more appropriate in context.
 - One Spanish-speaking participant indicated that “limited” is a more formal version of “little.”

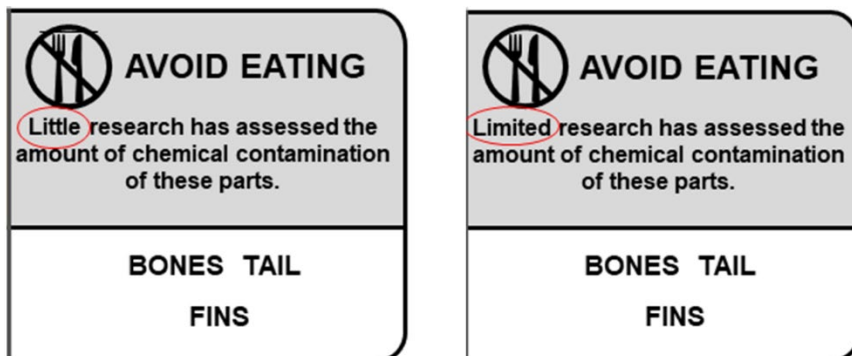
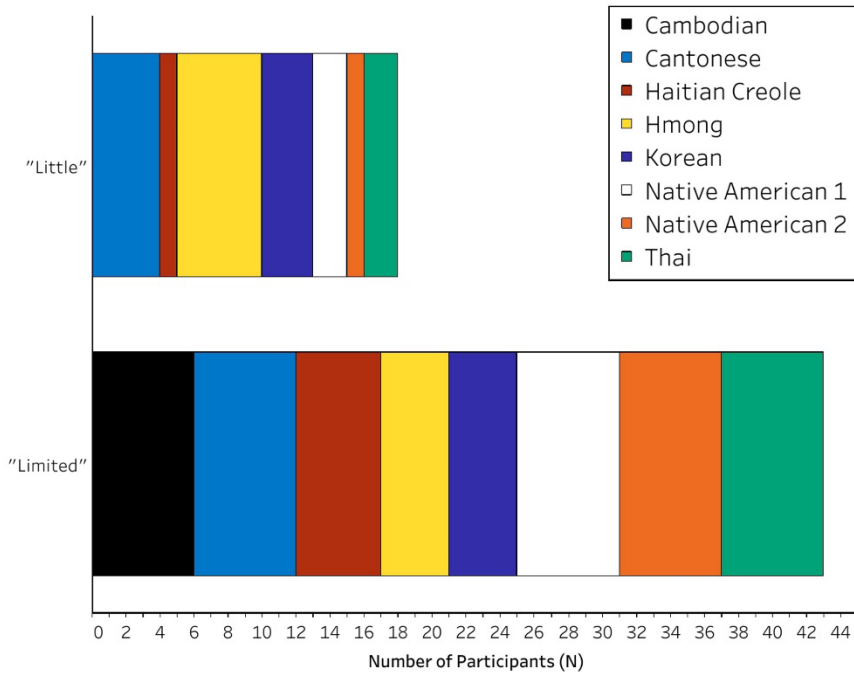


Figure 14. Image with wording differences: “little” vs. “limited”

A. Part 1



B. Part 2

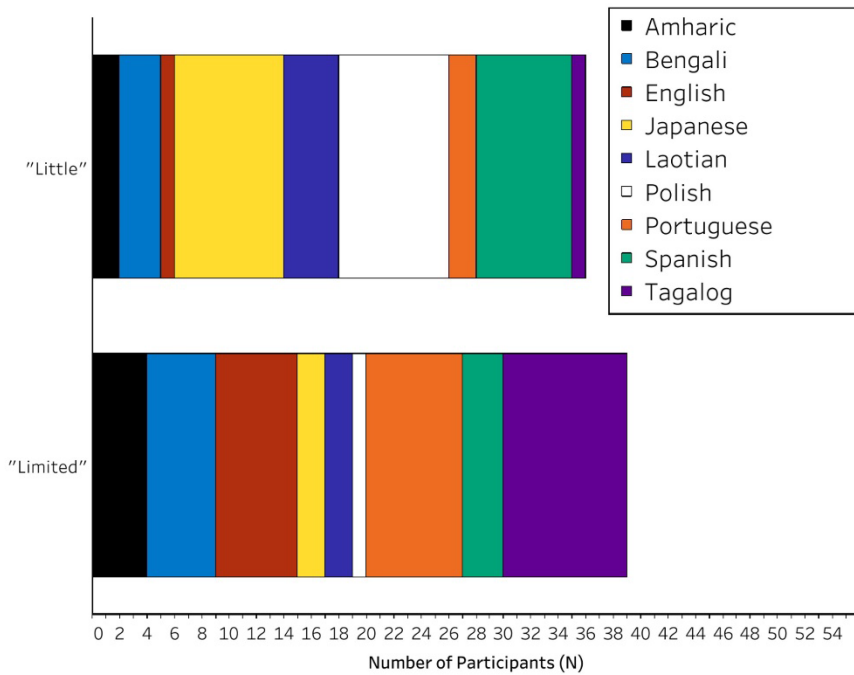


Figure 15. Results from Poll #9 (A. Part 1, B. Part 2): Which wording do you like better? “little” or “limited” (Single answer per participant.) An interactive version is available on the Tableau website.

Table 12. ICF identified the following quotations as relevant to Poll #9

Focus Group	Participant ^a and Quote
Korean	Participant D: "The word limited seems most appropriate. However, between the two words, little is better and understandable. Since research is continuously conducted and the results may change at any time, and there are various studies in the world, the word "limited" conveys the feeling that not much analysis has been done on the existing research."
Hmong	Participant G: "They're both very similar. For "little" means it's not necessarily every day the act of finding the research. However, for "there's limited research", is a little different, because there isn't anyone dedicated that would find out about how the fishes are doing."
Cambodian	Participant E: "The word "Little" is not suitable to use. The word 'Limited' is suitable to use in this context."
Native American Group 1	Participant A: "I chose 'limited' because I feel like I associate little with size and limited with an amount if that makes sense [...] Just some has been done, just not a lot. Not enough to be definitive. [There are] no conclusive numbers."
Native American Group 2	Participant B: "I feel like little is [not giving] a conclusive statement. Like probably based on just a quick research, but limited is kind of okay. It might be [limited], but we are conclusive of our results. So that's what I see. So, the little is not conclusive, while the 'limited' is like giving a conclusive statement based on the data they have."
Cantonese	Participant B: "If you use English to translate the sentence, then it has no problem. But if you just read it off in Chinese then the sentences have different meaning[s]. The first one means few research is done and the second one means there is limited amount of research to support the study."
Haitian Creole	Participant B: "I chose 'limited' because it made more sense to me when I was reading the images."
Thai	<p>Participant F: "I agree with [Participant H] because the word 'little of work' for consumers may mean that the data may not be sufficient to build confidence whether this data is true or not, but the word 'limited' may have had a lot of research done, and the limitations may be related to the type of fish or the place where the fish are raised or caught."</p> <p>Participant H: "Between a few pieces of work for me refers to either little research or a small number of research pieces, but for the word 'limited,' it may mean there's been a lot of research, but there's a framework for the research that's just this, but there can be a lot of research."</p>
Polish	<p>Participant A: "I chose the option Little because the whole sentence is simply more sensible. Not just words. Little, it's just about the whole."</p> <p>Participant G: "I chose little, somehow it gives me more trust, because I know that there may be more of these studies in the future."</p>

Focus Group	Participant ^a and Quote
Japanese	<p>Participant A: "I chose 'little.' With 'limited,' I thought the kanji (Japanese character) was too hard."</p> <p>Participant B: "I chose 'little.' In general, it is easy to read"</p> <p>Participant J: "Saying 'little' sounds like, sort of difference between a half-entity and a half-fool after all. I thought 'little' was a rather negative expression. And 'limited' is 'limited,' a positive expression that there is something, although it is limited. I chose 'limited' because I wanted to vote for the affirmative. I also agree that 'little' is easier to read as a word and in the form of writing as hiragana."</p>
Laotian	<p>Participant C: "'Limited' is hard to understand."</p>
Tagalog	<p>Participant C: "And I chose 'limited' because it seems more credible to use that word compared to 'little' as using little might make the image seem less credible when trying to attract people's attention."</p> <p>Participant E: "The one I chose is 'limited' because when you listen to it, 'limited' sounds a bit better compared to 'little.' The word 'little' seems a bit plain."</p> <p>Participant I: "Same with [Participant E], I've chosen the 'limited' one because I can understand it faster and simpler to understand."</p>
Spanish	<p>Participant H: "Maybe because little is easier to understand than limited. And also, because limited would be like they can't... And [little] sounds better in context."</p> <p>Participant I: "Evaluated is the right way to use it [...] because they are supposed to be doing a study. So, they are already evaluating the information that is being given [...] and assessed only is like we are going with the same thing that not, which [...] is not the way to say it."</p> <p>Participant I: "Limited, for me, at least is a more formal way of saying little."</p>
English	<p>Participant B: "I think [little] because there are still more research to be done. While 'limited' means there could be more research that should be done but they just choose to do limited research. [...] 'Limited' means the research has a limit that it could be continued, but no, they choose to stop there, but means they are still yet to deep into this issue."</p> <p>Participant G: "[Limited] just sounds more official."</p>

^aThe participants' names were blinded using letters and only a selection of key quotes is presented in this table, and therefore, does not necessarily reflect the opinions of all participants.

After the poll #9 questions were answered and discussed, the participants were asked to indicate where they would expect to see the image and its information. The participants indicated:

- Fish Markets
- Packaging
- Fishing licenses
- Markets
- Street posters/Billboards
- Stores (near fish)
- Fisheries
- Restaurants
- Bait shops
- Fishing/hunting camps
- Doctor's office
- Hospital/Medical Clinics
- Church
- Schools (e.g. elementary schools)
- Social media
- Written publications (e.g., magazines, newsletters, newspapers)
- Nutritional Education
- Occupational Education
- Transport hubs (bus stop, metro station)
- Government guidelines (e.g. Environmental Protection Agency (EPA) website)
- Electronic communications (e.g. apps)
- Television
- Facebook
- Tik Tok
- Pinterest
- YouTube
- Google

Participants in the Korean-speaking focus group suggested placing the image in places where many people would see it, including flyers at local markets or when issuing fishing licenses.

An overwhelming majority of Native American English-speaking participants indicated that information about fish might be found at a fishing dock or pier.

All Laotian-speaking participants, an overwhelming majority of Korean-, Cambodian-, Haitian Creole-, Polish-, Tagalog-, Spanish-, and English-speaking participants, half of Japanese-speaking participants, and under half of the Hmong- and Portuguese-speaking participants said they trusted the EPA as a source of health information. Similarly, all Cambodian-, Amharic-, Laotian-, Tagalog-, and Spanish-speaking participants, an overwhelming majority of Cantonese-, Thai-, Polish-, Japanese-, and English-speaking participants, and over half of Haitian Creole- and Portuguese-speaking participants said they trusted the information that government agencies provide about the health impacts of eating fish.

However, an overwhelming majority of Korean-speaking participants and over half of Hmong-speaking participants did not agree or disagree when asked if they trusted the information about the health impacts of eating fish provided by government agencies.

4. Preliminary Conclusions

4.1. General Conclusions

Images to convey which fish parts should and should not be eaten were drafted in multiple languages. Focus groups of primary audiences evaluated the effectiveness of the images and different phrases. Some key pieces of feedback regarding the images are:

- The preferred image among each of the focus groups was the “fish with QR code.”
- Each focus group provided suggestions on the images to better improve ease of understanding.
- The Hmong- and Cambodian-speaking participants suggested greater spacing between words. Similarly, the Thai-speaking participants suggested increasing the text size for better readability.
- The Cantonese- and Korean-speaking participants suggested using brighter colors. The Haitian Creole- and Thai-speaking participants suggested that green and red be used to convey safe and unsafe parts to eat, respectively, since these colors are attributable to good and bad. One Cantonese participant suggested incorporating patterns to accommodate people who are color blind.
 - The EPA considered this feedback. Because the existing fish image colors meet 508 compliance guidelines, the EPA determined that further color changes were not needed.
- The Native American English-speaking (Group 1) participants suggested that fish eggs be included in the image.
- Some Bengali-speaking participants found the fish image messaging to be unclear. One Bengali-speaking participant felt scared by the contents of the image.
- Amharic-speaking participants indicated that the fish image messaging was clear and the individual icons within the image attracted attention.
- Polish-speaking participants thought the color scheme of the fish image as a whole was unappealing and even unprofessional.
- Japanese-speaking participants thought the fish image did not correctly capture how Japanese people consume fish.
- Portuguese-speaking participants indicated that the information in the image was helpful, but the image itself was not visually compelling.

- Although Laotian-speaking participants thought that the image was useful, they described the value of eating fish parts that the image marked as throw away.
- Tagalog-speaking participants thought the image clearly signaled which parts of the fish are safe to eat. One Tagalog-speaking participant thought that brighter colors would be more appealing. Another Tagalog-speaking participant suggested that the image should explain why certain fish parts should be thrown away.
- Spanish-speaking participants thought that the image taught them which fish parts are healthier than others.
- English-speaking participants thought that the separation of different fish parts and the different colors made the diagram much easier to understand. Several participants added that the image provided new information that they had not previously considered.

The discussions regarding the phrasing within the fish image varied between focus groups. The phrases that the EPA selected for each focus group and the key evidence to support that selection are detailed below in **Section 4.1.1**. The preferred images with selected phrasings for all focus groups are displayed below in **Section 4.1.2**.

4.1.1. Phrase Selection by Focus Group

4.1.1.1. Hmong-speaking Focus Group

Figure 16 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English to be used for the Hmong translation. The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “**THROW AWAY**” and “**EAT**” text boxes: ***Generally, studies have found that these parts have higher/lower amounts of chemical contamination.***
 - The Hmong-speaking focus group was evenly divided between the “research” and “studies” option. However, the “studies” option was selected because participants remarked that the “studies” option was easiest to understand.
- Phrase selected by the EPA for the “**AVOID EATING**” text box: ***Few studies have evaluated the amount of chemical contamination of these parts.***
 - Over half of the Hmong-speaking participants preferred “evaluated” instead of “assessed” in the remaining language option, with one participant indicating that “evaluate” is a simpler and more concrete word.
 - Over half of the Hmong-speaking participants selected “little” over “limited,” with one participant adding that both “little” and “limited” are very similar. However, since participants indicated that “studies” was the easiest to understand, the “few studies” phrase was selected instead of “little research.”

4.1.1.2. Cambodian-speaking Focus Group

Figure 17 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English to be used for the Cambodian translation. The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “**THROW AWAY**” and “**EAT**” text boxes: ***Generally, research has found that these parts have higher/lower amounts of chemical contamination.***
 - The overwhelming majority of Cambodian-speaking participants preferred the “research” option.

- Phrase selected by the EPA for the “**AVOID EATING**” text box: ***Limited research has evaluated the amount of chemical contamination of these parts.***
 - An overwhelming majority of Cambodian-speaking participants preferred the “limited” and “evaluated” language options.
 - The overwhelming majority of Cambodian-speaking participants preferred the “research” option, indicating that the word “research” implies that a great level of effort has been made to analyze and synthesize information.

4.1.1.3. Korean-speaking Focus Group

Figure 18 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English to be used for the Korean translation. The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “**THROW AWAY**” and “**EAT**” text boxes: ***Generally, studies have found that these parts have higher/lower amounts of chemical contamination.***
 - The overwhelming majority of Korean-speaking participants preferred the “generally” language because it was clearer and easier to understand.
 - The overwhelming majority of the Korean-speaking focus group participants preferred the “studies” option in the text under the fish image because it sounded more authoritative.
- Phrase selected by the EPA for the “**AVOID EATING**” text box: ***Few studies have assessed the amount of chemical contamination of these parts.***
 - Even though over half of Korean-speaking participants preferred the phrasing “limited research” rather than “little research,” the EPA selected “few studies” for this phrasing since all Korean-speaking participants preferred the “studies” option because it sounded more authoritative.
 - Korean-speaking participants were split in their choice between “assessed” and “evaluated.” The Korean-speaking participants agreed that “assessed” is more common and easier to understand in their language.

4.1.1.4. Native American English-speaking (Groups 1 and 2)

Figure 19 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English to be used for the images for Native American audiences. The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “**THROW AWAY**” and “**EAT**” text boxes: ***These parts generally have higher/lower levels of chemical contamination.***
 - The two English-speaking Native American focus groups were split in their opinions between the “generally have,” “research,” and “studies” options.
 - The “generally have” option was selected since over half of the total Native American participants thought it was the easiest to understand.
 - One Native American English-speaking (Group 1) participant commented that “generally have” felt persuasive and was easier to understand. Participants in both focus groups remarked that the language could be interpreted as misinformation in certain contexts. The verbiage of “generally have” could aid in accounting for possible exceptions.

- Phrase selected by the EPA for the “**AVOID EATING**” text box: ***Limited research has evaluated the amount of chemical contamination of these parts.***
 - Both Native American English-speaking focus groups preferred the words “limited” and “evaluated.”
 - Participants from both focus groups stated that “evaluated” indicated a more quantitative result than the word option of “assessed.”
 - Between the two Native American English-speaking focus groups, the participants were split between “studies” and “research,” and one Group 2 participant event indicated that the options could be used interchangeably. Over half of the Native American English-speaking (Group 1) participants chose the “studies” option and thought “studies” sounded friendlier and “research” sounded more official. Over half of Native American English-speaking (Group 2) participants selected the “research” option, because they thought “research” seemed broader and more in-depth than just “studies.” The EPA selected “Limited research” based on their preference for the word “limited.”

4.1.1.5. Cantonese-speaking Focus Group

Figure 20 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English to be used for the Cantonese translation. The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “**THROW AWAY**” and “**EAT**” text boxes: ***Generally, research has found that these parts have higher/lower amounts of chemical contamination.***
 - Half of the Cantonese-speaking focus group preferred the “research” option, and none of the participants thought it was the hardest language option to understand.
- Phrase selected by the EPA for the “**AVOID EATING**” text box: ***“Limited research has evaluated the amount of chemical contamination of these parts.”***
 - Over half of participants favored the “limited” language option because it was more grammatically correct.

4.1.1.6. Haitian Creole-speaking Focus Group

Figure 21 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English to be used for the Haitian Creole translation. The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “**THROW AWAY**” and “**EAT**” text boxes: ***These parts generally have higher/lower amounts of chemical contamination.***
 - Half of the participants agreed that “generally have” is the easiest to understand
 - Participants universally agreed that “tend to have” is the most difficult to understand.
- Phrase selected by the EPA for the “**AVOID EATING**” text box: ***Limited studies have evaluated the amount of chemical contamination of these parts.***
 - The overwhelming majority of participants agreed that the “limited” option is the easiest to understand and conveyed the correct meaning.
 - Over half favored the “studies” option as opposed to the “research” option.
 - Note that evaluated/assessed have the same translation in Haitian Creole and the question about these terms was not asked to this focus group.

4.1.1.7. Thai-speaking Focus Group

Figure 22 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English to be used for the Thai translation. The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “THROW AWAY” and “EAT” text boxes: ***Generally, research has found that these parts have higher/lower amounts of chemical contamination.***
 - All participants agreed the “research” option was the most credible.
- Phrase selected by the EPA for the “AVOID EATING” text box: ***Limited research has evaluated the amount of chemical contamination of these parts.***
 - The overwhelming majority of participants chose the “limited” and “evaluated” options.

4.1.1.8. Bengali-speaking Focus Group

Figure 23 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English to be used for the Bengali translation. The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “THROW AWAY” and “EAT” text boxes: ***Generally, research has found that these parts have higher/lower amounts of chemical contamination.***
 - The Bengali-speaking focus group participants were generally split across the phrase options. Half of Bengali-speaking participants found the “research” option the easiest to understand during poll #6, but in poll #5, over half of Bengali-speaking participants preferred the “studies” option. However, during the commentary, one participant indicated that “research” is more in-depth, and another participant remarked that “research” is in-depth and more credible than “studies.”
 - Under half of Bengali-speaking participants selected the “generally have” option. However, during the commentary, a Bengali-speaking participant indicated that ‘generally’ is synonymous with usually, which is preferable to them.

- Phrase selected by the EPA for the “**AVOID EATING**” text box: ***Limited research has assessed the amount of chemical contamination of these parts.***
 - Over half of Bengali-speaking participants preferred the word “limited.”
 - Note that evaluated/assessed have the same translation in Bengali and the question about these terms was not asked to this focus group.

4.1.1.9. Amharic-speaking Focus Group

Figure 24 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English to be used for the Amharic translation. The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “**THROW AWAY**” and “**EAT**” text boxes: ***Generally, studies have found that these parts have higher/lower amounts of chemical contamination.***
 - An overwhelming majority of Amharic-speaking participants selected the “generally have” option.
 - All Amharic-speaking participants preferred the “studies” option compared to the “research” option.
- Phrase selected by the EPA for the “**AVOID EATING**” text box: ***Limited research has assessed the amount of chemical contamination of these parts.***
 - Amharic-speaking participants were split between “evaluated” and “assessed,” but during their commentary. the participants indicated that “evaluated” means that something has not been finalized, whereas “assessed” suggests that something is certain, indicating preference towards “assessed.”
 - Over half of Amharic-speaking participants preferred the word “limited.”

4.1.1.10. Polish-speaking Focus Group

Figure 25 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English to be used for the Polish translation. The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “**THROW AWAY**” and “**EAT**” text boxes: ***These parts tend to have higher/lower levels of chemical contamination.***

- The Polish-speaking focus group participants typically agreed with one another. Over half of Polish-speaking participants preferred the “tend to have” option as opposed to the “generally have” option.
 - The overwhelming majority of Polish-speaking participants selected the “tend to have” option as the phrase that is the easiest to understand. However, several participants remarked that the easiest term is not necessarily the most convincing term. Polish-speaking participants were divided as to whether “research,” “studies,” “tend,” or “generally” was the most difficult to understand.
- Phrase selected by the EPA for the “**AVOID EATING**” text box: ***Few studies have assessed the amount of chemical contamination of these parts.***
- An overwhelming majority of Polish-speaking participants preferred the “studies” option compared to the “research” option, with one participant indicating that “studies” is more scientific and increases trust in the information.
 - An overwhelming majority of Polish-speaking participants selected the word “assessed,” suggesting that “assessed” was more definitive and scientific.
 - An overwhelming majority of Polish-speaking participants selected “little research” rather than “limited research.” However, the selection of the above phrasing was driven by the fact that the overwhelming majority of Polish-speaking participants preferred the “studies” option.

4.1.1.11. Japanese-speaking Focus Group

Figure 26 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English to be used for the Japanese translation. The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “**THROW AWAY**” and “**EAT**” text boxes: ***These parts generally have higher/lower levels of chemical contamination.***
- The Japanese-speaking focus group participants were often split among the language options for the “**THROW AWAY**” and “**EAT**” sections of the fish image. Half of Japanese-speaking participants selected the “generally have” option as the easiest word or phrase to understand rather than “tend to have,” “research,” or “studies.” The remaining Japanese-speaking participants were split between the “tend to have” and “research” options. Japanese-speaking participants were also divided as to which of the four language options was the most difficult to understand. Under half of Japanese-speaking participants selected “research” as the most difficult language option, and few

participants found “tend to have,” “generally have,” or “studies” as the hardest language choices to understand.

- Phrase selected by the EPA for the “**AVOID EATING**” text box: ***Little research has evaluated the amount of chemical contamination of these parts.***
 - The Japanese-speaking focus group participants were often divided among the language options for the “**AVOID EATING**” section of the image. Considering these often-split opinions, the selection of the above phrasing was driven by the fact that the overwhelming majority of participants preferred the words “little” and “evaluated,” while Japanese-speaking participants were evenly divided between the “research” and “studies” options and indicated that both word choices were similar.
 - One participant indicated that the Japanese character for “limited” (限定) was more difficult to read compared to the Japanese character for “little” (少し).

4.1.1.12. Portuguese-speaking Focus Group

Figure 27 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English to be used for the Portuguese translation. The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “**THROW AWAY**” and “**EAT**” text boxes: ***Generally, studies have found that these parts have higher/lower amounts of chemical contamination.***
 - The overwhelming majority of Portuguese-speaking participants chose the “studies” option.
- Phrase selected by the EPA for the “**AVOID EATING**” text box: ***Limited studies have evaluated the amount of chemical contamination of these parts.***
 - One Portuguese-speaking participant commented that “evaluated” means that detail was provided for every little part. Another Portuguese-speaking participant indicated that there is no difference between the two terms.
 - The overwhelming majority of Portuguese-speaking participants, preferred the word “limited.”

4.1.1.13. Laotian-speaking Focus Group

Figure 28 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English to be used for the Laotian translation. The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “**THROW AWAY**” and “**EAT**” text boxes: **Generally, research has found that these parts have higher/lower amounts of chemical contamination.**
 - The overwhelming majority of Laotian-speaking participants selected the “research” option compared to the “studies” option. Laotian-speaking participants thought that “research” should occur first since it involves gathering data and “studies” should occur after “research.”
- Phrase selected by the EPA for the “**AVOID EATING**” text box: ***Little research has assessed the amount of chemical contamination of these parts.***
 - An overwhelming majority of Laotian-speaking participants selected the word “assessed”. Although Laotian-speaking participants chose the word “assessed,” several participants noted that “assessed” is an uncertain term.
 - Over half of Laotian-speaking participants selected the word “little.”

4.1.1.14. Tagalog-speaking Focus Group

Figure 29 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English to be used for the Tagalog translation. Tagalog was also tested during the 2023 series of focus groups; the results in 2024 are consistent with the results from 2023 (Appendix S). The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “**THROW AWAY**” and “**EAT**” text boxes: **Generally, studies have found that these parts have higher/lower amounts of chemical contamination.**
 - Under half of Tagalog-speaking participants selected the “generally have” option. However, participants focused on discussing the merits of “research” versus “studies.”
 - Half of Tagalog-speaking participants selected “research” while the other half chose “studies.” Tagalog-speaking participants indicated that “studies” is easier to understand than “research,” which is a more specialized and complex word in Tagalog. One participant noted that most people will not understand the term “research” in Tagalog.

This same participant preferred a mix of English and Tagalog, known as Taglish. “Studies” was selected since it is easier to understand in Tagalog.

- One Tagalog-speaking participant thought that “generally have” language encourages someone to continue consuming fish as they typically do, without regard to safety information, whereas “research” provides a tangible reason to change fish consumption habits.
- Phrase selected by the EPA for the “**AVOID EATING**” text box: ***Limited studies have evaluated the amount of chemical contamination of these parts.***
- All Tagalog-speaking participants selected “evaluated” and noted that it is easier to understand and more common in everyday language. The overwhelming majority of Tagalog-speaking participants preferred “limited” and indicated that “limited” is more credible and easier to understand than “little.”
 - Several Tagalog-speaking participants indicated that “studies” is easier to understand in Tagalog as opposed to “research,” which involves more challenging words.

4.1.1.15. Spanish-speaking Focus Group

Figure 30 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English to be used for the Spanish translation. The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “**THROW AWAY**” and “**EAT**” text boxes: ***Generally, studies have found that these parts have higher/lower amounts of chemical contamination.***
- Under half of Spanish-speaking participants in the 2023 focus group thought that “studies” was the easiest to understand in poll 6, however, this option still received the most votes compared to the other options (**Appendix S**). In 2024, half of Spanish-speaking participants selected the “generally have” option and under half of Spanish-speaking participants preferred the “studies” option. Considering the 2023 focus group results in combination with the 2024 results, the phrase “*Generally, studies have found that these parts have higher/lower amounts of chemical contamination*” was selected. However, “generally have” and “studies” may both be acceptable.

- Phrase selected by the EPA for the “**AVOID EATING**” text box: ***Few studies have evaluated the amount of chemical contamination of these parts.***
 - 2023 Spanish-speaking focus group participants selected “studies” as the term that was the easiest to understand (**Appendix S**). 2024 Spanish-speaking focus group participants were split between “research” and “studies,” and indicated that “studies” is based on evidence and is a more convincing term.
 - An overwhelming majority of Spanish-speaking participants from the 2024 focus group chose the word “little.” 2024 participants thought that “little” is easier to understand than “limited” and sounds more appropriate in context. The phrase “few studies” was selected to represent the opinions of the Spanish-speaking focus group, primarily driven by the evidence described above demonstrating that participants found “studies” to be a more convincing term.

4.1.1.16. English-speaking Focus Group

Figure 31 (Section 4.1.2 below) shows the fish images with phrases selected by the EPA in English. The phrase selections are detailed below with key evidence to support the selection:

- Phrase selected by the EPA for the “**THROW AWAY**” and “**EAT**” text boxes: ***Generally, studies have found that these parts have higher/lower amounts of chemical contamination.***
 - English-speaking participants in the 2023 focus group thought that “studies” was the easiest to understand in poll 6 (**Appendix S**). Moreover, not a single English-speaking participant in the 2023 focus group selected “studies” as the hardest term to understand. In both the 2023 and 2024 focus groups, English-speaking participants also preferred “studies” compared to “research” in poll 5. One English-speaking participant in the 2024 focus group added that “studies” implies that “research” has been conducted. Thus, the phrase “*Generally, studies have found that these parts have higher/lower amounts of chemical contamination*” was selected.
- Phrase selected by the EPA for the “**AVOID EATING**” text box: ***Few studies have evaluated the amount of chemical contamination of these parts.***
 - English-speaking participants opted for the word “studies” when given the choice between “studies” and “research” in poll 5 in the 2024 focus group. One English-speaking participant added that “studies” is typically carried out by experts whereas anyone can do “research.” English-speaking participants in the 2023 focus group also preferred “studies,” and indicated that “studies” was more scientific and specific, whereas “research” was more general or subjective.

- The overwhelming majority of English-speaking participants selected the word “limited” over “little” in poll 9. One English-speaking participant thought that “limited” sounded more official. Although “limited” was selected by the participants, the phrase “few studies” will be used since “limited studies” is not typically used in spoken English.
- All English-speaking participants selected the word “evaluated” compared to “assessed” in poll 8. English-speaking participants thought that “evaluated” implies that testing has occurred, resulting in a conclusion. Thus, the phrase, “Few studies have evaluated the amount of chemical contamination of these parts” was selected.

4.1.2. Phrase Selections in Fish Images in English

A) Hmong Translation

**KEV NOJ NTSES UA KOJ MUAJ DAG ZOG ZOO
TAUM KOJ NOJ THWJ YA NTSES TWG!**

CUAM POV TSEG Ib tswm ntxim li, Txoj kev kawm tau pom tias cov feem no muaj kua paug ntawm no siab dua	NOJ Ib txwm ntxim li, Txoj kev kawm tau pom cov feem no muaj cov kua paug tsawg dua.	TSIS TXHOB NOJ Tsis tau muaj ntau cov tshawb nrhiav saib pom cov kua paug nyob hauv cov feem no
PLAB HNYUV DAIM TAWV TOB HAU TUS NTSES QHOV ROG	DAIM TSEEM NQAIJ THOOJ NQAIJ NTSES	POB TXHA KO TW COV TIS

Mus tshawb fawb hauv cov koom haum ntsees kom pab koj xaiv tus ntsees cov twg zoo thiab nyab xeeb rau koj noj, qhia koj noj li ca li cas, thiab noj ntau npaum cas.

[insert website to more information here]

[insert QR code here]

B) English Translation

**EATING FISH IS HEALTHY
WHEN YOU EAT THE RIGHT PARTS!**

THROW AWAY Generally, studies have found that these parts have higher amounts of chemical contamination.	EAT Generally, studies have found that these parts have lower amounts of chemical contamination.	AVOID EATING Few studies have evaluated the amount of chemical contamination of these parts.
ORGANS SKIN HEAD FAT	FILLET FISH STEAK	BONES TAIL FINS

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.

[insert website to more information here]

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Figure 16. Preferred image of Hmong-speaking participants: A) Hmong translation and B) English translation

A) Cambodian translation

ការបរិភោគត្រីនាំឱ្យមានសុខភាពល្អ នៅពេលដែលលោកអ្នកបរិភោគផ្នែកដែលត្រឹមត្រូវ!

បោះចោល ជាទូទៅ ការស្រាវជ្រាវបានរកឃើញថា ផ្នែកទាំងនេះមាន កម្រិតនៃការបំពុលថ្នាំគីមីខ្ពស់ជាង។	បរិភោគ ជាទូទៅ ការស្រាវជ្រាវបានរកឃើញ ផ្នែកទាំងនេះមាន កម្រិតនៃការបំពុលថ្នាំគីមីទាបជាង។	ជៀសវាងការបរិភោគ ការស្រាវជ្រាវមានកម្រិតបាន វាយតម្លៃបរិមាណនៃការបំពុលថ្នាំគីមីនៃផ្នែកទាំងនេះ។
ក្បាល ស្បែក ខ្នាត សរីរាង្គ	សាច់សុទ្ធ សាច់ត្រី	ឆ្អឹង កន្ទុយ ព្រាយ

ជ្រើសរើសត្រីដោយឆ្លាតវៃដោយពិនិត្យមើលការប្រឹក្សាអំពីត្រីមូលដ្ឋានសម្រាប់ជាព័ត៌មានថាត្រីណាខ្លះដែលបរិភោគបាន អាចបរិភោគបានញឹកញាប់ប៉ុណ្ណា និងអាចបរិភោគបានចំនួនប៉ុន្មាន។

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B) English translation

EATING FISH IS HEALTHY WHEN YOU EAT THE RIGHT PARTS!

THROW AWAY Generally, research has found that these parts have higher amounts of chemical contamination.	EAT Generally, research has found that these parts have lower amounts of chemical contamination.	AVOID EATING Limited research has evaluated the amount of chemical contamination of these parts.
ORGANS HEAD SKIN FAT	FILLET FISH STEAK	BONES TAIL FINS

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.

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Figure 17. Preferred image of Cambodian-speaking participants: A) Cambodian translation and B) English translation

A) Korean translation

생선은 적절한 부위를 섭취할 때 몸에 좋습니다!

버리세요 일반적으로 연구 결과에 의하면 이러한 부위에는 더 많은 양의 화학 오염 물질이 있습니다.	드세요 일반적으로 연구 결과에 의하면 이러한 부위에는 더 적은 양의 화학 오염 물질이 있습니다.	드시지 마세요 연구결과는 이러한 부위들의 화학적 오염의 양이 별로 없다고 판단했습니다.
내장 껍질 머리 지방	살코기/필렛 생선 스테이크	뼈 지느러미 꼬리

어떤 생선을 먹어야 안전한지, 얼마나 자주 먹어야 안전한지, 어느 정도를 먹어야 안전한지에 대한 정보는 현지 생선 권고자료를 확인하여 현명하게 생선을 선택하십시오.

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B) English translation

EATING FISH IS HEALTHY WHEN YOU EAT THE RIGHT PARTS!

THROW AWAY Generally, studies have found that these parts have higher amounts of chemical contamination.	EAT Generally, studies have found that these parts have lower amounts of chemical contamination.	AVOID EATING Few studies have assessed the amount of chemical contamination of these parts.
ORGANS SKIN HEAD FAT	FILLET FISH STEAK	BONES TAIL FINS

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.

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Figure 18. Preferred image of Korean-speaking participants: A) Korean translation and B) English translation

A) English translation for Native American audiences

EATING FISH IS HEALTHY WHEN YOU EAT THE RIGHT PARTS!

The diagram shows a fish with various parts labeled. 'FILLET' points to a piece of fish meat, and 'STEAK' points to a cross-section of fish with bones. Other parts like organs, skin, head, fat, bones, tail, and fins are also shown.

THROW AWAY	EAT	AVOID EATING
These parts generally have higher levels of chemical contamination.	These parts generally have lower levels of chemical contamination.	Limited research has evaluated the amount of chemical contamination of these parts.
ORGANS SKIN HEAD FAT	FILLET FISH STEAK	BONES TAIL FINS

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.

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Figure 19. Preferred image of Native American English-speaking participants: A) English translation for Native American audiences

A) Cantonese translation

**吃魚類對健康有益
但需要選擇正確的部位！**

🗑️ 扔掉	🍴 吃	🚫 避免吃
通常研究發現這些部位的化學污染較多。	通常研究發現這些部位的化學污染較少。	少量的研究評估在這些部位有數量的化學污染。
魚內臟 魚頭 魚皮 魚脂肪	魚肉片 魚排塊	魚骨頭 魚尾巴 魚鰭

請謹慎選擇魚類，通過查閱當地的魚類諮詢，了解哪些魚類是可以安全的吃，多久吃一次，還有吃多少。
[insert website to more information here]

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B) English translation

**EATING FISH IS HEALTHY
WHEN YOU EAT THE RIGHT PARTS!**

🗑️ THROW AWAY	🍴 EAT	🚫 AVOID EATING
Generally, research has found that these parts have higher amounts of chemical contamination.	Generally, research has found that these parts have lower amounts of chemical contamination.	Limited research has evaluated the amount of chemical contamination of these parts.
ORGANS HEAD SKIN FAT	FILLET FISH STEAK	BONES TAIL FINS

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.
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Figure 20. Preferred image of Cantonese-speaking participants: A) Cantonese translation and B) English translation

A) Haitian Creole translation

**MANJE PWASON BON POU SANTE
LÈ OU MANJE BON PATI YO!**

JETE	MANJE	EVITE MANJE
Pati sa yo anjeneral genyen pi wo nivo kontaminasyon chimik ladan yo	Pati sa yo anjeneral genyen pi ba nivo kontaminasyon chimik ladan yo	Etid ki evalye kantite kontaminasyon chimik pati sa yo genyen ladan yo limite
ÒGÀN TET	FILE PWASON STEK PWANSON	ZO KE NAJWA

Chwazi pwason avèk prekosyon/ ak sajes toujou tcheke konsèy otorite lokal yo pou enfòmasyon sou ki pwason ke ou kapab manje san pwoblem, konbyen fwa ou kapab manje yo, ak kantite ou kapab manje.

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B) English translation

**EATING FISH IS HEALTHY
WHEN YOU EAT THE RIGHT PARTS!**

THROW AWAY	EAT	AVOID EATING
These parts generally have higher levels of chemical contamination.	These parts generally have lower levels of chemical contamination.	Limited studies have evaluated the amount of chemical contamination of these parts.
ORGANS HEAD	FILLET FISH STEAK	BONES TAIL FINS

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.

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Figure 21. Preferred image of Haitian Creole-speaking participants: A) Haitian Creole translation and B) English translation

A) Thai translation

การบริโภคปลาจะมีเป็นประโยชน์ต่อร่างกายมากถ้าบริโภคชิ้นส่วนที่ถูกต้อง

การทิ้งให้เสีย โดยทั่วไปของงานวิจัยได้พบว่าในชิ้นส่วนปลาเหล่านี้มีปริมาณการปนเปื้อนของสารเคมีในระดับที่สูงกว่า	การบริโภค โดยทั่วไปของงานวิจัยได้พบว่าในชิ้นส่วนปลาเหล่านี้มีปริมาณการปนเปื้อนของสารเคมีในระดับที่ต่ำกว่า	หลีกเลี่ยงการบริโภค มีงานวิจัยที่จำกัด ได้มีการประเมินปริมาณการปนเปื้อนของสารเคมีในชิ้นส่วนเหล่านี้
ส่วนเครื่องในปลา ส่วนหนังปลา ส่วนหัวปลา ส่วนไขมันปลา	ส่วนเนื้อปลา ส่วนสเต็กปลา	ส่วนก้างปลา ส่วนหางปลา ส่วนครีบปลา

ควรเลือกบริโภคปลาอย่างชาญฉลาดโดยการตรวจสอบคำแนะนำจากคนในพื้นที่ว่าปลาชนิดใดบ้างที่ปลอดภัยสำหรับการบริโภค ความถี่ในการบริโภคและปริมาณในการบริโภคควาเท่าไร

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B) English translation

EATING FISH IS HEALTHY WHEN YOU EAT THE RIGHT PARTS!

THROW AWAY Generally, research has found that these parts have higher amounts of chemical contamination.	EAT Generally, research has found that these parts have lower amounts of chemical contamination.	AVOID EATING Limited research has evaluated the amount of chemical contamination of these parts.
ORGANS SKIN HEAD FAT	FILLET FISH STEAK	BONES TAIL FINS

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.

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Figure 22. Preferred image of Thai-speaking participants: A) Thai translation and B) English translation

A) Bengali translation

মাছ খাওয়া স্বাস্থ্যকর যখন আপনি সঠিক অংশগুলোকে খান!

ফেলে দেওয়া উচিত সাধারণত, গবেষণার মাধ্যমে পাওয়া গেছে যে এই অংশগুলোতে রাসায়নিক দূষণের উচ্চ মাত্রা থাকে।	খাওয়া উচিত সাধারণত, গবেষণার মাধ্যমে পাওয়া গেছে যে এই অংশগুলোতে রাসায়নিক দূষণের নিম্ন মাত্রা থাকে।	খাওয়া এড়িয়ে চলা এই অংশগুলোতে রাসায়নিক দূষণের অস্তিত্ব মূল্যায়ন করেছে এমন গবেষণা সীমিত।
অঙ্গ মাথা	ছাল চর্বি	কাঁটা লেজ পাখনা

ফিলেট
স্টেক

কোন মাছ খাওয়া নিরাপদ, সেগুলোকে কতটা ঘন-ঘন খাওয়া উচিত এবং কতটা মাত্রায় খাওয়া উচিত এমন সব বিষয় সম্পর্কে আরো তথ্য জানার জন্য স্থানীয় মাছ সম্পর্কিত পরামর্শগুলোকে দেখে বিবেচনার সঙ্গে মাছ নির্বাচন করবেন।
[insert website to more information here]

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B) English translation

EATING FISH IS HEALTHY WHEN YOU EAT THE RIGHT PARTS!

THROW AWAY Generally, research has found that these parts have higher amounts of chemical contamination.	EAT Generally, research has found that these parts have lower amounts of chemical contamination.	AVOID EATING Limited research has assessed the amount of chemical contamination of these parts.
ORGANS HEAD	SKIN FAT	BONES TAIL FINS

FILLET
STEAK

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.
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Figure 23. Preferred image of Bengali-speaking participants: A) Bengali translation and B) English translation

A) Amharic translation

ዓሳ መብላት ጤናማ ነው። ትክክለኛዎቹን ክፍሎች ከተመገቡ!

አጥንቱ የወጣለት የዓሳ ስጋ (ፊሌ)

ዋና ስጋ (ስቴክ)

ጣሉ	ብሉ	ከመብላት ተቆጠቡ
በአጠቃላይ እነዚህ ክፍሎች ከፍተኛ መጠን የኬሚካል ብክለት እንዳላቸው ጥናቶች አግኝተዋል።	በአጠቃላይ እነዚህ ክፍሎች ዝቅተኛ መጠን የኬሚካል ብክለት እንዳላቸው ጥናቶች አግኝተዋል።	የእነዚህን ክፍሎች የኬሚካል ብክለት መጠንን የተወሰኑ ምርምሮች መዝነውታል።
የውስጥ ክፍሎች ጭንቅላት	ቆዳ ሱብ	አጥንቶች ጅራት
የዓሳ ስጋ ክፍል (ስቴክ)	አጥንቱ የወጣለት የዓሳ ስጋ (ፊሌ)	የዓሳ ክንፍ መሰል ነገሮች (fins)

የትኞቹ ዓሳዎች ለመመገብ ጤናማ እንደሆኑ፣ በምን ያህል ጊዜ እንደሚበሉ እና መብላት ስለሚኖርባችሁ መጠን መረጃ ለማግኘት በአካባቢው የሚገኙ የዓሳ አመጋገብ ምክር ባለሙያዎች ዓሳዎቹን በጥበብ ምረጡ።

[insert QR code here]

[insert website to more information here]

B) English translation

EATING FISH IS HEALTHY WHEN YOU EAT THE RIGHT PARTS!

FILLET

STEAK

THROW AWAY	EAT	AVOID EATING
Generally, studies have found that these parts have higher amounts of chemical contamination.	Generally, studies have found that these parts have lower amounts of chemical contamination.	Limited research has assessed the amount of chemical contamination of these parts.
ORGANS HEAD	SKIN FAT	BONES TAIL FINS
	FILLET FISH STEAK	

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.

[insert QR code here]

[insert website to more information here]

Figure 24. Preferred image of Amharic-speaking participants: A) Amharic translation and B) English translation

A) Polish translation

**JEDZENIE RYB JEST ZDROWE
KIEDY JESZ WŁAŚCIWE CZĘŚCI!**

WYRZUĆ Te części mają na ogół wyższy poziom zanieczyszczenia chemicznego.	JEDZ Te części mają na ogół niższy poziom zanieczyszczenia chemicznego.	UNIKAJ JEDZENIA Niewiele badań oszacowało stopień zanieczyszczenia chemicznego tych części.
WNĘTRZNOŚCI GŁOWA	SKÓRA TŁUSZCZ	FILET STEK
		OŚCI OGON PŁETWY

Mądrze wybieraj ryby do spożycia. Aby uzyskać więcej informacji o tym, które ryby są bezpieczne do spożycia, jak często je jeść oraz jaką ilość ryb można bezpiecznie spożywać, zawsze sprawdzaj lokalne zalecenia. [insert QR code here]
[insert website to more information here]

B) English translation

**EATING FISH IS HEALTHY
WHEN YOU EAT THE RIGHT PARTS!**

THROW AWAY These parts tend to have higher levels of chemical contamination.	EAT These parts tend to have lower levels of chemical contamination.	AVOID EATING Few studies have assessed the amount of chemical contamination of these parts.
ORGANS HEAD	SKIN FAT	FILLET FISH STEAK
		BONES TAIL FINS

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat. [insert QR code here]
[insert website to more information here]

Figure 25. Preferred image of Polish-speaking participants: A) Polish translation and B) English translation

A) Japanese translation

**正しい部位を食べれば
魚介類を食べることは健康に良い！**

捨てる これらの部位は一般的に化学汚染レベルが高いです。	食べる これらの部位は一般的に化学汚染レベルが低いです。	食べるのを避ける これらの部位の化学汚染量を評価した研究はほとんどありません。
内臓 頭部 皮 脂肪	フィレ フィッシュステーキ	骨 尾 ヒレ

地元の魚介類諮問機関から、安全な魚がどれで、どれほど頻繁に食べてよいのか、また食べてよい量について情報を得て魚を賢く選びましょう
 [insert website to more information here]

[insert QR code here]

B) English translation

**EATING FISH IS HEALTHY
WHEN YOU EAT THE RIGHT PARTS!**

THROW AWAY These parts generally have higher levels of chemical contamination.	EAT These parts generally have lower levels of chemical contamination.	AVOID EATING Little research has evaluated the amount of chemical contamination of these parts.
ORGANS SKIN HEAD FAT	FILLET FISH STEAK	BONES TAIL FINS

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.
 [insert website to more information here]

[insert QR code here]

Figure 26. Preferred image of Japanese-speaking participants: A) Japanese translation and B) English translation

A) Portuguese translation

CONSUMIR PEIXE É SAUDÁVEL QUANDO VOCÊ COME AS PARTES CORRETAS!

DESCARTAR Geralmente, estudos revelaram que estas partes possuem maiores quantidades de contaminação química.	CONSUMIR Geralmente, estudos revelaram que estas partes possuem menores quantidades de contaminação química.	EVITAR CONSUMIR Estudos limitados avaliaram a quantidade de contaminação química dessas partes.
VÍSCERAS CABEÇA	PELE GORDURA	OSSOS RABO BARBATANA
FILÉ BIFE DE PEIXE		

Escolha o peixe de forma sábia consultando alertas locais de pescados sobre informações relativas à segurança no consumo, frequência e quantidade para consumo.

[insert website to more information here]

[insert QR code here]

B) English translation

EATING FISH IS HEALTHY WHEN YOU EAT THE RIGHT PARTS!

THROW AWAY Generally, studies have found that these parts have higher amounts of chemical contamination.	EAT Generally, studies have found that these parts have lower amounts of chemical contamination.	AVOID EATING Limited studies have evaluated the amount of chemical contamination of these parts.
ORGANS HEAD	SKIN FAT	BONES TAIL FINS
FILLET FISH STEAK		

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.

[insert website to more information here]

[insert QR code here]

Figure 27. Preferred image of Portuguese-speaking participants: A) Portuguese translation and B) English translation

A) Laotian translation

**ກິນປາມີສຸຂະພາບດີ
ເມື່ອທ່ານກິນສ່ວນທີ່ຖືກຕ້ອງ!**

ຖິ້ມ <small>ໂດຍທົ່ວໄປແລ້ວ, ຄົນຄວ້າໄດ້ພົບເຫັນວ່າ ພາກສ່ວນເຫຼົ່ານີ້ມີປະລິມານການບັນເປືອນສານເຄມີສູງກວ່າ.</small>	ກິນ <small>ໂດຍທົ່ວໄປແລ້ວ, ຄົນຄວ້າໄດ້ພົບເຫັນວ່າ ພາກສ່ວນເຫຼົ່ານີ້ມີປະລິມານການບັນເປືອນສານເຄມີຕ່ຳກວ່າ.</small>	ຫຼີກເວັ້ນການກິນ <small>ຄົນຄວ້າ ໜ້ອຍດຽວ ໄດ້ກວດກາປະລິມານການບັນເປືອນສານເຄມີຂອງພາກສ່ວນເຫຼົ່ານີ້.</small>
ຕົ້ອງໃນ ຫົວ ຫີນ ໄຂມັນ	ລື້ອປາ ຊີ້ນປາ	ກະດູກ ຫາງ ຄີບ

ເລືອກປາຢ່າງສະຫລາດໂດຍການກວດກາເບິ່ງຄຳແນະນຳຂອງປາໃນທ້ອງຖິ້ນສຳລັບຂໍ້ມູນກ່ຽວກັບວ່າປາໃດທີ່ປອດໄພທີ່ຈະກິນ, ກິນເລື້ອຍໆ, ແລະ ປະລິມານທີ່ຈະກິນ.

[insert website to more information here]

[insert QR code here]

B) English translation

**EATING FISH IS HEALTHY
WHEN YOU EAT THE RIGHT PARTS!**

THROW AWAY <small>Generally, research has found that these parts have higher amounts of chemical contamination.</small>	EAT <small>Generally, research has found that these parts have lower amounts of chemical contamination.</small>	AVOID EATING <small>Little research has assessed the amount of chemical contamination of these parts.</small>
ORGANS SKIN HEAD FAT	FILLET FISH STEAK	BONES TAIL FINS

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.

[insert website to more information here]

[insert QR code here]

Figure 28. Preferred image of Laotian-speaking participants: A) Laotian translation and B) English translation

A) Tagalog translation

ANG PAGKAIN NG ISDA AY MALUSOG KAPAG KUMAIN KA NG TAMANG BAHAGI!

ITAPON Karaniwan, ayon sa pag-aaral natuklasan na ang mga bahaging ito ay may mas mataas na halaga ng kemikal na kontaminasyon.	KAININ Karaniwan, ayon sa pag-aaral natuklasan na ang mga bahaging ito ay may mas mababang halaga ng kemikal na kontaminasyon.	IWASANG KAININ Limitadong pag-aaral ay nasuri ang dami ng mga kemikal sa mga bahaging ito.
LAMAN LOOB ULO BALAT TABA	FILLET NG ISDA STEAK NG ISDA	TINIK BUNTOT PALIKPIK

Piliin nang maingat ang isda sa pamamagitan ng pagsuri sa lokal na mga tagubilin para sa impormasyon kung aling isda ang ligtas na kainin, gaano kadalas ito kainin, at kung gaano kadami ang dapat kainin.

[insert website to more information here]

[insert QR code here]

B) English translation

EATING FISH IS HEALTHY WHEN YOU EAT THE RIGHT PARTS!

THROW AWAY Generally, studies have found that these parts have higher amounts of chemical contamination.	EAT Generally, studies have found that these parts have lower amounts of chemical contamination.	AVOID EATING Limited studies have evaluated the amount of chemical contamination of these parts.
ORGANS SKIN HEAD FAT	FILLET FISH STEAK	BONES TAIL FINS

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.

[insert website to more information here]

[insert QR code here]

Figure 29. Preferred image of Tagalog-speaking participants: A) Tagalog translation and B) English translation

A) Spanish translation

¡COMER PESCADO ES SALUDABLE CUANDO COMES LAS PARTES SEGURAS!

TIRAR A LA BASURA Generalmente, estudios han encontrado que estas partes tienen mayores cantidades de contaminación química.	COMER Generalmente, estudios han encontrado que estas partes tienen menores cantidades de contaminación química.	EVITE COMER Pocos estudios han evaluado la cantidad de contaminación química de estas partes.
ÓRGANOS CABEZA	PIEL GRASA FILETE DE PESCADO	HUESOS COLA ALETAS

Elija el pescado sabiamente consultando los avisos locales para obtener información sobre qué pescado es seguro para comer, con qué frecuencia comerlo y la cantidad que debe comer.

[insert website to more information here]

[insert QR code here]

B) English translation

EATING FISH IS HEALTHY WHEN YOU EAT THE RIGHT PARTS!

THROW AWAY Generally, studies have found that these parts have higher amounts of chemical contamination.	EAT Generally, studies have found that these parts have lower amounts of chemical contamination.	AVOID EATING Few studies have evaluated the amount of chemical contamination of these parts.
ORGANS HEAD	SKIN FAT FILLET FISH STEAK	BONES TAIL FINS

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.

[insert website to more information here]

[insert QR code here]

Figure 30. Preferred image of Spanish-speaking participants: A) Spanish translation and B) English translation

A) English translation

**EATING FISH IS HEALTHY
WHEN YOU EAT THE RIGHT PARTS!**

THROW AWAY	EAT	AVOID EATING
Generally, studies have found that these parts have higher amounts of chemical contamination.	Generally, studies have found that these parts have lower amounts of chemical contamination.	Few studies have evaluated the amount of chemical contamination of these parts.
ORGANS HEAD SKIN FAT	FILLET FISH STEAK	BONES TAIL FINS

Choose fish wisely by checking local fish advisories for information on which fish are safe to eat, how often to eat them, and the amount to eat.

[insert website to more information here]

[insert QR code here]

Figure 31. Preferred image of English-speaking participants: A) English translation