Issue 8A (supplement to issue 8): Consumer knowledge of the health properties of fish

This study was conducted to assess consumers' knowledge of the health properties of fish. Face to face interviews were held with 371 consumers (classified in seven age categories) chosen at random who were shopping in three major retail outlets in Dublin in February/March 2013.This number was interviewed in order to get 100 consumers in each outlet who purchased and ate fish. Store 1 was in a working class area and stores 2 & 3 in middle class areas[1].

Each interview took 10 minutes and the 12 questions asked of each consumer were: (Q1) how often do you buy fish; (Q2) what form is it in; (Q3) which species do you prefer; (Q4) why do you buy fish; (Q5) is fish good for health; (Q6) why is fish good for health; (Q7) have you heard of omega-3 fish oils; (Q8) why are omega-3 fish oils good for health; (Q9) which fish species contain significant amounts of omega-3 oils; (Q10) have you heard of EPA and DHA; (Q11) what are EPA and DHA; (Q12) is fish good value for money.

RESULTS AND OUTCOMES

1. Age and gender profile (Tables 1 and 2)

Table 1: Age and gender profile of 300 consumers (100+100 +100) who purchased and ate fish (data are number of consumers in each category)

Age	Store 1		Store 2		Store 3		
	M[a]	F[b]	M	F	M	F	SUM (%)
<20	0	0	0	0	0	0	0 (0)
20-30	3	5	11	16	2	5	42 (14.0)
31-40	6	10	6	13	3	12	50 (17.0)
41-50	10	20	9	14	3	10	66 (22.0)
51-60	7	19	6	15	4	24	75 (25.0)
61-70	4	14	3	3	8	19	51 (16.7)
>70	1	1	3	1	6	4	16 (5.3)
SUM	**31**	**69**	**38**	**62**	**26**	**74**	**300 (100)**
Comment: There were 95 males & 205 females. Distribution of males & females was similar from store to store. Store 2 had more consumers in the 20-30 year age group while stores 1 & 3 had more in the 51-60 & 61-70 year groups							

[a]Male, [b]Female

Table 2: Age and gender profile of 71 consumers (27+24+20) who did not eat fish (data are number of consumers in each category)

Age	Store 1		Store 2		Store 3		SUM (%)
	M	F	M	F	M	F	
<20	0	0	3	0	0	1	4 (5.6)
20-30	0	4	6	5	1	2	18 (25.4)
31-40	1	5	7	1	2	1	17 (23.9)
41-50	5	6	2	0	0	2	15 (21.1)
51-60	1	4	0	0	3	5	13 (18.3)
61-70	0	0	0	0	0	2	2 (2.8)
>70	0	1	0	0	1	0	2 (2.8)
SUM	**7**	**20**	**18**	**6**	**7**	**13**	**71 (100)**

Comment: Seventy one (19%) of 371 consumers interviewed did not purchase or eat fish. Females predominated in stores 1 & 3 but the opposite was the case in Store 2.

2. Data for the three stores (Tables 3-12)

Table 3: **Q1**: Frequency of fish purchase by 300 consumers in three retail stores (100+100+100) (data are % of consumers citing each category)

Frequency	Store 1 %	Store 2 %	Store 3 %	Overall %
Once/week	42	27	37	35.3
Twice/week	25	23	28	25.3
3-4 times/week	5	13	22	13.3
Once/month	10	9	2	7.0
Twice/month	15	15	10	13.3
3 times/month	1	11	1	4.3
Once/3 month	1	2	0	1.0
In bulk	1	0	0	0.33
SUM	**100**	**100**	**100**	**100)**

Comment: 74% of consumers bought fish at least once per week. On a store basis 72% of consumers (Store 1) purchased fish at least once per week compared with 63% (Store 2) & 87% (Store 3).

Table 4: **Q2**: Form of fish purchased by 300 consumers in three retail stores (100+100+100) (Σ%>100; a number of forms can be cited by each person) (data are % of consumers citing each form)

Form	Store 1 %	Store 2 %	Store 3 %	Overall (%)
Fresh (on ice)	91	71	96	86.0
Pre-packs	19	49	22	30.0
Frozen	4	52	9	21.7
Canned	1	34	0	11.7
SUM	**115**	**206**	**127**	**149.3**

Comment: Fish from the ice counter was by far the most popular form followed by chilled pre-packs, frozen & canned. Ice counter percentages for Stores 1 & 2 seem falsely high & suggest that little pre-packed or frozen fish was being purchased; this was not the case as these stores stocked significant amounts of these products. The ice counter figure was lower for Store 2 but this store had a high figure for canned compared with Stores 1 & 3. This corresponds to the high citing of tuna as a popular canned species (Table 5) by 20-30 year olds; they also had the highest citation of 'convenience' as a reason for purchasing fish (Table 6).

Table 5**: Q3:** Preferred fish species of 300 consumers in three retail stores (100+100+100) (data are % of consumers citing each species) (Σ%>100; a number of species can be cited by each person)

Species	Store 1 %	Store 2 %	Store 3 %	Overall %
Cod	62	67	40	56.3
Farmed salmon	50	53	56	53.0
Hake	10	6	30	15.3
Haddock	13	18	15	15.3
Mackerel	13	21	10	14.7
Plaice	10	26	8	14.7
Tuna	3	34	5	14.0
Prawns	0	21	13	11.3
Farmed sea bass	16	9	7	10.7
20 other species <10%[a]	44	38	57	46.3
SUM	**221**	**293**	**241**	**252**

Comment: Cod & salmon were by far the most popular species. Striking features were the high preferences for hake (Store 3), mackerel, plaice, tuna, prawns (Store 2) & bass (Store 1). The high citation for tuna (Store 2) may be due to the larger number of 20-30 year olds interviewed in that store. The zero citation for prawns (Store 1) is a feature of social class as is the lower number of species cited (Σ% value of 221).

[a]Species cited by <10% of consumers in each of stores 1, 2 and 3

Table 6: **Q4:** Why buy fish? Responses from 300 consumers in three retail stores (100+100+100) (data are % of consumers citing each reason) (Σ%>100; more than one reason can be cited per person)

	Store 1	Store 2	Store 3	Overall
Reason	**%**	**%**	**%**	**%**
Like it	62	65	63	63.3
Health	41	79	48	56.0
Change/variety	5	36	11	17.3
Convenience	0	14	1	5.0
Vegetarian	0	0	7	2.3
SUM	**108**	**194**	**130**	**144**
Comment: 'Like it' & 'health' were the two main reasons for purchasing fish. The response from the three stores was similar for the former but Store 2 had a much higher citation for health.				

Q 5: Is fish good for health?: All consumers (100%) answered 'yes' when the question 'is fish good for health' was prompted.

Table 7: **Q6:** Reasons given for fish being good for health: Responses from 300 consumers in three retail stores (100+100+100) (data are % of consumers citing each reason) (Σ%>100; more than one reason can be cited by each person)

	Store 1	Store 2	Store 3	Overall
Reasons	**%**	**%**	**%**	**%**
Fish oils	64	41	54	53.0
Low calorie/fat	3	45	15	21.0
Protein content	3	25	4	10.7
Brain health	9	10	5	8.0
Goodness/nutrients	5	12	6	7.7
Good for heart	1	14	4	6.3
Vitamins/minerals		15	3	6.0
9 reasons <3%[a]	8	18	15	13.7
Don't know	14	4	8	8.7
SUM	**107**	**184**	**114**	**135**
Comment: Fish oil content & low calorie/fat were the two principal reasons cited for fish being good for health. Consumers from Store 2 were the most knowledgeable; i.e. lowest level of 'don't knows' (4%) and highest Σ% value (184) indicating that they were citing a number of reasons why fish are good for health. Consumers from Store 1 were the least knowledgeable.				

[a]Reasons cited by <3% of consumers in each of stores 1, 2 and 3

Q7: Have you heard of omega-3 fish oils? : 98% of consumers said 'yes' and 2% said 'no'. This is strong evidence that the omega-3 message is well recognized.

Table 8: **Q8:** Why are ω-3 fish oils good for health? Responses from 300 consumers in three retail stores (100+100+100) (data are % of consumers citing each reason) (Σ%>100; more than one reason can be cited by each person)

Reasons	Store 1 %	Store 2 %	Store 3 %	Overall %
Good for heart	16	31	22	23.0
Good for brain health	19	31	18	22.6
Lubricates/joints	9	4	11	8.0
Lowers cholesterol	4	10	9	7.7
Good for skin	3	4	3	3.3
Good for circulation	1	7	1	3.0
10 reasons < 3%[a]	14	19	16	16.3
Don't know	42	30	34	35.3
SUM	**108**	**136**	**114**	**119**

Comment: Reasons why omega-3 fish oils are good for health were unknown to many consumers with an overall don't know figure of 35%. Middle class consumers were more knowledgeable than working class. Heart & brain health were the two most cited reasons as to why ω-3 fish oils are good for health, especially by Store 2 consumers.

[a]Reasons cited by <3% of consumers in each of stores 1, 2 and 3

Table 9: **Q9:** Which fish species contain significant amounts of ω-3 oils? Responses from 300 consumers in three retail stores (100+100+100) (data are % of consumers citing each species) (Σ%>100; more than one species can be cited by each person)

Species	Store 1 %	Store 2 %	Store 3 %	Overall %
Mackerel	57	35	63	51.7
Salmon	41	40	60	47.0
Tuna	10	25	10	15.0
Herrings/kippers	7	3	13	7.7
Sardines	14	2	7	7.7
All fish	0	21	1	7.3
Trout	4	4	5	4.3
5 species <3%[a]	5	3	2	3.3
Don't know	10	22	7	13.0
SUM	**148**	**155**	**168**	**157**

Comment: Knowledge of oil containing species was good except for Store 2 (22% 'don't knows'). Tuna had a high citing in Store 2. 'All fish' is equivalent to a 'don't know' answer (Store 2 consumers).

[a]Species cited by <3% of consumers in each of stores 1, 2 and 3

Table 10: **Q10:** Have you heard of EPA/DHA? Responses from 300 consumers in three retail stores (100+100+100) (data are % of consumers answering yes or no)

	Store 1	Store 2	Store 3	Overall
Answer	%	%	%	%
Yes	31	30	30	30.3
No	69	70	70	69.7
SUM	100	100	100	100
Comment: 91 consumers had heard of EPA/DHA & 209 had not. Responses were the same for the three stores & therefore, for both working & middle class consumers.				

Table 11: **Q11**: What are EPA & DHA? Responses from 91 consumers who had heard of EPA/DHA (31+30+30) (see Table 10) (data are % of consumers giving each answer)

	Store1	Store 2	Store 3	Overall
Answer	%	%	%	%
Oils	25.8	66.7	10.0	34.0
PUFAs	0	20.0	0	6.6
Constituents of oil	9.7	0	6.7	5.5
Capsules	3.2	3.3	3.3	3.3
Don't know	61.3	10.0	80.0	50.5
SUM	**100**	**100**	**100**	**(100)**
Comment: Of 91 consumers who heard of EPA/DHA, 34% classified them as fish oils (not correct), 6.6% as PUFAs (correct), 5.5% as constituents of fish oils (correct), 3.3% as capsules (not correct) while 50.5% responded don't know.				

Table 12: **Q12**: Is fish good value for money? Responses from 300 consumers in three retail stores (100+100+100) (data are % of consumers answering yes, no or sometimes)

	Store 1	Store 2	Store 3	Overall
Answer	%	%	%	%
Yes	48	30	60	46.0
No	24	4	12	13.3
Sometimes	28	66	28	40.7
SUM	**100**	**100**	**100**	**100**
Comment: Only 46% of consumers said fish was good value for money. This was expected as fish prices are considered high in Ireland. Consumers in Store 2 were particularly discerning with only 30% saying good value and 66% responding 'sometimes'. The latter is a reflection of when fish are on special offer.				

3. Data for males versus females (Tables 13-22)

Table 13: **Q1**: Frequency of fish purchase by 95 male and 205 female consumers (data are % of male & female consumers citing each category)

	Male	Female
Frequency	**%**	**%**
Once/week	35.8	35.1
Twice/week	18.9	28.2
3-4 times/week	9.5	15.1
Once/month	13.7	3.9
Twice/month	15.8	12.2
3 times/month	4.2	4.4
Once/3 month	1.1	1.0
In bulk	1.1	0
SUM	**100**	**100**
Comment: 78% of females purchased fish at least once per week compared with 64% of males.		

Table 14: **Q2:** Form of fish purchased by 95 male and 205 female consumers (data are % of male & female consumers citing each form) (Σ%>100; a number of forms can be cited by each person)

	Male	Female
Form	**%**	**%**
Fresh (on ice)	85.2	86.3
Pre-packs	24.2	32.7
Frozen	24.2	20.5
Canned	11.6	11.7
SUM	**145**	**151**
Comment: % values for males & females were similar except for pre-packs where females had a higher value.		

Table 15: **Q3:** Preferred fish species of 95 male and 205 female consumers (data are % of male & female consumers citing each species) (Σ%>100; a number of species can be cited per person)

Species	Male %	Female %
Cod	52.6	58.0
Salmon	52.6	53.7
Mackerel	21.1	11.7
Plaice	16.8	13.7
Haddock	11.6	17.1
Hake	15.8	15.1
Tuna	12.6	14.6
Prawns	9.5	12.2
Farmed sea bass	9.5	11.2
20 other species <10%[a]	51.1	44.5
SUM	**253**	**252**
Comment: % values for males & females were fairly similar except for mackerel (higher preference by males) and haddock (higher preference by females).		

[a]Species cited by <10% of male and female consumers

Table 16: **Q4:** Why buy fish? Responses from 95 male & 205 female consumers (data are % of male & female consumers citing each reason) (Σ%>100; more than one reason can be cited per person)

Reason	Male %	Female %
Like it	64.2	62.9
Health	49.5	58.5
Change/variety	17.9	17.1
Convenience	4.2	5.4
Vegetarian	2.1	2.9
SUM	**138**	**147**
Comment: Responses from males versus females were similar with the exception of health which received a higher citation by females. Females also gave more reasons for buying fish than males.		

Q 5: Is fish good for health?: All consumers (100%) answered 'yes' when the question 'is fish good for health' was prompted.

Table 17**: Q6:** Reasons given for fish being good for health: Responses from 95 male and 205 female consumers (data are % of male & female consumers citing each reason) (Σ%>100; more than one reason can be cited by each person)

Reasons	Male %	Female %
Fish oils	53.7	52.7
Low calorie/fat	20.0	21.5
Protein content	13.7	9.3
Brain health	10.5	6.8
Goodness/nutrients	9.5	6.8
Good for heart	5.3	6.8
Vitamins/minerals	4.2	6.8
Natural	4.2	1.5
Lowers cholesterol	0	3.9
Easy to digest	0	3.4
6 reasons <3%[a]	5.5	6.4
Don't know	6.3	8.8
SUM	**133**	**135**
Comments: Differences in response from males versus females were small.		

[a]Reasons cited by <3% of male & female consumers

Q7: Have you heard of omega-3 fish oils? : 98% of consumers said 'yes' and 2% said 'no'. This is strong evidence that the omega-3 message is well recognized.

Table 18: **Q8**: Why are ω-3 fish oils good for health? Responses from 95 male and 205 female consumers (data are % of male & female consumers citing each reason) (Σ%>100; a number of reasons can be cited by each person)

	Male	**Female**
Reasons	**%**	**%**
Good for heart	13.7	27.3
Brain health	10.5	28.2
Lowers cholesterol	9.5	6.8
Lubricates/joints	8.4	7.8
Good for bones	2.1	8.3
Good for skin	3.2	3.4
Good for circulation	2.1	3.4
Good for blood	3.2	1.5
10 reasons < 3%[a]	2.1	10.0
Don't know	58.9	25.4
SUM	**114**	**122**
Comment: Females were much more knowledgeable than males as to why omega-3 fish oils are good for health with 'don't know' values of 25 & 59% respectively.		

[a]Reasons cited by <3% of male & female consumers

Table 19**: Q9:** Which fish species contain significant amounts of ω-3 oils? Responses from 95 male and 205 female consumers (data are % of male & female consumers citing each species) (Σ%>100; a number of species can be cited by each person)

	Male	**Female**
Species	**%**	**%**
Mackerel	45.3	54.6
Salmon	35.8	52.2
Tuna	10.5	17.1
All fish	12.6	4.9
Herrings/kippers	7.4	7.8
Sardines	5.3	8.8
Trout	2.1	5.4
5 species <3%[a]	4.3	3.0
Don't know	18.9	9.8
SUM	**142**	**164**
Comment: Females were more knowledgeable than males & the 'all fish' response from males & females is equivalent to 'don't know' answers.		

[a]Species cited by <3% of male & female consumers

Table 20: **Q10:** Have you heard of EPA/DHA? Responses from 95 male and 205 female consumers (data are % of male & female consumers answering yes or no)

	Male	Female
	Male	**Female**
Answer	**%**	**%**
Yes	27.4	31.7
No	72.6	68.3
SUM	**100**	**100**
Comment: Responses from male versus female consumers were similar**.**		

Table 21: **Q11:** What are EPA & DHA? Responses from 26 male and 65 female consumers who had heard of EPA/DHA (see Table 20) (data are % of male & female consumers giving each answer)

	Male	**Female**
Answer	**%**	**%**
Oils	38.5	32.3
PUFAs	7.7	6.2
Constituents of oil	0	7.7
Capsules	0	4.6
Don't know	53.8	49.2
SUM	**100**	**100**
Comment: Responses from male versus female consumers were similar**.**		

Table 22: **Q12:** Is fish good value for money? Responses from 95 male and 205 female consumers (data are % of consumers answering yes, no or sometimes)

	Male	**Female**
Answer	**%**	**%**
Yes	43.2	47.3
No	14.7	12.7
Sometimes	42.1	40.0
SUM	**100**	**100**
Comment: Responses from male versus female consumers were similar**.**		

3. Data for consumers in five age categories (Tables 23-32)

As there were only 16 consumers in the >70 years category these were omitted from the tables

Table 23: **Q1:** Frequency of fish purchase by 284 consumers in five age categories (data are % of consumers citing frequency of purchase)

Frequency	Age category (years)				
	20-30	**31-40**	**41-50**	**51-60**	**61-70**
Once/week	42.9	22.0	45.5	28.0	37.3
Twice/week	19.0	20.0	16.7	28.0	39.2
3-4 times/week	19.0	10.0	4.5	18.7	17.6
Once/month	4.8	16.0	9.1	4.0	3.9
Twice/month	4.8	26.0	18.2	14.7	2.0
3 times/month	7.1	4.0	3.0	4.0	0
Once/3 month	2.4	2.0	3.0	1.3	0
In bulk	0	0	0	1.3	0
SUM	**100**	**100**	**100**	**100**	**100**
No. of consumers	42	50	66	75	51

Comment: % of consumers purchasing fish al least once per week were 81, 52, 67, 75 & 94% for the youngest to oldest age groups respectively, i.e. consumers in the youngest & oldest age groups purchased fish more frequently than those in the 31 to 60 year range.

Table 24**: Q2:** Effect of consumer age on form of fish purchased (284 consumers) (data are % of consumers citing each form) (Σ%>100; a number of forms can be cited by each person)

Form	Age category (years)				
	20-30	**31-40**	**41-50**	**51-60**	**61-70**
Fresh (on ice)	66.7	88.0	87.9	86.7	96.1
Pre-packs	50.0	34.0	28.8	29.3	15.7
Frozen	28.6	28.0	19.7	17.3	9.8
Canned	33.3	10.0	12.1	10.7	0
SUM	**179**	**160**	**148**	**144**	**122**
No. of consumers	42	50	66	75	51

Comment: In the 20-30 year age group fresh fish (on ice) got the lowest percentage of citations & pre-packs and canned the highest. The high percentage for canned corresponds to the high citing of tuna as a popular species by 20-30 year olds (Table 25); they also had the highest citation of 'convenience' as a reason for purchasing fish (Table 26). No one in the 61-70 year age group cited canned and this age group also had the lowest level of citations for frozen fish

Table 25: **Q3:** Effect of consumer age on fish species preferences (284 consumers) (data are % of consumers citing each species) (Σ%>100; a number of species can be cited by each person)

Species	Age category (years)				
	20-30	**31-40**	**41-50**	**51-60**	**61-70**
Cod	50.0	56.0	66.7	68.0	33.3
Salmon	52.4	62.0	36.4	52.0	62.7
Hake	2.4	6.0	13.6	5.3	23.5
Haddock	26.2	6.0	13.6	22.7	9.8
Mackerel	11.9	6.0	15.2	20.0	17.6
Plaice	19.0	20.0	12.1	12.0	13.7
Tuna	31.0	20.0	13.6	8.0	0
Other	64.3	76.0	77.3	69.3	66.7
SUM	**257**	**252**	**248**	**257**	**227**
No. of consumers	42	50	66	75	51

Comment: Mackerel were preferred by the older age groups & plaice & tuna by the younger age groups. Cod was a preferred species by all age groups except for 61-70 year olds whereas 41-50 year olds gave the lowest number of citations for salmon. There was no pattern in the data for hake or haddock.

Table 26: **Q4:** Why buy fish?: effect of consumer age on responses (284 consumers) (data are % of consumers citing each reason) (Σ%>100; a number of reasons can be cited by each person)

Reason	Age category (years)				
	20-30	**31-40**	**41-50**	**51-60**	**61-70**
Like it	61.9	70.0	62.1	61.3	62.7
Health	66.7	66.0	54.5	53.3	45.1
Change/variety	19.0	22.0	19.7	14.7	15.7
Convenience	11.9	4.0	7.6	1.3	0
Vegetarian	0	4.0	1.5	4.0	2.0
Don't know	0	0	0	1.3	0
SUM	**160**	**166**	**145**	**136**	**125**
No. of consumers	42	50	66	75	51

Comment: 20-30 year olds had the highest citation for convenience & 61-70 year olds the lowest citation for health.

Q 5: Is fish good for health?: All consumers (100%) answered 'yes' when the question 'is fish good for health' was prompted.

Table 27: **Q6:** Reasons for fish being good for health: effect of consumer age on responses (284 consumers) (data are % of consumers citing each reason) (Σ%>100; a number of reasons can be cited by each person)

Reason	Age category (years)				
	20-30	**31-40**	**41-50**	**51-60**	**61-70**
Fish oils	50.0	52.0	47.0	60.0	58.9
Low calorie/fat	45.2	28.0	16.7	14.7	13.7
Protein content	31.0	18.0	6.1	6.7	2.0
Brain health	4.8	4.0	16.7	8.0	3.9
Goodness/nutrients	7.1	8.0	15.2	4.0	9.8
Good for heart	0	2.0	6.1	9.3	5.9
Vitamins/minerals	11.9	16.0	1.5	5.3	2.0
Other	14.3	2.0	12.1	21.3	15.7
Don't know	7.1	14.0	12.1	4.0	7.8
SUM	**171**	**144**	**133**	**133**	**120**
No. Of consumers	42	50	66	75	51

Comment: Low calorie/fat & protein were most cited by 20-30 year olds and least by those in the 61-70 age range. Vitamins/minerals were most cited by 20-30 & 31-40 year olds; 31-40 year olds had the highest percentage of don't knows.

Q7: Have you heard of omega-3 fish oils? : 98% of consumers said 'yes' and 2% said 'no'. This is strong evidence that the omega-3 message is well recognized.

Table 28: **Q8:** Why are ω-3 fish oils good for health?: effect of consumer age on responses (284 consumers) (data are % of consumers citing each reason) (Σ%>100; a number of reasons can be cited by each person)

Reason	Age category (years)				
	20-30	**31-40**	**41-50**	**51-60**	**61-70**
Good for heart	28.6	14.0	19.7	32.0	27.5
Brain health	28.6	32.0	30.3	21.3	9.8
Lubricates/joints	7.1	4.0	13.6	17.3	21.6
Lowers cholesterol	2.4	8.0	7.6	4.0	4.0
Good for skin	2.4	6.0	3.0	5.3	0
Good for circulation	0	0	3.0	8.0	0
Other	7.1	12.0	12.1	13.3	9.8
Don't know	42.9	38.0	34.8	24.0	27.5
SUM	**119**	**114**	**124**	**125**	**100**
No. Of consumers	42	50	66	75	51

Comment: The oldest age group had the lowest number of citations for brain health. 'Lubricates/joints was most cited by the older age groups & 'don't knows' were lowest for 51-70 year olds.

Table 29: **Q9**: Which fish species contain significant amounts of ω-3 oils?: effect of consumer age on responses (284 consumers) (data are % of consumers citing each species) (Σ%>100; a number of species can be cited by each person)

Species	Age category (years)				
	20-30	**31-40**	**41-50**	**51-60**	**61-70**
Mackerel	26.2	50.0	48.5	68.0	56.9
Salmon	33.3	54.0	37.9	56.0	51.0
Tuna	23.8	14.0	9.1	21.3	5.9
Herrings/kippers	4.8	12.0	19.7	9.3	7.8
Sardines	0	8.0	10.6	10	5.0
All species	11.9	10.0	7.6	1.3	5.9
Other	11.9	6.0	12.1	8.0	3.9
Don't know	31.0	14.0	12.1	1.3	13.7
SUM	**143**	**168**	**158**	**176**	**151**
No. of consumers	42	50	66	75	51

Comment: 'Don't knows' were highest for 20-30 year olds; they gave the lowest citation for mackerel but the highest for tuna.

Table 30: **Q10:** Have you heard of EPA/DHA?: effect of consumer age on responses (284 consumers) (data are % of male & female consumers answering yes or no)

Answer	Age category (years)				
	20-30	**31-40**	**41-50**	**51-60**	**61-70**
Yes	21.4	36.0	27.3	34.7	33.3
No	78.6	64.0	72.7	65.3	66.7
SUM	**100**	**100**	**100**	**100**	**100**
No. of consumers	42	50	66	75	51

Comment: 20-30 year olds were the least aware of EPA/DHA.

Table31: **Q11**: What are EPA & DHA?: effect of consumer age on responses from the 88 consumers who had heard of EPA/DHA (see Table 30) (data are % of male & female consumers giving each answer) (Σ%>100; a number of answers can be cited by each person)

Answer	Age category (years)				
	20-30	**31-40**	**41-50**	**51-60**	**61-70**
Oils	44.4	27.8	50.0	38.5	29.4
PUFAs	33.3	11.1	5.6	0	0
Constituents of oil	0	5.6	5.6	3.8	5.9
Capsules	0	0	5.6	3.8	5.9
Don't know	22.2	61.1	44.4	65.4	70.6
SUM	**100**	**106**	**111**	**112**	**112**
No. of consumers	9	18	18	26	17

Comment: In contrast to Table 30, 20-30 year olds had the lowest percentage of 'don't knows' and the highest percentage for PUFAs.

Table 32: **Q12:** Is fish good value for money?: effect of consumer age on responses (284 consumers) (data are % of consumers answering yes, no or sometimes)

Answer	Age category (years)				
	20-30	**31-40**	**41-50**	**51-60**	**61-70**
Yes	45.2	42.0	39.4	49.3	64.7
No	16.7	18.0	16.7	13.3	11.8
Sometimes	38.1	40.0	43.9	37.3	24.5
SUM	**100**	**100**	**100**	**100**	**100**
No. of consumers	42	50	66	75	51
Comment: The oldest age group had the highest percentage of citations for 'yes' and the lowest for 'sometimes'.					

4. Reference

1. NRS Social Grading System (British National Readership Survey) (2013). http://en.wikipedia.org/wiki/NRS_social_grade

5. More information

A pdf copy of this document is available from ronan.gormley@ucd.ie

6. Acknowledgement