

What's in your favourite wraps?

Nutrition takeout series



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1 Background

This survey is one of a series of nutritional surveys *safe* food has commissioned. The others include;

- Nutritional content of chicken & potato products in deli counters and takeaway outlets (2009)
- Survey of salt levels in soup in catering establishments on the island of Ireland (2011)
- Pizza what's in that box? Nutritional content of a range of takeaway and shop-bought pizzas
 (2012)
- What's in that bun? Nutritional content of a range of takeaway burgers (2012)
- What's in your Chinese takeaway? Nutritional content of a range of takeaway Chinese food (2012)

This survey looks at the nutritional content of a popular and convenient 'on-the-go' food, the wrap, and sheds light on whether it is a healthy option.

In recent times, eating food prepared outside of the home has become the norm for many people on the island of Ireland (IOI). A quarter of eating or drinking occasions in the Republic of Ireland (ROI) (1) and an average of 11 per cent of a person's energy intake in the United Kingdom (2) now involve food prepared and cooked outside of the home. However, research shows that food prepared outside of the home contains considerably more dietary fat and is much lower in fibre and micronutrients than food prepared and cooked in the home (3).

Generally wraps consist of tortilla bread rolled to contain a variety of fillings, and they are increasingly becoming a popular easy-to-eat and portable option for lunch on the go. However, little is known about their nutritional content. Previous *safe*food-funded research has shown that certain foods are often perceived to be healthier, giving the person a 'licence' to overeat (4). Similarly, wraps are frequently marketed as a healthy lunch option. It is important to bear in mind that typically only about one-third of our daily calories should be consumed at lunchtime.

With two-thirds of the adult population carrying excess body weight, in addition to consuming high amounts of salt and fat and low amounts of fruit, vegetables and fibre on the IOI (2, 5), the risk of developing common chronic conditions such as cardiovascular disease, diabetes and certain cancers is increasing.

Given the diversity of wraps available from sandwich outlets, coffee shops, cafes and delicatessens, this survey was designed to provide an insight into the energy (calorie), total fat, saturated fat, protein and salt content of three popular takeaway wraps available at various establishments on the IOI.

Purpose of survey

The aim of this survey is to provide a snapshot of the nutritional composition of a sample of takeaway wraps purchased from a selection of sandwich outlets, coffee shops, cafes and delicatessen outlets on the IOI and to compare the nutritional composition of three takeaway wraps.

Tasks/objectives:

- Conduct a survey among a representative sample of the adult population on the IOI on reported consumption and knowledge of wraps
- · Carry out sampling and nutritional analysis of three popular wraps
- Compare the nutritional composition of three popular wraps.

Provide a snapshot of the nutritional composition of takeaway wraps purchased from a selection of sandwich outlets, coffee shops, cafes and delicatessen outlets on the IOI

3 Methodology

Consumer perception and consumption of wraps

Consumer perception and consumption information on wraps was extracted from a *safe*food market research survey, safetrak 15 (6), using a nationally representative sample of 801 adults aged 15–74 years interviewed at home during November 2013. There was approximately a two-third (n 500) and one-third (n 301) split between the group of adults from ROI and Northern Ireland (NI) respectively. A total of 63 sampling points were used in ROI and 30 in NI. Participants were asked what they ate for lunch and whether they ever ate wraps. If they did, they were asked how often, as well as the reasons behind choosing to eat wraps at lunchtime.

Identification of the three most popular wraps

- The number and location of a range of sandwich outlets, coffee shops, cafes and delicatessen outlets on the IOI were identified using two existing databases. These outlets were identified for NI (n 470) and ROI (n 701) (7, 8).
- A selection of these establishments (n 150) (NI n 60; ROI n 90) were chosen at random and contacted via telephone to determine the three most popular takeaway wraps to analyse in this research. Those establishments surveyed were chosen to reflect geographical spread, including urban and rural locations, and included both locally based and larger national or multinational chains.
- The three most popular wrap types were identified as Chicken & Salad, Chicken Caesar Salad, and Chicken Tikka & Salad. In general, these wraps contained the following ingredients (Table 1).

Table 1: Ingredients in the three most popular wraps

Wrap type	Chicken & Salad	Chicken Caesar Salad	Chicken Tikka & Salad
Ingredients	Chicken strips, mayonnaise and salad (red onion, tomato and lettuce)	Chicken strips, bacon, Caesar dressing or mayonnaise, lettuce and parmesan cheese	Chicken strips marinated in yoghurt and spices, mayonnaise, cheese and salad (red onion, lettuce and tomato)
Variations	Coleslaw or a different type of salad, e.g. sweetcorn	Cheddar cheese	Extra salad ingredients, e.g. peppers

Sampling and nutritional analysis of popular takeaway wraps

- The sampling protocol comprised the following criteria:
 - 1. A range of sandwich outlets, coffee shops, cafes and delicatessen outlets with a takeaway service was selected.
 - 2. A two-third/one-third split between ROI and NI was used.
 - 3. Both urban and rural outlets were sampled according to the number that was available in specific locations. More outlets were sampled in Dublin and Belfast as these had a larger number of outlets.
- In total, 240 (ROI, n=159; NI, n=81) takeaway wrap samples were purchased (in duplicate) from 80 outlets across 12 locations on the IOI (Table 2).
- For the purpose of collection, each sample was wrapped individually, with details of the location, name and description of the sample provided. These samples were weighed to measure portion size (g).
- The samples were returned to the University of Ulster and frozen within 24 hours until the analysis
 was conducted. One of the duplicate samples was used for energy analysis and the second duplicate
 sample was used for total fat, saturated fat, protein and salt analysis. The samples were analysed by
 Foodtest Laboratories Ltd, UK.

Table 2: Summary of takeaway wraps sampled

Takeaway wrap types	Total wraps
	purchased
Chicken & Salad	80
Chicken Caesar Salad	80
Chicken Tikka & Salad	80
Total	240

Statistical analysis

Data was analysed using the Statistical Package for Social Sciences (SPSS for Windows, version 20.0). P values \leq 0.05 were considered to be statistically significant. Analysis of variance (ANOVA) with post-hoc tests was used to analyse differences within and between the three types of wraps.

Guideline Daily Amounts (GDA) aim to help people to understand approximately how many calories and how much protein, carbohydrate, fat, saturated fat and salt are required for a healthy diet. These values (Table 3) were used in this report to provide an estimate of how much each wrap contributes to individual GDA levels and to allow for easy comparison between different wrap types.

Table 3: Current adult GDA (9)

Energy or nutrient	Adult GDA
Energy	2,000 kcal
Total fat	70g
Saturated fat	20g
Protein	50g
Salt	6g

4 Results

Consumer purchase and knowledge of wraps

surveyed selected a side, such as crisps, with lunch (10, 11).

- Of those surveyed (n 801) in the safetrak survey, 24% in NI and 16% ROI reported that they had eaten wraps for lunch
- Approximately 15% surveyed claimed they ate wraps almost every day, with a more frequent consumption in ROI
- The main reason reported for choosing wraps at lunch was taste. However, one in three believed that
 wraps are a healthier choice than a sandwich
 Previous safefood research has found that when eating out of the home, about 20% of those

Differences in wrap weight

The portion sizes of the 240 wraps surveyed varied considerably and there was often quite a large difference in size between wraps (Table 4). A two to two-and-half-times difference was found between the minimum and maximum portion sizes.

Table 4: Portion sizes (g) per takeaway wrap

Takeaway wrap type	Average (g)	Minimum (g)	Maximum (g)
Chicken & Salad	268	196	435
Chicken Caesar Salad	258	179	439
Chicken Tikka & Salad	286	191	445

Nutrient Content

- Overall, the smaller portion sized wraps generally had the lowest nutrient and calorie levels as they
 usually contained larger amounts of healthy fillings, such as salad, and on the whole contained no
 fillings high in calories, fat or salt, such as bacon and cheese. An example was the Chicken & Salad
 wrap.
- When the average of all three wrap types was compared per portion (as eaten), the average Chicken Caesar Salad wrap was found to have a slightly smaller size (258g). Moreover, it also contained the highest calorie content (564 kcal, 28% GDA) and the highest fat, protein and salt content when compared to the other two wrap types (Table 5). The same was also found to be true when all three wraps types were compared per 100 grams: the average Chicken Caesar Salad wrap contained the highest levels for all parameters measured (see Appendix A). This can be attributed to the high calorie, fat and salt ingredients contained within this wrap type.

Table 5: Nutrient content and % GDA of the average portions of each wrap type

Parameter	Chicken &	GDA%	Chicken & Caesar	GDA%	Chicken Tikka &	GDA%
	Salad		Salad		Salad	
Energy (kcal)	465	23	564	28	538	27
Total fat (g)	17.8	26	26.3	38	24.1	35
Saturated fat	3.6	18	7.5	37	4.4	22
(g)						
Protein (g)	33.7	67	40.6	81	35.5	71
Salt (g)	2.9	49	4.3	72)	3.3	54

Table six shows the largest portion size of each wrap type provided over 100% of the adult GDA for salt (6g) (see Table 6)

Table 6: Ranges for nutritional parameters analysed per takeaway wrap type (per portion)

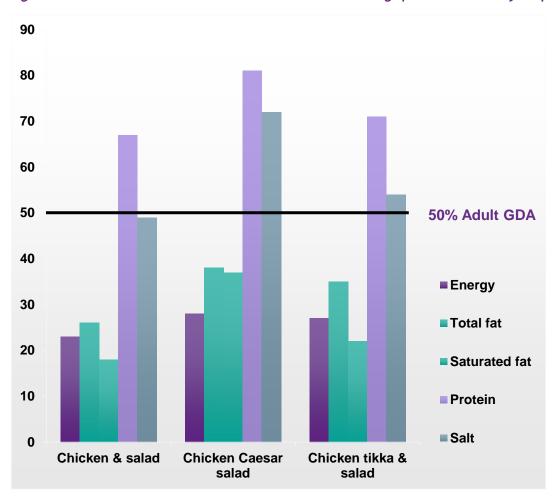
Parameter	Chicken & Salad			Chicken Caesar Salad Chicken Tikl						n Tikka	ka & Salad	
	Min	GDA (%)	Max	GDA (%)	Min	GDA (%)	Max	GDA (%)	Min	GDA (%)	Max	GDA (%)
Energy (kcal)	327	16	664	33	318	16	933	47	267	13	977	49
Total fat (g)	7.4	11	32	46	9	13	50	72	6	8	59	84
Saturated fat (g)	1.4	7	5.8	29	2	10	16	81	1	5	12	58
Protein (g)	18.2	36	65	129	22	44	74	148	19	39	65	130
Salt (g)	0.6	9	7	114	1.4	23	9	147	1	18	8	130

The largest portion of each wrap provided over 100% of the adult GDA for salt

Figure 1 shows the nutritional content as a percentage of the adult GDA for the average portion of each wrap type.

- This figure shows that all three wrap types contain approximately 50% or more of the adult GDA for salt.
- Each wrap also contains a substantial amount of total fat (26%–38% of the adult GDA for total fat) and saturated fat (18%–37% of the adult GDA for saturated fat).
- The amount of protein in all three wraps types was also found to be approximately 70% and over the adult GDA for that parameter.

Figure 1: Nutritional content as % of the adult GDA for each average portion of takeaway wrap



5 Conclusions

With one-quarter of food consumed by adults on the IOI now prepared and cooked outside of the home, it is important that consumers have the facts to make informed choices. The nutritional and health benefits of eating a balanced diet can be compromised by the high calorie, fat and salt content and larger portion sizes of many readily available takeaway foods. Some people have a perception that takeaway wraps are a quick and easy healthier alternative to sandwiches and other lunch options (6). However, the average tortilla wrap was found to contain a similar calorie content to two regular slices of white bread (149 vs 158 kcals) (see Table 7). This research has shown that wraps may not always be a healthy option. When choosing a wrap, attention needs to be paid to the portion size and the extra calories, fat and salt that additional ingredients plus sauces will contribute to the overall nutritional content.

Usually, about one-third of our daily calories should be eaten at lunchtime (660 calories: female adult; 880 calories: male adult). However, the calorie content varied in the 240 wraps investigated between 267 and almost 1,000 calories. Consequently, by adding a high calorie soft drink (200 calories (12)) and crisps (130 calories (12)) at lunch, the total meal intake can easily rise to over 33% of an adult's GDA for energy (kcals).

In general, the smaller wrap options, especially the Chicken Salad Wrap, were found to be lower in calories. The portion sizes of the wraps surveyed varied widely, and it is worth noting that the portion size may not always indicate how healthy a wrap is. The average Chicken Caesar Salad wrap was found to be slightly smaller in size, yet it contained the highest levels of calories, protein, total fat, saturated fat and salt in comparison to the other two wrap types. This can be attributed to the ingredients added to the wrap, such as bacon and cheese, which are particularly high in calories and fat. Where possible, replacing these ingredients with salad or a lower fat option, such as lower-fat cheese, is preferable. Sauces can also increase the calorie count of a wrap. For example, mayonnaise has a higher amount of calories, total fat and saturated fat when compared to relish (12) (see Table 7).

Takeaway wraps were shown to be a good source of protein. However, they occasionally also contained high levels of fat and high amounts of salt. Compared to other lunch options, certain wrap types surveyed did not differ largely in terms of nutritional content. For example, the average quarter pounder burger provides approximately 31% of the adult GDA for energy (622 kcals), 37% of the adult GDA for fat and over half the adult GDA for protein.

Table 7: The nutritional composition of common wraps and sandwiches¹

	Average portion for a sandwich / wrap	Average calories
Sandwich type	1 large tortilla wrap (57g)	149
	2 thick cut/doorstep slices of white bread	219
	2 regular slices of white bread	158
Basic fillings	Plain chicken and salad (134g)	132
	Fried breaded chicken (100g)	242
	Half-fat cheese and tomato (79g)	129
	Tuna and sweetcorn (75g)	122
Sauces	Mayonnaise (12g)	83
	Low-fat mayonnaise (12g)	35
<u> </u>	Butter (10g)	75
	Low-fat spread (7g)	26
	Low-fat natural yoghurt (13g)	8
	Relish (15g)	17

6 Key findings

- Chicken wraps were found to be the most popular types of wrap, namely the Chicken & Salad, Chicken Caesar Salad and Chicken Tikka & Salad wraps.
- One-third of those surveyed considered wraps to be a healthier alternative to sandwiches at lunch time (6).
- Portion sizes of the wraps analysed in this study varied and there was a two to two-and-a-half-times difference between the minimum and maximum portion sizes.
- By weight (100g), the Chicken Caesar Salad wrap provided the highest amount of calories, fat, protein and salt, followed by the Chicken Tikka & Salad wrap and the Chicken & Salad wrap. This last provided the lowest amounts across all parameters. This can be attributed to the various fillings and sauces contained in the particular wrap types.
- The chicken wraps analysed in this study were found to be very high in protein, providing between 67%–81% of an adults GDA (daily allowance) for protein.
- Takeaway wraps were found to be a major source of salt in the diet. The average of each wrap type provided more than the adult GDA for salt (which is 6g), and sometimes exceeded this by up to 50%.
- Each wrap type was found to contain a substantial amount of total fat (26%–38% of the adult GDA for total fat) and saturated fat (18%–37% of the adult GDA for saturated fat).
- Tortilla wraps have a similar caloric count to two regular slices of white bread (see Table 7).

7 Recommendations

Key messages for consumers:

- Ask for smaller portion sizes or perhaps share a wrap if it is large in size.
- When choosing filling options, avoid ingredients such as breaded chicken and bacon as these are
 higher in calories, fat and salt. Choose lean meat, poultry, fish or a suitable vegetarian option as
 an alternative. Add more salad or vegetable fillings for extra fibre and bulk, and choose lower-fat
 cheese options instead.
- Avoid adding sauces, e.g. mayonnaise, to wraps as these add extra calories and can be high in fat and salt. Ask for the sauce on the side instead so you can add as little as you want.
- Choose lower-sodium ingredients in wraps where possible, e.g. lower-sodium cheese, lean meat instead of deli/cured meats like bacon, or make use of spicy ingredients to add flavour.
- Where possible, consider making your own lunch and bringing it with you instead of eating out.
 Not only is this healthier, it may also help reduce your weekly spend. For guidance, visit www.safefood.eu.
- If possible, always look at the nutrition label of pre-packaged wraps and check the calorie, fat and salt contents.
- Choose wholegrain wraps where possible to increase fibre intake.
- Swap unhealthy sides such as crisps for fruit or low-fat yoghurt with your lunch.

Key messages for catering industry:

- Promote wholegrain wrap options.
- Offer wraps with more salad or vegetables, fewer sauces and smaller portion sizes of certain fillings (such as high-fat foods).
- Try offering child-size portions of wraps.
- Promote healthy wrap options and increase awareness of the calorie, fat and salt contained within wraps. Highlight healthier options so that consumers can recognise these meals easily.
- Offer lower-fat and lower-salt sauces, such as low-fat mayonnaise and tomato or yoghurt-based sauces.

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9 Appendix

Appendix A

Table 8: Appendix A, per portion results - descriptive analysis of parameters of takeaway wrap varieties (per portion)

Nutrient	Wrap	n	Mean	Std	Range	Min	Max
				deviation			
Energy (kcal)	Chicken & Salad	80	465	78	337	327	664
	Chicken Caesar Salad	80	564	129	615	318	933
	Chicken Tikka & Salad	80	538	136	710	267	977
Total fat (g)	Chicken & Salad	80	17.84	5.64	24.64	7.37	32.01
	Chicken Caesar Salad	80	26.26	9.48	40.97	9.39	50.36
	Chicken Tikka & Salad	80	24.14	11.44	52.90	5.91	58.81
Saturated fat (g)	Chicken & Salad	80	3.63	1.02	4.36	1.39	5.75
	Chicken Caesar Salad	80	7.47	3.21	14.21	1.96	16.17
	Chicken Tikka & Salad	80	4.41	1.84	10.52	1.07	11.59
Protein (g)	Chicken & Salad	80	33.65	8.65	46.23	18.15	64.38
	Chicken Caesar Salad	80	40.62	10.95	51.94	21.94	73.89
	Chicken Tikka & Salad	80	35.50	9.34	45.70	19.27	64.97
Salt (g)	Chicken & Salad	80	2.93	1.17	6.31	0.55	6.86
	Chicken Caesar Salad	80	4.29	1.60	7.42	1.38	8.80
	Chicken Tikka & Salad	80	3.26	1.38	6.69	1.08	7.77

Appendix B

Table 9: Appendix B, Statistical difference between wrap varieties (per portion) Appendix B

	Chicken &	Chicken Caesar	Chicken Tikka &		
Parameter	Salad	Salad	Salad	Comparison	P value
		Mean (SD)		•	
Energy	465 (781)	564 (129)	538 (136)	CS-CCS	<0.001*
(kcal)				CS-CTS	<0.001*
				CCS-CTS	0.339
Total fat	17.84 (5.64)	26.26 (9.48)	24.14 (11.44)	CS-CCS	<0.001*
(g)				CS-CTS	<0.001*
				CCS-CTS	0.313
Saturated fat	3.63 (1.02)	7.47 (3.21)	4.41 (1.84)	CS-CCS	<0.001*
(g)				CS-CTS	0.067
				CCS-CTS	<0.001*
Protein	33.65 (8.65)	40.62 (10.95)	35.50 (9.34)	CS-CCS	<0.001*
(g)				CS-CTS	0.449
				CCS-CTS	0.003*
Salt	2.93 (1.17)	4.29 (1.60)	3.26 (1.38)	CS-CCS	<0.001*
(g)				CS-CTS	0.294
				CCS-CTS	<0.001*

^{*}Denotes statistical significance (ANOVA); CS=Chicken & Salad; CCS=Chicken Caesar Salad; CTS=Chicken Tikka & Salad

Appendix C

Table 10: Appendix C, Descriptive analysis of parameters of takeaway wrap varieties (per 100g)

Nutrient	Wrap	n	Mean	Std	Range	Min	Max
				deviation			
Energy (kcal)	Chicken & Salad	80	175	23	108	136	243
	Chicken Caesar Salad	80	218	25	117	151	268
	Chicken Tikka & Salad	80	187	26	129	135	263
Total fat (g)	Chicken & Salad	80	6.72	2.08	10.1	2.7	12.8
	Chicken Caesar Salad	80	10.05	2.63	12.3	4.3	16.6
	Chicken Tikka & Salad	80	8.29	3.07	12.3	2.4	14.7
Saturated fat (g)	Chicken & Salad	80	1.36	0.34	1.9	0.5	2.4
	Chicken Caesar Salad	80	2.86	1.02	5.0	0.8	5.8
	Chicken Tikka & Salad	80	1.54	0.57	4.3	0.4	4.6
Protein	Chicken & Salad	80	12.49	2.13	7.8	8.5	16.3
	Chicken Caesar Salad	80	15.68	2.63	13.1	9.3	22.4
	Chicken Tikka & Salad	80	12.37	2.07	13.1	8.0	21.0
Salt (g)	Chicken & Salad	80	1.09	0.40	2.12	0.26	2.37
	Chicken Caesar Salad	80	1.66	0.53	2.31	0.53	2.83
	Chicken Tikka & Salad	80	1.14	0.40	1.74	0.34	2.08

Appendix D

Table 11: Appendix D, statistical difference between wrap varieties (per 100g)

	Chicken &	Chicken Caesar	Chicken Tikka &		
Parameter	Salad	Salad	Salad	Comparison	P value
		Mean (SD)		•	
Energy	175 (23)	218 (25)	187 (26)	CS-CCS	<0.001*
(kcal)				CS-CTS	0.004* <0.001*
				CCS-CTS	10.001
Total fat	6.72 (2.08)	10.05 (2.63)	8.29 (3.07)	CS-CCS	<0.001*
(g)				CS-CTS	0.001* <0.001*
				CCS-CTS	١٥.٥٥١
Saturated fat	1.36 (0.34)	2.86 (1.02)	1.54 (0.57)	CS-CCS	<0.001*
(g)				CS-CTS	0.250 <0.001*
				CCS-CTS	
Protein	12.49 (2.13)	15.68 (2.63)	12.37 (2.07)	CS-CCS	<0.001*
(g)				CS-CTS	0.942 <0.001*
				CCS-CTS	
Salt	1.09 (0.40)	1.66 (0.53)	1.14 (0.40)	CS-CCS	<0.001*
(g)				CS-CTS	0.813 <0.001*
				CCS-CTS	21001

 $[\]verb|*Denotes statistical significance (ANOVA); CS=Chicken \& Salad; CCS=Chicken Caesar Salad;\\$

CTS=Chicken Tikka & Salad



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