

What's in that bun?

Nutrition takeout series



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This survey is part of a number of nutritional surveys **safefood** has commissioned and is currently funding. These include:

- Chicken and potato – Nutritional content of chicken and potato products in deli counters and takeaway outlets – completed in 2009
- Survey of salt levels in soup in catering establishments on the island of Ireland – completed in 2011
- Nutrition takeout series – Nutritional content of a range of takeaway and shop-bought pizzas – completed in 2012
- Nutrition takeout series - Chinese takeaway - to be completed in 2012.

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1 Background

Excess body weight is the most important nutritional issue of our times, with two out of every three adults on the island of Ireland (IOI) currently classified as overweight or obese [1-3]. As well as this, our salt and fat intakes are high and our consumption of fruit, vegetables and fibre is low [2, 4]. This dietary pattern increases the risk of common chronic diseases such as cardiovascular disease, diabetes and certain cancers.

Lifestyles on the IOI have transformed over recent decades and this includes changes in our eating habits. There has been a rapid rise in the availability of 'convenient' and 'fast', cheap food, with eating food prepared outside the home becoming more and more common [3, 5-8]. Evidence suggests that in the current economic climate people are moving away from eating in restaurants to eating takeaways at home. In the Republic of Ireland (ROI), the 2011 National Adult and Nutrition Survey (NANS) highlighted that 24 per cent of eating/drinking occasions involved food cooked 'outside the home' (i.e. in a restaurant/pub/coffee shop/takeaway) [2].

The impact that food prepared outside of the home has on the nutrient intakes of adults, has been studied previously on the IOI [9, 10]. It was found that food prepared outside the home contains considerably more dietary fat than food prepared within the home and it is also lower in fibre and micronutrients [10]. **safefood** has commissioned previous nutritional surveys in the takeaway sector. These surveys revealed that certain foods i.e. potato, chicken, pizzas and soups prepared outside the home are high in fat and salt [11-13]. These surveys also reported that there are major differences in portion sizes across takeaway outlets on the IOI [11].

The beef burger is a common food on both the kitchen and restaurant table since the 1800s and is one of the most common choices on fast food menus [14]. The main reason for this is because it is tasty, easily accessible, customisable, affordable and portable. In ROI, composite foods (i.e. foods made up of more than one ingredient) are an important source of meat, especially burgers, with the majority of burgers either being fried or grilled, and many eaten from takeaway outlets [15]. With such easy access and with limited nutritional information available to consumers at point of sale, many people may not be aware of the nutritional content of what they are consuming or of the healthier options that may be available to them.

Given the diversity of products available, this survey was designed to provide an insight into the energy (calorie), total fat, saturated fat, protein and salt content of a range of burgers from various takeaway outlets.

2 Purpose of survey

The aim of this survey is to provide a snapshot of the nutritional composition of a sample of cooked burgers purchased from a selection of takeaway outlets and takeaway vans on the IOI.

3 Methodology

Sampling and laboratory analysis of takeaway burgers

A sampling protocol was developed and included the following four criteria:

1. Three types of burgers (Kids', Regular size and Quarter Pounder) with various topping options (No Topping, with Cheese, with Bacon).
2. A range of takeaway outlets including international, national, regional, independent takeaways and takeaway vans.
3. A two-third/one-third split between ROI and NI respectively.
4. Urban/rural locations of sampling.

In total, 240 burger samples were purchased (ROI, n=160; NI, n=80) in duplicate from a total of 47 separate takeaway outlets across IOI (Table 1). These were subsequently analysed in a laboratory to establish their energy, total fat, saturated fat, protein and salt content.

For the purpose of collection each sample was wrapped individually and a questionnaire recording information on the location, name and description of the sample (as described on the menu) was completed. Once in the laboratory, all samples were weighed to measure total portion size and were frozen until analysis. All accompanying ingredients and dressings, including baps/buns, etc. are included in the analysis; and so results refer to products as they would be purchased by the consumer, unless otherwise indicated. Duplicate sample 1 was used for energy analysis and duplicate sample 2 was used for total fat, saturated fat, protein and salt analysis. Protein, fat and salt concentrations were analysed using standardised techniques. The samples were analysed by two accredited laboratories - Eurofins, UK and Agri-Food Biosciences Institute (AFBI), NI.

Table 1: Summary of the burgers sampled

Burger type	Total	No topping	Bacon topping	Cheese topping
Kids'	41	15	12	14
Regular size	92	33	28	31
Quarter pounder	107	37	32	38
Total	240	85	72	83

Statistical analysis

Data was analysed using the Statistical Package for Social Sciences (SPSS® for Windows, Version 18.0). P values ≤ 0.05 were considered to be statistically significant.

Guideline Daily Amounts (GDA) help people to understand approximately how many calories, and how much protein, carbohydrate, fat, saturated fat, fibre, sodium and sugars are required for a healthy diet. These values (Table 2) were used in this report to provide an estimate of how much each burger type contributes to individual GDA levels and they also allow for the easy comparison between different burger types.

Table 2: Current GDAs for men, women and children [16, 17]

Energy or nutrient	Child GDA [18] (5-10 Years)	Adult Female GDA	Adult Male GDA
Energy	1800 kcal	2000 kcal	2500 kcal
Total fat	70 g	70 g	95 g
Saturated fat	20 g	20 g	30 g
Protein	24 g	45 g	55 g
Salt	4 g	6 g	6 g

*GDAs for children of different ages were developed in 2005 and can be found via [GDAs for children](#).

4 Key Findings

- An average Quarter Pounder, without any toppings or side orders, was found to provide approximately 622 kcals per burger (31 per cent of the adult GDA) and 25.7 grams of total fat per burger (37 per cent of the adult GDA). At 27.4 grams per burger, it was also found to provide over half the adult GDA for protein.
- Ordering a Bacon or Cheese topping adds considerably to calorie levels. Ordering both can add over 200 calories to a Quarter Pounder. Separately, a Bacon topping adds 1 gram of salt and 3 grams of saturated fat to a Quarter Pounder, while a Cheese topping adds an extra 3 grams of saturated fat and 0.5 g of salt.
- The addition of toppings, side dishes or a soft drink could potentially provide up to one hundred per cent of an adult or child's GDA for all nutrients assessed. For example an adult ordering a Quarter Pounder with all the trimmings (Bacon and Cheese topping), a portion of chips and a medium soft drink would be consuming, in one sitting, approximately 1,480kcals, contributing to over two-thirds of the adult GDA for energy (kcals) without accounting for other food consumed during the day.
- Almost 50 per cent of takeaway outlets offer a variety of children's options, however, an average Kids' burger does not necessarily mean a smaller burger in many instances. Across the burgers surveyed, both the average Kids' burger and the average Regular burger weighed approximately 4 oz. One in three burgers sold as Kids' burgers were found to be larger than the average Regular burger. A fourfold difference in burger size was seen across Kids' and Regular burgers.

Differences in burger weight (Portion size)

Across the 240 burgers surveyed, results show that both the Kids' burger and the Regular burger weighed on average 4 oz, while the average Quarter Pounder weighed double that amount at 8 oz. (Tables 3 and 4). The weight range across Regular burgers was substantial with three-fold differences seen in Regular burgers with no topping.

Table 3: Average portion weight of kids' burger per topping

Burger type	Average across toppings		No topping		Bacon		Cheese	
	Mean	(min-max)	Mean	(min – max)	Mean	(min – max)	Mean	(min – max)
Kids' burger	116 g	70-170 g	103 g	77-134 g	124 g	89-170 g	123 g	93-165 g

Table 4: Average portion weight per burger type and per topping

Burger type	Average across toppings		No topping		Bacon		Cheese	
	Mean	(min-max)	Mean	(min – max)	Mean	(min – max)	Mean	(min – max)
Regular burger	124 g	77-269 g	109 g	77-225 g	137 g	97-269 g	130 g	92-239 g
Quarter pounder	223 g	143-329 g	209 g	143-285 g	233 g	157-329 g	227 g	157-315 g

Children's options

Almost 50 per cent of outlets offered a variety of children's options. These were marketed as kids' size portions, kids' size burgers, junior meals, mini burgers and 2 oz burgers.

Average kids' burger

All Kids' burgers, with and without toppings, from all locations are presented and compared to children's GDAs in Table 5. A Kids' burger without toppings was found to contain, on average, 342 calories, 12.5 grams and 4.9 grams of total and saturated fat respectively and 1.3 grams of salt per burger.

Table 5: Mean value and % child's GDA for energy and nutrient content of kids' burgers with 3 different toppings (no topping, bacon, cheese)

Parameter	No topping	GDA (%)	Bacon	GDA (%)	Cheese	GDA (%)
Energy (kcal)	342	19	411	23	417	23
Total fat (g)	12.5	18	16.6	24	17.9	26
Saturated fat (g)	4.9	25	6.4	32	7.4	37
Protein (g)	15	30	20	40	18	36
Salt (g)	1.3	33	2.1	53	1.8	45

Addition of toppings

Bacon or Cheese toppings significantly increased the percentage GDA for all nutrients assessed. For example, a Kids' burger without toppings provides 25 and 33 per cent of a child's GDA for saturated fat and salt respectively. These percentages rise to 32 and 53 per cent with the addition of a Bacon topping and 37 and 45 per cent with the addition of a Cheese topping. (Table 5). A Kids' burger with a

bacon topping was found to be high in saturated fat and salt containing 6.4 grams and 2.1 grams respectively. A Kids' Burger with a Cheese topping was also found to be considerably high in saturated fat and salt with levels of 7.4 grams and 1.8 grams respectively. Refer to Appendix 1A for a full table of results.

Table 6: Ranges for nutrition parameters analysed – kids' burger by type of topping - sampled for fast food outlets on the island of Ireland

Parameter	No topping		Bacon topping		Cheese topping	
	Min	Max	Min	Max	Min	Max
Energy (kcal)	267	463	312	494	318	574
Total fat (g)	8.5	19.0	9.7	24.7	11.9	25.9
Saturated fat (g)	3.3	7.2	3.7	10.9	5.3	12.2
Protein (g)	11.1	26.0	15.3	25.1	15.1	30.9
Salt (g)	0.54	1.92	0.94	3.22	1.14	2.36

There is considerable variation between the levels of salt found in Kids' burgers with a four-fold difference seen across salt levels in Kid's burgers without a topping and three-fold differences seen across salt levels in Kid's burgers with a bacon topping (Table 6). Refer to Appendix 1 A and B for full tables of results.

Regular burger and Quarter Pounder

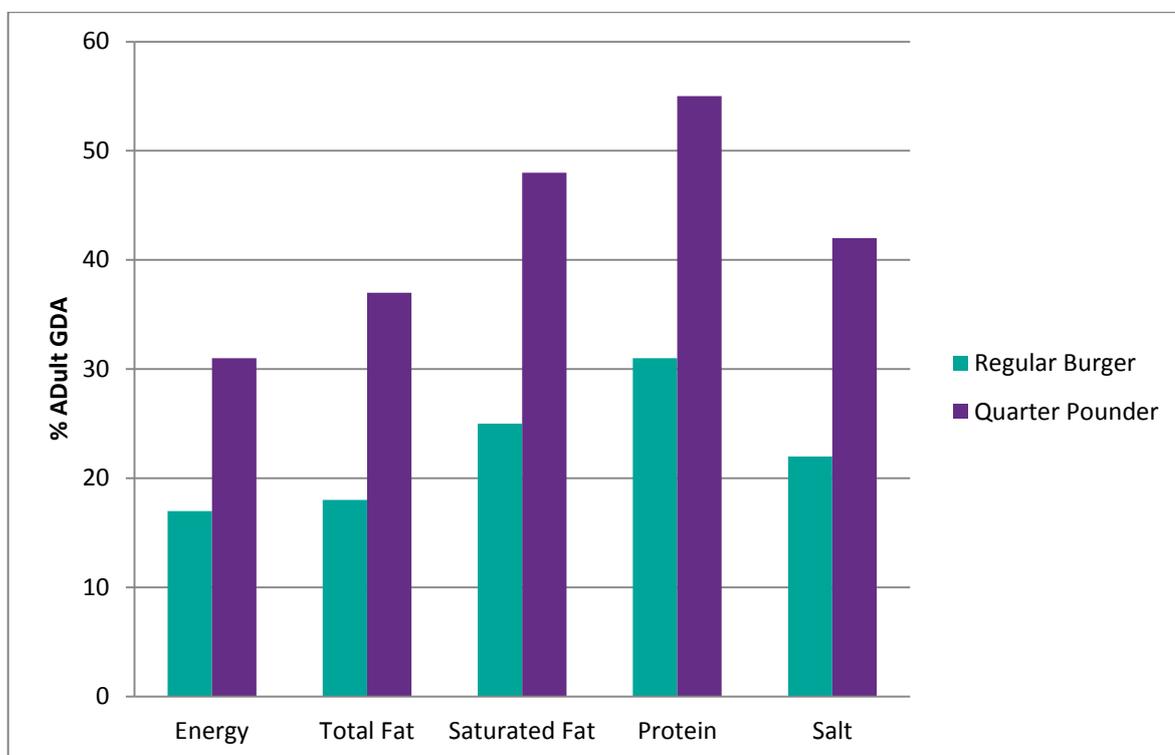
Average regular burger and quarter pounder

All regular burgers and Quarter Pounders, with and without toppings, from all locations are presented and compared to the adult GDAs in Table 7. A Regular burger without toppings was found to provide on average 340 calories. It was also found to provide on average 5 grams of saturated fat or 25 per cent of an adult's GDA of 20 grams (range 3.2-10.6 g). There was a 5 fold difference seen in salt across Regular burgers without toppings and total fat levels ranged from 8.4 to 23.4 grams (Table 7 & 8 and Figure 1).

A Quarter Pounder without toppings provided on average 622 calories. It was also found to have considerably high levels of total and saturated fat (25.7 grams and 9.5 grams respectively) and salt (2.5 grams). There was a 4 fold difference seen in salt across Quarter Pounders without toppings and total fat levels ranged from 18.3 to 47.9 grams (Table 7 & 8 and Figure 1).

Due to the greater size, a Quarter Pounder without toppings was found to have statistically significantly more energy, total and saturated fat, protein and salt compared to the Regular burger without toppings (Table 7 and Figure 1). Refer to Appendix 1A and C for a full table of results.

Figure 1: Mean Value (per burger) as % of adults GDA for the average regular burger and average quarter pounder without toppings



Addition of toppings

This survey found that the percentage GDA for energy, total fat and saturated fat is significantly increased by the addition of bacon or cheese toppings to burgers. A Bacon topping was found to significantly increase the percentage GDA for protein and salt.

Adding a Bacon topping to a Regular burger or Quarter Pounder increased the calorie count by 98 and 112 kcals, respectively. A Bacon topping adds 1 gram of salt to each burger type, while it increased the total and saturated fat content of a Quarter Pounder by 7 and 3 grams respectively.

Adding a Cheese topping to a Regular burger or Quarter Pounder increased the calorie count by 72 and 97 kcals while also increasing the total and saturated fat content by 6 and 3 grams, respectively.

A Regular or Quarter Pounder burger without toppings was found to provide 22 per cent or 42 per cent of the adult GDA for salt respectively, and by adding a Bacon topping these percentages jumped to 42 and 58 per cent. For both burger types it can be concluded that a Bacon topping increases the salt level significantly (Table 7). Refer to Appendix 1A for a full table of results.

Table 7: Mean value and % adult GDA for energy and nutrient content of regular burgers and quarter pounders with 3 different toppings (no topping, bacon, cheese).

Parameter	Regular burger						Quarter Pounder					
	No topping	GDA (%)	Bacon	GDA (%)	Cheese	GDA (%)	No topping	GDA (%)	Bacon	GDA (%)	Cheese	GDA (%)
Energy (kcal)	340	17	438	22	412	21	622	31	734	37	719	36
Total fat (g)	12.5	18	17.5	25	17.3	25	25.7	37	32.5	47	31.2	45
Saturated fat (g)	5.0	25	7.1	36	7.2	35	9.5	48	12.1	61	12.4	62
Protein (g)	15.4	31	21.8	44	18.3	37	27.4	55	35.9	72	31.2	62
Salt (g)	1.3	22	2.5	42	2.0	32	2.5	42	3.5	58	3.0	50

(Values circled in green demonstrate the lowest parameter values and those circled in red highlight the highest)

Table 8: Ranges for nutrition parameters analysed –Regular Burgers and Quarter Pounders burger by type of topping - sampled for fast food outlets on the island of Ireland

Burger Type	Regular Burger						Quarter Pounder					
	No Topping		Bacon Topping		Cheese Topping		No Topping		Bacon Topping		Cheese Topping	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Energy (kcal)	264	579	287	695	316	635	500	800	521	1100	536	998
Total Fat (g)	8.4	23.4	8.7	28.5	11.3	27.0	18.3	47.9	19.3	52.5	22.6	56.3
Saturated Fat (g)	3.2	10.6	3.4	12.5	5.1	12.4	6.0	13.4	7.3	24.4	8.0	21.4
Protein (g)	11.9	26.3	12.7	34.4	13.2	32.3	22.0	35.6	28.9	56.4	24.8	42.6
Salt (g)	0.53	2.57	1.16	3.61	1.16	3.04	1.02	3.58	1.61	5.06	1.97	4.12

Healthier burger options

Based on the results of this survey, the Quarter Pounder was found to be the least healthy option. Cheese and Bacon toppings add to the calorie, fat and salt content of burgers. It was found that a Bacon topping alone increases the salt level significantly. (Tables 7 and 8).

Information on healthy options (as on the menu) was collected from takeaways and takeaway vans and included information, if available, on options such as low fat cheese. In general, there was little or no availability of these “healthier burger options” in outlets.

Burger outlets

Burgers, from both independent outlets and larger outlets with many locations, were compared to determine any differences between outlet type. Samples from takeaway vans were not considered in the comparison as their number was relatively small ($n < 10$ per burger type). When the location results were examined, the only significant difference that was found was between the weights of Kids' burgers and Regular burgers from different outlets; the weights of these burgers were significantly higher in independent outlets. Per 100 g however, the level of calories, total fat, saturated fat and salt were the same. Refer to Appendix 1D for further information.

5 Conclusions

With a quarter of food consumed by adults on the island of Ireland today prepared outside of the home, it is important that consumers have the right information to make choices. The nutritional and health benefits of eating a balanced diet can be compromised by the high content of calories, total and saturated fat, salt and portion size of many readily available takeaway foods.

This survey found that burgers bought from fast food outlets contain considerable levels of fat and salt. These findings are consistent with previous research [10-13]. The nutritional value of specific burger types were summarised and in general, the Quarter Pounder with bacon would contribute the highest percentage of energy, fat and salt. This is not surprising as processed meat based ingredients are high in calories, saturated fat and salt.

In theory, a Kids' burger should be proportionately smaller in size when compared to a Regular burger. This research found that, on the IOI, both burger types were similar in size both weighing, on average, 4 ounces (113 grams) with similar values found across all nutritional parameters assessed.

The addition of toppings such as bacon or cheese can further increase the fat and salt levels of burgers. People watching their salt intake should try to avoid a Bacon topping as this increases salt intake significantly. Those watching their calorie, total fat or saturated fat intake should try to avoid burgers with either a Bacon or Cheese topping or if available, request salad or low fat cheese options. Salad or vegetable toppings such as gherkins or lettuce offer other healthier alternatives. Adding a sauce can also increase the calorie count of the burger; for example mayonnaise has higher levels of calories, total fat and saturated fat when compared to tomato ketchup or tomato relish (Appendix 2) [19].

Generally, the outlet origin of the burger did not influence the nutritional content, i.e. there was little or no difference in parameters assessed in a burger per 100 grams from an independent takeaway when compared to those obtained from an international takeaway. Independent outlets were found to provide larger Kids' and Regular burger sizes when compared to larger premises.

More often than not, when ordering burgers, consumers also order a portion of chips and takeaway outlets usually offer these in 'combo' meals together with a choice of drink. These items can push the calorie count towards 2,000 (100 per cent of an adult's GDA for calories). For example, the average portion of chips and a regular soft drink provides 462 and 195 calories respectively [19]. This added with a Quarter Pounder contributes to approximately two-thirds of the adult GDA for energy (kcal)

without accounting for other food consumed during the day. For some extra examples of the nutritional content of other accompanying side dishes and dips see Appendix 2.

6 Recommendations

Key messages for consumers:

- Takeaway burgers, in particular Quarter Pounders, have considerable levels of fat and salt. Consider them as an 'occasional food' (e.g. once a week or less often).
- To make a healthier choice, ask for smaller burgers such as the Kids' burger or the Regular burger without a topping, rather than a Quarter Pounder with all the trimmings.
- Although not assessed in this survey, double burgers are readily available in takeaway outlets. These provide more calories, fat and salt and should generally be avoided.
- A bacon or cheese topping adds significantly to the saturated fat and salt content of the burger. When ordering a burger, it is advised to ask for a smaller portion of cheese or ask for lower fat cheese options, while it is best to choose a burger without bacon.
- For a healthier burger option, ask for more vegetables such as lettuce, tomato, onions and pickles as this all contributes to the "five a day" recommendation.
- Reduce or do not add sauces on burgers. If choosing sauces, opt for tomato relish or low sugar tomato ketchup as they are healthier options compared to mayonnaise.
- In any one sitting, no one burger provides 100 per cent of nutrient GDA but the addition of chips/onion rings or soft drinks could provide 100 per cent, therefore this should be considered only as an occasional food. Consider having the burger with a side salad and juice instead of the more usual sides of chips and a soft drink.
- Home-made burgers can be an equally tasty but healthier option. Try making your own with lean mince and plenty of salad. See the consumer's guide to making and cooking burgers in Section 7 of this report.

Key messages for catering industry:

- **safefood** advocates that takeaway outlets offering burgers should give customers a wider range of low fat options such as low-fat cheese and provide healthier burger options, such as novelty burgers (e.g. chickpea or chicken burger with salad topping). They should also provide and promote healthier side portions.

- **safefood** encourages outlets offering burgers to provide and promote healthy eating options such as smaller burgers, chicken or turkey burgers (as these types will have lower saturated fat levels) and increase awareness of calories, total fat etc. across different burger varieties.

7 Consumers guide to making and cooking burgers at home

There's nothing quite like a home-made burger. They're tasty, easy to make and, if made with quality, fresh ingredients, they don't have to be unhealthy, especially if served with a salad.

Ingredients		
1lb/450g lean minced beef/lamb	Pinch of mixed herbs	Pinch of salt (if desired)
4oz/110g breadcrumbs (4 slices)	1 small onion – chopped finely	Pepper
	A little beaten egg	A little flour

To make your burger:

- When buying meat for home-made burgers choose lean mince.
- Mix all the ingredients in a bowl (use alternative seasoning to salt e.g. mixed herbs, pepper)
- Bind with a little beaten egg.
- Shape mixture into round shapes with a little flour and store covered in the fridge until ready to cook.

To cook your burger: Be extra vigilant when cooking meats that have been minced such as burgers as these meats contain germs all the way through.

- Oil and preheat a large grill pan or frying pan on a high heat. Turn the heat down to medium. Place the burgers on the pan and use a turner to lightly press down on them, making sure the burger is in full contact. All meat should be checked visually to see if it is cooked thoroughly.

How do I check that a burger is properly cooked? When you pierce the thickest part of the burger with a fork or skewer, the juices should run clear. Cut the burger open with a clean knife to check it is piping hot all the way through – it should be steaming. Meat changes colour when it is cooked. Make sure there is no pink meat left.

To serve your burger: Serve your burger with a side salad or choose lettuce, sliced tomatoes, pickles or onions as toppings. If using a sauce opt for a tomato relish or a low sugar tomato ketchup and if adding cheese, use low-fat cheddar or grated cheese – it goes further.

8 Appendices

Appendix 1

Table A: Comparisons between toppings across burger varieties (per burger)

Parameter	Product	Mean (SD)			P - Value
		No topping	Bacon	Cheese	
Energy (kcal/burger)	Kids' burger	342(a) (50)	411(b) (57)	417(b) (74)	.003*
	Quarter pounder	622(a) (95)	734(b) (136)	719(b) (101)	.000*
	Regular burger	340(a) (54)	438(b) (74)	412(b) (70)	.000*
Total fat (g/burger)	Kids' burger	12.5(a) (3.1)	16.6(b) (4.2)	17.9(b) (4.1)	.001*
	Quarter pounder	25.7(a) (6.2)	32.5(b) (7.8)	31.2(b) (7.5)	.000*
	Regular burger	12.5(a) (2.7)	17.5(b) (4.1)	17.3(b) (3.9)	.000*
Saturated fat (g/burger)	Kids' burger	4.9(a) (1.1)	6.4(b) (2.0)	7.4(b) (2.1)	.003*
	Quarter pounder	9.5(a) (1.3)	12.1(b) (3.0)	12.4(b) (2.5)	.000*
	Regular burger	5.0(a) (1.3)	7.1(b) (1.9)	7.2(b) (1.8)	.000*
Protein (g/burger)	Kids' burger	15.1(a) (3.5)	20.3(b) (3.5)	18.0(b) (4.1)	.003*
	Quarter pounder	27.4(a) (2.5)	35.9(c) (4.8)	31.2(b) (3.8)	.000*
	Regular burger	15.4(a) (2.4)	21.8(c) (4.2)	18.3(b) (3.7)	.000*
Na (g/burger)	Kids' burger	0.5(a) (0.2)	0.8(b) (0.3)	0.7(b) (0.1)	.000*
	Quarter pounder	1.0(a) (0.2)	1.4(c) (0.3)	1.2(b) (0.2)	.000*
	Regular burger	0.5(a) (0.2)	1.0(c) (0.3)	0.8(b) (0.1)	.000*

Salt (g/burger)	Kids' burger	1.3(a) (0.4)	2.1(b) (0.6)	1.8(b) (0.3)	.000*
	Quarter pounder	2.5(a) (0.5)	3.5(c) (0.8)	3.0(b) (0.5)	.000*
	Regular burger	1.3(a) (0.4)	2.5(c) (0.7)	2.0(b) (0.4)	.000*

***Denotes statistical significance**

ABB – A is statistically significantly different to both Bs, where A has the lowest mean value. Both Bs are not statistically different from each other.

ACB – A, B and C are all statistically significantly different from each other, where A has the lowest mean value, followed by B and then C.

Table B: Ranges for nutrition parameters analysed – kids' burger by type of topping - sampled for fast food outlets on the island of Ireland

Parameter	No topping		Bacon topping		Cheese topping	
	Min	Max	Min	Max	Min	Max
Portion weight (g)	78	134	90	161	95	164
Energy (kcal)	267	463	312	494	318	574
Total fat (g)	8.5	19.0	9.7	24.7	11.9	25.9
Saturated fat (g)	3.3	7.2	3.7	10.9	5.3	12.2
Protein (g)	11.1	26.0	15.3	25.1	15.1	30.9
Salt (g)	0.54	1.92	0.94	3.22	1.14	2.36

Table C: Ranges for nutrition parameters analysed – regular burger and quarter pounder by type of topping

Parameter	Regular burger						Quarter pounder					
	No topping		Bacon topping		Cheese topping		No topping		Bacon topping		Cheese topping	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Portion weight (g)	78	222	98	266	92	236	144	280	160	323	158	313
Energy (kcal)	264	579	287	695	316	635	500	947	521	1155	536	998
Total fat (g)	8.4	23.4	8.7	28.5	11.3	27.0	18.3	47.9	19.3	52.5	22.6	56.3
Saturated fat (g)	3.2	10.6	3.4	12.5	5.1	12.4	6.0	13.4	7.3	24.4	8.0	21.4
Protein (g)	11.9	26.3	12.7	34.4	13.2	32.3	22.0	35.6	28.9	56.4	24.8	42.6
Salt (g)	0.53	2.57	1.16	3.61	1.16	3.04	1.02	3.58	1.61	5.06	1.97	4.12

Table D: Mean value (SD) comparisons in burger varieties between takeaways (per burger)

Parameter	Product	Independent outlets	Larger premises with many locations	P - Value
Weight (g/burger)	Kids' burger	124.3 (22.8)	108.3 (16.2)	0.02*
	Quarter pounder	224.2 (38.0)	225 (39.7)	0.92
	Regular burger	131.9 (34.2)	116.5 (22.6)	0.02*
Energy (kcal/100g)	Kids' burger	330 (37.4)	338 (26.8)	0.46
	Quarter pounder	309 (35.5)	316 (38.9)	0.41
	Regular burger	317 (34.3)	325 (30.7)	0.27
Total fat (g/100g)	Kids' burger	13.4 (3.2)	13.2 (2.6)	0.87
	Quarter pounder	13.2 (2.6)	13.6 (2.5)	0.46
	Regular burger	12.6 (2.5)	12.5 (2.3)	0.96
Saturated fat (g/100g)	Kids' burger	5.7 (1.9)	5.1 (1.0)	0.54
	Quarter pounder	5.3 (1.3)	5.0 (1.2)	0.30
	Regular burger	5.2 (1.4)	5.1 (1.0)	0.22
Protein (g/100g)	Kids' burger	15.3 (2.7)	14.8 (1.9)	0.25
	Quarter pounder	14.0 (2.5)	14.6 (2.4)	0.26
	Regular burger	14.6 (2.2)	15.2 (2.3)	0.63
Na (g/100g)	Kids' burger	0.6 (0.2)	0.5 (0.1)	0.29

	Quarter pounder	0.5 (0.1)	0.5 (0.1)	0.11
	Regular burger	0.6 (0.1)	0.6 (0.2)	0.16
Salt (g/100g)	Kids' burger	1.5 (0.4)	1.3 (0.3)	0.29
	Quarter pounder	1.4 (0.3)	1.3 (0.3)	0.11
	Regular burger	1.5(0.4)	1.4(0.4)	0.16

Appendix 2

Table A: Energy, fat and sodium content per side order [19, 20]

Side order (Average portion)	Energy (kcal)	Total fat (g)	Saturated fat (g)	Salt (g)
Chips (165g)	462	25.6	9.6	0.51*
Onion rings (83g) 8-9 rings	164	8.7	0.7	0.31

*Fat content varies depending on a number of factors related to their preparation

Table B: Energy, fat and sodium content of accompanying dips (per portion 28 g) [19]

Dip	Energy (kcal)	Total fat (g)	Saturated fat (g)	Salt (g)
Sweet chilli	53	0.2	0.0	0
Sour cream	101	10.4	0.0	0.09
BBQ	26	0.0	0.0	0.33
Mayonnaise	193	21.2	3.1	0.12
Tomato ketchup	32	0.0	0.0	0.45

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