

The composition and labelling of Doner Kebabs

L.A.C.O.R.S. Coordinated Food Standards Survey
(Local Authority Coordinators of Regulatory Services)



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Executive summary

Our relationship with food is changing, with consumers taking an increasing interest in the food that they eat. The Cabinet Office report entitled 'Food Matters – Towards a Strategy for the 21st Century' highlights, 'Today's consumers are better informed and more demanding about the food they eat than previous generations.' It goes on to state, 'A reconnection is in progress – to where our food comes from, how it is produced, and its impact on ourselves and on the planet.'¹

Public interest in what we eat is nourished by central and local government, as well as wider organisations, individuals and influences. Our awareness is being raised through food labelling legislation, government campaigns, local food projects, industry assurance schemes, industry labelling initiatives, campaigns by TV chefs and the work of consumer organisations.

The public is also increasingly aware of the links between food and health, with the rising tide of obesity across the UK being well documented. Current estimates suggest that 40% of the population will be obese by 2025 and 60% by 2050.¹ Around 70000 fewer people would die prematurely each year in the UK if diets matched the nutritional guidelines on fruit and vegetable consumption, and saturated fat, added sugar and salt intake.² Diet related ill health costs an estimated £6 billion a year in NHS costs alone.³

The nutrition focused work of the Food Standards Agency (FSA) has included high profile activities such as an ongoing campaign to reduce daily salt intake and the traffic light labelling system for food. However, the focus of nutrition related work by the FSA is now focusing on food eaten out of the home, including work with major catering chains on improving the nutritional value of their menus and the start of a voluntary scheme for catering outlets to display the calorie content of food at the point of sale.

The work of the FSA acknowledges the changing behaviour of UK consumers. Whereas eating out of the home may have been a rare occasion in the past, one in six meals is now eaten at restaurants, cafes, work canteens and other food outlets. This constitutes 27% of consumer food expenditure.⁴

It is clear that central government believes that local councils have a clear and definite role to play in tackling the rising obesity trends. This message has been underpinned by the introduction of Local Strategic Partnerships, Local Area Agreements and a number of obesity related National Indicators. The Government made their aspirations for local government clear in 'Healthy Weight, Healthy Lives: Guidance for Local Areas', 'Having played a leading role in tackling the public health issues of the nineteenth century, local government is once again poised to play the same crucial role in tackling the foremost

¹ Cabinet Office Food Matters – Towards a Strategy for the 21st Century available at http://www.cabinetoffice.gov.uk/strategy/work_areas/food_policy.aspx

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² Cabinet Office Strategy Unit (2008) – Food: An analysis of the issues

³ Rayner M and Scarborough P (2005) The burden of food related ill health in the UK, Journal of Epidemiology and Community Health

⁴ Defra (2007) Food Service and Eating Out: An economic survey

public health issue facing the country today, ensuring everyone in their local communities is able to maintain a healthy weight and lead a healthier life.⁵

This coordinated food standards survey, looking at the content and nutrition of doner kebabs across the UK, acknowledges the changing government and consumer priorities in relation to food. The survey recognises consumer interest in the content of the food that they eat by analysing the meat species in doner kebabs and looking at the accuracy of product labelling. It also acknowledges the food and health agenda by considering the nutritional value of doner kebabs.

The information made available in this report as a result of work by councils across the UK is extremely robust. The report is based on the work of 76 individual councils collecting 494 samples of doner kebabs. Councils from 11 out of 12 regional areas in the UK are represented. The contribution by so many councils to this survey highlights their commitment to ensuring that consumers have the necessary information to make an informed choice about the food that they eat.

The survey contains interesting information for both the consumer and catering business about the meat content of the doner kebabs that they buy. The fact that only 34% of kebabs collected contained only sheep meat may be of interest to some consumers. Consumers and catering businesses may be concerned at the inaccuracies the survey identified about product labelling, which we have committed to help resolve.

The report highlights that the average doner kebab contains over 1000 calories, which is over half the Guideline Daily Amount (GDA) for women and 40% for men. Some of the doner kebab samples collected as part of this show far more concerning nutritional values, with the worst containing 80% of the calorie GDA for a man, 136% of their GDA for fat and 235% of their GDA for saturated fats. The worst kebab contained 277% of the recommended daily salt intake for adults.

In conveying these rather astonishing extremes, it must be acknowledged that doner kebabs will rarely form the main constituent of an individual's diet. Even in consideration of the rising trend towards food being eaten outside of the home, most consumers will only eat doner kebabs on a limited number of occasions. However, this survey does provide valuable and interesting information for consumers about the doner kebabs that they eat and can inform the choices that they make. Furthermore, it raises a possible opportunity for further work to be carried out with industry on both the product labelling and nutritional value of doner kebabs.

⁵ Department of Health Healthy Weight, Healthy Lives: Guidance for Local Areas at http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_083607

1. Introduction

1.1 The LACORS coordinated food standards sampling programme

The LACORS coordinated food standards sampling programme was developed in recognition of the strong links between local, regional and national food sampling priorities. The surveys undertaken reflect local interests, generate community engagement and meet the priorities of individual councils. In addition to the local perspective, there are clear advantages to be gained by comparing results of the chosen surveys at a regional and national level.

LACORS role in this project is to consult with councils throughout the UK to establish the annual sampling programme, produce a sampling protocol for chosen surveys, collate results, produce a summary report and produce a national press release where appropriate. LACORS also maintains ongoing communication with councils in relation to the programme and responds to any queries that may arise. At each annual scoping meeting we take on board lessons learned from the previous year and aim to improve our contribution as a result.

LACORS do not undertake any direct sampling work, as this is carried out by councils. Participation by individual councils is optional and funded from their own sampling budgets. Councils will consider their own community needs, intelligence, risk, regional work and wider national priorities when deciding whether they will participate in the LACORS programme. The growing number of councils engaging in the work exemplifies the success of the programme and the benefits it brings.

The success of this work is therefore dependent on the contribution made by councils, for which LACORS is extremely grateful.

2. LACORS coordinated food standards sampling survey on doner kebabs

2.1 Background

Döner kebab (Turkish döner kebab, literally "turning roast"), is a Turkish national dish made of meat cooked on a vertical spit and sliced off to order. Some people state that the meat may be lamb, mutton, beef, goat, or chicken.⁶ However, there is also the perception that doner kebabs should only contain either only lamb or mutton. Feedback from councils to LACORS suggests that this understanding can vary on a regional basis. Infact in 1998 Leicestershire County Council successfully prosecuted a kebab producer for the supply of doner kebab meat which was not of the substance demanded by the unqualified term 'doner kebab', in that it contained meat of a species other than sheep, namely beef and poultry.

The most authentic method of preparation is to stack seasoned slices of lean meat onto a vertical skewer in the shape of a cylinder. The stack is cooked by radiant infrared heat from electric elements or gas fired burners. Thin slices of the cooked meat are carved from

⁶ Wikipedia at www.wikipedia.org/

the rotating skewer and filled into a jacket of pitta bread which is often accompanied with a choice of sauces and salads.

The kebab industry has steadily grown in popularity since it was introduced to the UK in the 1960's, and today there are over 20,000 kebab shops trading today. The industry is ⁷ predominately made up of small businesses.

Some retail outlets make their own kebabs on site whereas others, the majority in this survey, purchase in the ready made finished article in a frozen state. The frozen kebabs are supplied by a variety of manufacturers who may operate on a national, regional or local basis.

2.2 Summary of the LACORS survey

At the LACORS Food Standards Regional Coordinators meeting in October 2007 the suggestion was made to include a survey into the labelling and composition of kebabs into the 2008/9 programme and this was supported by representatives from councils attending the meeting.

In the 2008/9 programme, sampling was planned from April 1st to July 31st 2008, with the results being submitted to LACORS by 1st September 2008. Results were being received through to November 2008 and these were accepted.

LACORS takes great care to ensure that the analysis results used in survey reports are valid, however, the responsibility of ensuring samples are collected according to the protocol is with the relevant council and analysis of the results is the responsibility of the chosen Public Analyst.

2.3 Participation by councils and sampling numbers

County councils and unitary authorities across the UK are responsible for enforcing legislation relating to food standards. The work is carried out by the appropriate trading standards or environmental health service within these councils.

76 individual councils from throughout the UK submitted a total of 494 samples as part of this coordinated survey looking at doner kebabs. The participating councils were located in 11 out of 12 of the regional areas in the UK. The individual councils that participated in this survey are listed in Appendix 1.

2.4 Sampling protocol

The template sampling protocol for the survey about doner kebabs can be found on the LACORS website.⁸

The sampling protocol requested that the sampling officer collected two identical doner kebabs. Each kebab was to be contained in a pitta bread, but without salad or sauces.

⁷ <http://www.squidoo.com/donerkebab>

⁸ www.lacors.gov.uk

Details of how the kebab was described at the catering business, the recipe, if the product was made on the premises, and any labelling information available from the packaging materials of prepacked products or from invoices, was to be collected or noted.

The samples were to be submitted to the public analyst laboratory chosen by the participating council. The laboratory was directed to weigh each kebab, identify the species of animal tissue present in the kebab and quantify the total fat, carbohydrate, protein, saturates and salt content of the kebabs.

The sampling officers were free to collect any size of kebab available. Samples of small, medium, and large kebabs proved common descriptors. Other adjectives were used to describe differing kebab sizes, such as regular, normal and single. For the purpose of this report, these additional descriptors were classed together as one group for further analysis.

2.5 Analysis of kebabs

Each council chose where to send their kebab samples, which in most cases was their Public Analyst.

The protocol required that the species present to be detected by DNA analysis. The reason for this was that many Public Analysts had been supported by the FSA to purchase new equipment for DNA testing of food products. However, some analysts told LACORS that they were not able to use the DNA technique but chose to rely on the species determination by immunological methods.

In this report the results of the two techniques have been accepted and collated together.

It should be noted that neither test is able to determine the quantity of meat species that is present, therefore it not possible to state whether an individual meat species is present because it has been added as an ingredient or whether it is actually trace quantities that are present as a result of cross contamination.

3. Meat species in doner kebabs

Analysts were asked to determine the actual meat species present in each kebab, using either specific DNA or immunological methods. The presence of each species was recorded.

Table 1 identifies the species determined in the kebabs by analysis.

Table 1 Meat species in doner kebabs

Meat species	Number of kebabs collected	Percentage of kebabs collected
Sheepmeat only	166	33.6%
Sheepmeat with beef	102	20.7%

Meat species	Number of kebabs collected	Percentage of kebabs collected
Sheepmeat with chicken/poultry	27	5.5%
Sheepmeat with beef and chicken	99	20.0%
Sheepmeat, beef, chicken and turkey	4	0.8%
Sheepmeat, beef and turkey	1	0.2%
Beef	9	1.8%
Beef and chicken	12	2.4%
Beef and pork	1	0.2%
Sheepmeat, beef and pork	2	0.4%
Sheepmeat, chicken and pork	1	0.2%
Sheepmeat, beef, chicken and pork	2	0.4%
Chicken	25	5.1%
No result	43	8.7%

It should be acknowledged that the analytical tests for the determination of species can be very sensitive but are not quantitative. Therefore a positive result may indicate a small amount of cross contamination, rather than a specific added ingredient.

From the results above it can be seen that approximately one third of the kebabs collected consisted of sheepmeat alone.

On six occasions the laboratories detected pork within the doner kebabs sampled. Pork was not specifically included within the sampling protocol and therefore the number of doner kebabs containing pork could be significantly higher.

4. Product labelling of doner kebabs

4.1 Labelling supplied by the manufacturer

The labelling provided by the manufacturer can then be used by the catering establishment to provide information to the consumer.

It is the manufacturer who applies appropriate labelling to the product to comply with requirements of Part II of the Food Labelling Regulations 1996⁹ as amended. The manufacturer must ensure that this information is supplied to the caterer.

The information collected from catering premises as part of this survey indicates that the manufacture of kebabs is not restricted to just a few producers. Sampling officers provided names of over 100 manufacturing companies as a result of information obtained at catering premises. In addition, there was no clear dominant manufacturer highlighted by the samples collected. The ten manufacturers that provided the most kebabs only provided 35% of the total samples collected.

356 results were supplied with some information about the ingredients. The manufacturers label was provided with 28 samples.

4.1.1 Legal requirements

The Food Labelling Regulations 1996⁹, as amended, require that, amongst other information, the kebabs from the manufacturer must be marked with the name of the food, a list of ingredients in descending weight order and a quantitative ingredient declaration for the meat species present.

Other information, such as marking the kebab as a Halal product, can be provided voluntarily but any such references must be accurate and not mislead the consumer.

4.1.2 Compliance by the manufacturer with labelling requirements

The labelling information gathered during this survey highlighted a number of key areas where manufacturers of doner kebabs can improve the labeling of their product.

The areas for improvement were identified as -

- The **meat** species determined by the laboratories is inconsistent with the labelling attached.
- On 128 occasions the **labelling of meat content** did not comply with present legal requirements.

4.1.3 Meat species included in the ingredient list

Analysis of the kebabs demonstrated the presence of a variety of meat species that were not stated in the ingredient list supplied by the manufacturer.

35.1% of the 323 samples collected with some details from the manufacturers contained a different profile of animal species than that conveyed on the label.

- On 1.2% of occasions lamb was declared in the ingredient list supplied by the manufacturer but was not found on analysis.
- On 2.8% occasions lamb was found in the actual kebab but not declared on the ingredient list.

⁹

⁹ <http://www.opsi.gov.uk/about/hmsc>

- Beef was declared on the ingredient list for 2.5% of kebabs but not detected by the sampling analysis.
- On 14.9% of occasions beef was found as a result of the kebab being analysed but not declared on the ingredient list supplied by the manufacturer.
- On 1.6% occasions chicken was declared on the ingredient list but not detected by the sampling analysis.
- On 12.1% occasions chicken was found as a result of the kebab being analysed, but this was not declared on the ingredient list supplied by the manufacturer.

The statistics above suggest that the labelling of meat species in kebabs at a manufacturing level is disappointingly inaccurate. It is essential that the information on the kebab label provides accurate information and does not mislead the buyer. Catering establishments may use the information provided on the product label by the manufacturer to inform the final consumer. This principle applies whether the law specifies that the information must be supplied, or whether the information on the label has been applied by the manufacturer on a voluntary basis.

In addition to the above statistics about the meat species included in doner kebabs, it should also be noted that on six occasions the laboratories detected pork within the doner kebabs sampled. Pork was not specifically included within the sampling protocol and therefore the number of doner kebabs containing pork could be significantly higher. Two of the six products that tested positive for pork content stated that they were Halal. The products that tested positively for pork content were from 4 individual suppliers. One supplier provided two of these samples and in one case the manufacturer was not recorded.

When considering this finding, it should be noted that the Muslim religion does not allow the consumption of pig meat. In addition, Muslims can only consume meat that has been slaughtered in accordance with Halal principles. As stated previously, the kebab is of Turkish origin, where 98% of the population are Muslim.

It must be emphasized that the analysis of meat species at the laboratories does not determine the level of each meat species present in the product. Individual meat species detected in a kebab, but not declared on a label, could therefore be due to contamination at a manufacturing level or potentially at the catering premises itself. Contamination at catering premises is less likely. Manufacturers should be following appropriate Hazard Analysis Critical Control Points (HACCP) procedures to prevent widespread contamination between products. Manufacturers should also be providing labelling information to provide full details of all meat species in the product, including the levels of meat species.

4.1.4 Meat content declaration

The Food Labelling Regulations 1996, as amended by the Food Labelling (Amendment) Regulations 1998 and the Food Labelling (Amendment) Regulations 2003, requires that the quantitative ingredient declaration (QUID) for the actual meat content be displayed on the label when the product is sold packed to the final consumer or caterers. Therefore when the catering establishments are supplied with a manufactured doner kebab, such information should be provided, however, when the final product is sold to the consumer there is no requirement to provide a meat content

Table 2 details the errors found on the product labels supplied by kebab manufacturers in relation to meat content. It can be seen that almost 40% of the kebabs were not labelled with specific reference to the meat content as required by the 2003 amended legislation.

This level of non compliance in relation to product labelling suggests that further support is required to ensure businesses are aware of their legal obligations.

Table 2 Errors identified in meat content declarations

Declaration	Number	100%
'Minimum meat'	35	10.8
'Approx'	8	2.5
'Meat content' – no species declared	22	6.8
No declaration of meat content	58	18.0
Declaration includes fat	2	<1
Claims of 100% meat	3	<1
Total - 323 samples	128	39.6%

4.2 Information that can be required from food business operators

The product labelling that had been provided by the kebab manufacturer was collected by the council sampling officer from the catering business to which the kebab had been supplied. In 60 cases the sampling officer noted that the catering establishment had advised that such information was not available or was reluctant to provide this.

It is a statutory requirement under the General Food Regulation 178/2002, and equivalent UK legislation, for the food business operator to know the origin of the food and provide such information to an enforcement officer upon request. This survey suggests that further guidance about the legal obligations of catering premises in relation to food traceability needs to be given to this industry sector, as well as details of the potential consequences if such obligations are not followed. In addition, the survey also acts as a reminder of the powers available to council enforcement officers at all levels to request such information from food business operators.

4.3 Labelling of doner kebabs to customers at catering premises

As stated, there are a variety of opinions about what species of meat that should be included as ingredients in a 'doner kebab', or indeed whether the meat species should be limited at all. LACORS is unaware of any comprehensive work that has been completed to fully understand what the average consumer expects to receive when ordering a 'doner kebab'.

At the point of sale in a catering establishment there is limited information that is required by law to be provided to the consumer on the nature and ingredients of the doner kebab that is being bought. The consumer relies solely on the name of the product given by the catering establishment, which will commonly be just 'doner kebab' or can be further qualified the type of meat species it includes, such as 'lamb and beef doner kebab'.

In consideration of the limited amount of information available to the consumer about the nature of a doner kebab being sold within a catering establishment and the often differing perspective about what meat a 'doner kebab' actually contains, LACORS suggests that it would be best practice for catering establishments to clarify the term 'doner kebab' with information on the meat species contained. This could include 'lamb doner kebab', 'beef and lamb doner kebab' and 'mixed meat doner kebab'.

However, if such clarification is being provided then the details must be accurate. The accuracy of the product name is dependent on both the caterer and on the product information supplied by the manufacturer.

During this survey it was established that in a number of cases, the information provided by the manufacturer was transformed by the catering establishment into a different product. For example, two products named as beef and lamb kebabs, five labelled as lamb, beef and chicken kebabs, seven labelled as beef kebabs and eight labelled as unspecified doner kebab by the manufacturer, were all sold as lamb kebabs to the final consumer.

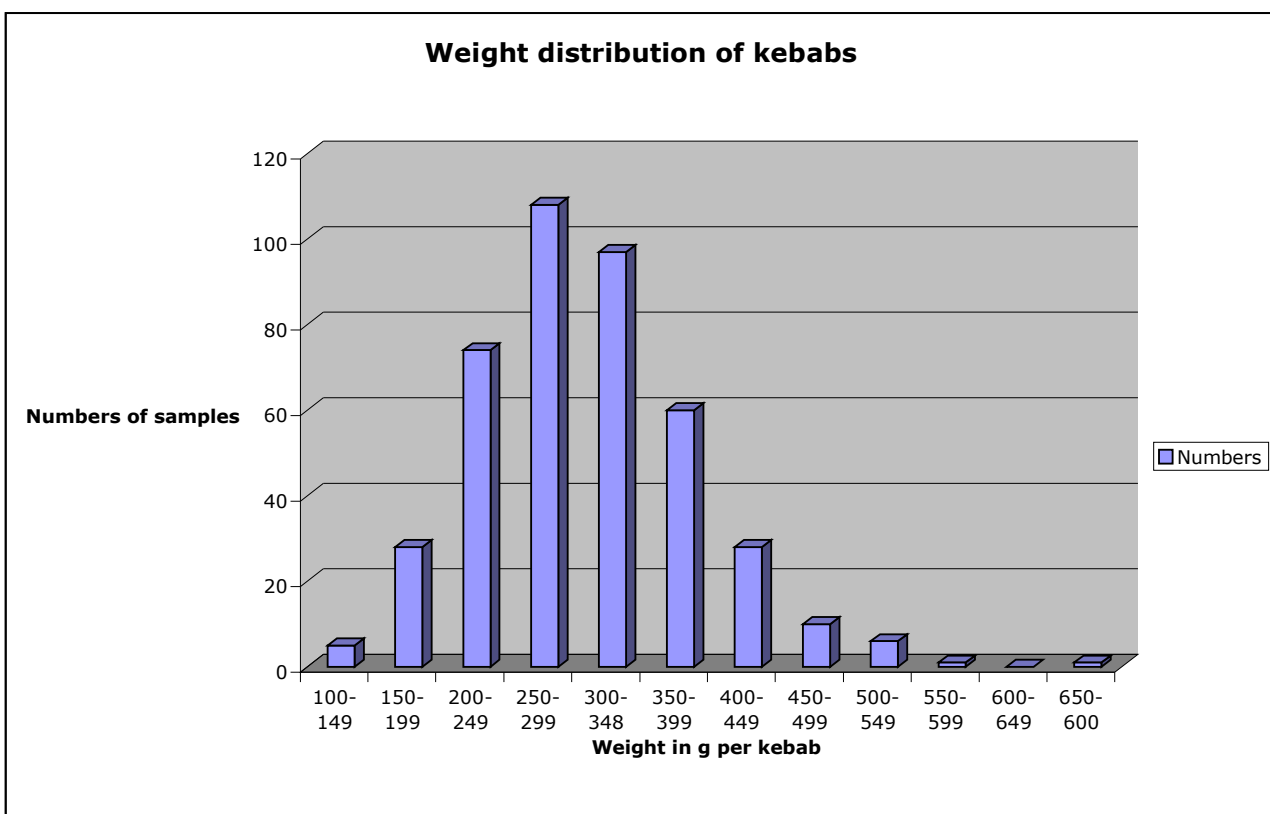
In addition, the manufacturer will often provide product names that incorporate the meat species of the product, however, this can be lost at a catering establishment level. For example seven products named as lamb kebabs by the manufacturer, thirty seven products named as beef and lamb kebabs, sixteen named as beef, chicken and lamb kebabs, six labelled as beef kebabs and nine named as chicken kebabs were all sold as generic 'doner kebabs' at the catering level.

5 Energy value of doner kebabs

5.1 Weight

The graph below conveys the weight of the doner kebabs collected as part of this survey. It should be noted that the consumer is usually provided with the option of requesting a doner kebab in a variety of different sizes.

Graph 1 Weight distribution of doner kebabs



5.2 Calories

Table 3 Calorie content of doner kebabs

	Minimum	Maximum	Average
Weight of kebab g	120	677	301
Calories per 100g	190 kcals	430 kcals	336 kcals
Calories per kebab	365 kcals	1990 kcals	1006 kcals

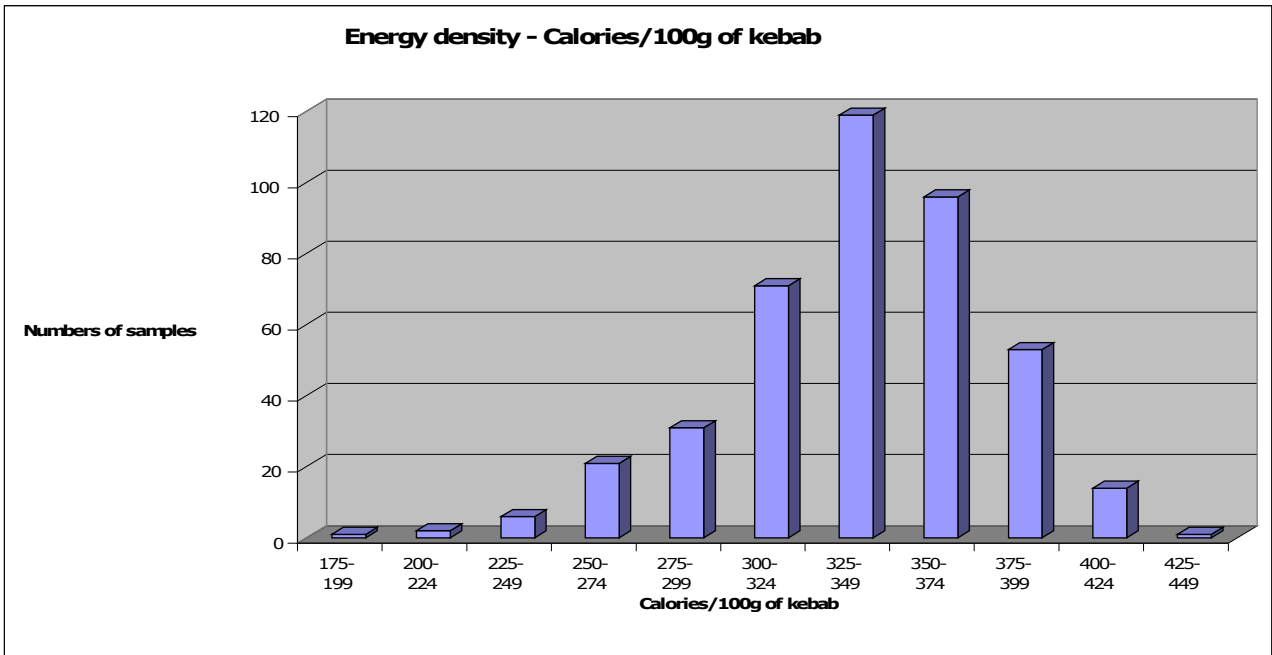
Table 3 provides the average, maximum and minimum calorie content of the 456 kebabs analysed. The maximum number of calories in the doner kebabs sampled was 1990 calories. This one doner kebab would therefore provide almost the entire Guideline Daily Amounts (GDA) of calories for a woman (2000 calories) and 80% of the calorie intake recommended for a man (2500 calories).

5.2.1 Calories per 100g of doner kebab

Graph 2 reflects the calorie content of the doner kebabs sampled per 100g. This provides a tool to compare the calorie content of each kebab, though clearly the total calorie intake of the kebab will depend on the size of kebab served.

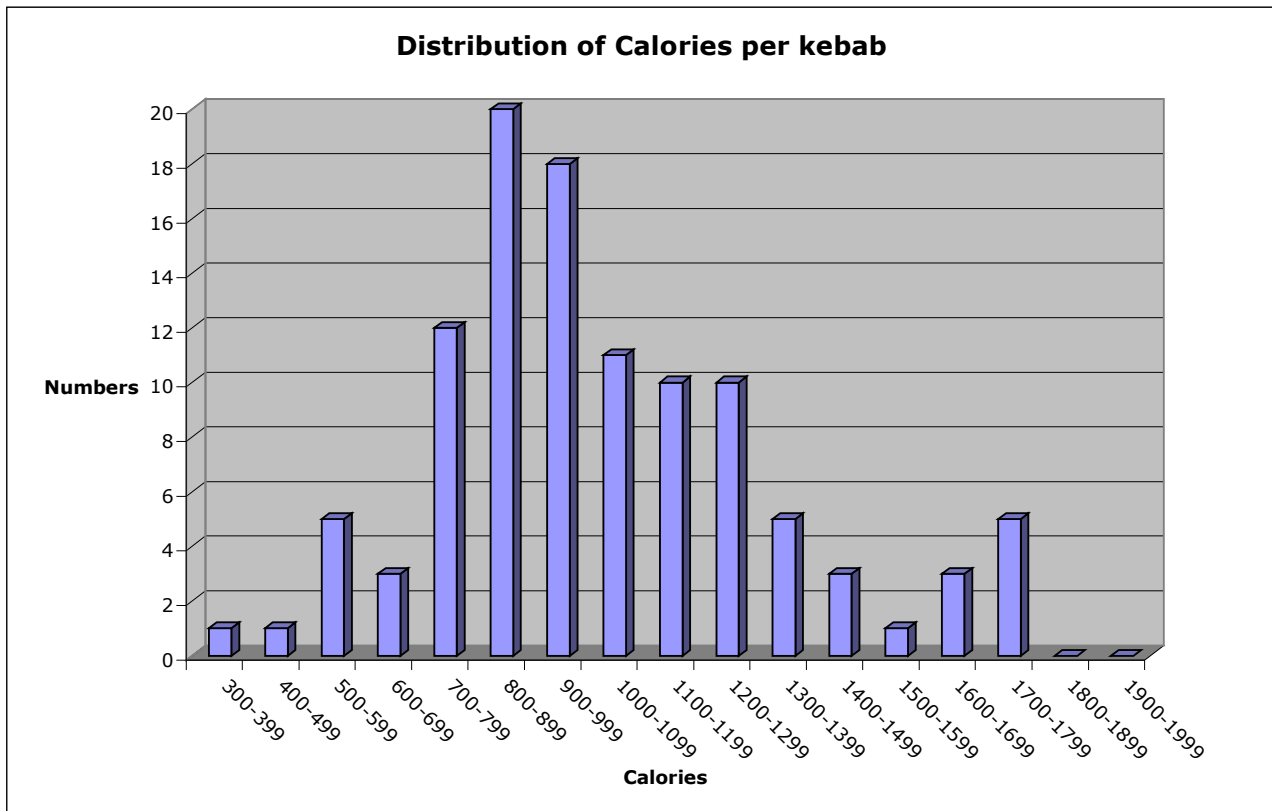
Graph 2 Calories per 100g of doner kebab

Graph 2 demonstrates that the majority of the doner kebabs sampled as part of this survey provide between 300-400 calories per 100g. If we consider that the average weight of the kebabs sampled was 300g then this would again indicate that the average kebab provides approximately 1000 calories, which is over half the Guideline Daily Amounts (GDA) for an adult female. This average is further backed by the statistics contained in Table 3 and Graph 4.



5.2.2 Calories per doner kebab

Graph 3 Calorie content of doner kebabs



On average the doner kebabs sampled as part of this survey contained 1006 calories, however, Graph 3 demonstrates that the largest number of kebabs were between 800 and 899 calories.

5.2.3 Kebab size description, actual weight in grams and calories provided

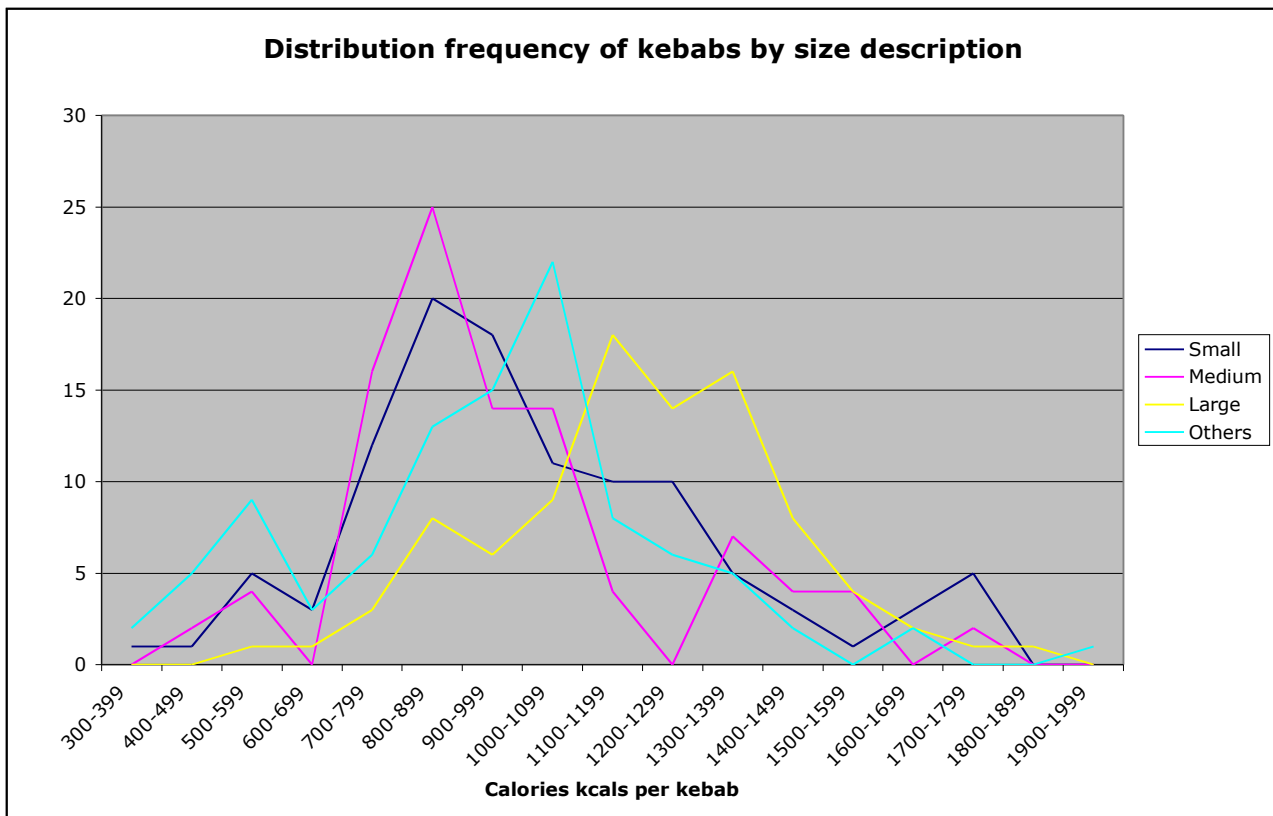
Many catering businesses provide doner kebabs in a variety of sizes. Consumers are often able to choose between a small, medium or large doner kebab, though some catering establishments will only sell doner kebabs in one size.

In the Table 4 below the term “other size indications” refers to a group of other terms which include normal, one size, regular, and standard. Samples received without any indication of the size of kebab ordered, the results have not been included in Table 4 or Table 6.

Table 4 Average, minimum and maximum weight / calorie content for each size of doner kebab

Size description	Number of samples	Weight in g	Calories kcals
Large	86	352 163 - 547	1193 525 - 1853
Medium	46	294 155 - 490	986 495 - 1725
Small	174	287 120 - 540	967 396 - 1742
Other size descriptions	65	293 137 - 677	952 365 - 1990

Graph 4 Calories per kebab based on size description



As anticipated, the doner kebabs described as large were on average the heaviest group and on average contained the highest number of calories. The large kebab offered 12% more calories than the other smaller kinds. However, many of the doner kebabs described as 'large' were actually lighter and contained less calories than those sold as both 'medium' and 'small'. Some described as large were, in fact, significantly lighter in weight and lower in calories than the average for the product described as small.

Interestingly there was little difference in the average weight of products, or in the calorie content, for doner kebabs described as small, medium or all the other descriptions.

The samples taken indicate that a 'small', 'medium' or 'large' kebab can vary greatly in both weight and calorie content depending on where it has been purchased. This survey did not request multiple samples from each shop and therefore further investigation would be needed to assess if the weight and calorie content of a doner kebab vary within a business, as well as between businesses.

This data does present a difficulty for the consumer, it is extremely difficult to predict what weight of product they are likely to receive and the calories it will contain, even if a "small" portion is requested.

Graph 4 does show certain peaks in the calories content against size description, with the majority of small and medium kebabs containing 800 – 900 calories and large about 11-1200 calories, however, the overwhelming observation is that the description of what you ask for and what you receive is relatively random. There is a large overlap of all of the descriptions which makes it almost impossible for the consumer to gauge what they are getting.

The samples were invariably supplied as one kebab per retail outlet, though it would be interesting to know what the calorific value of a large kebab is likely to be from a business who supplies a 'small' kebab with over 1800 calories.

6 Nutritional value of doner kebabs

The survey requested that the kebab meat should be submitted in a pitta bread but with no other accompaniments. It should therefore be considered that, as well as some salads, consumers will frequently chose to add a variety of sauces to their kebab. Such sauces are likely to have additional calorific value and salt content.

6.1 Summary of nutritional values

Table 5 Average and range of nutrient values

Nutrient	Total fat	Saturates	Carbohydrate s	Protein	Salt
Average	62.3	29.5	55.1	56.4	5.9
Range	6.7 - 130	1.1 - 69.2	12.7 - 147	23.0 - 124	0.47 - 16.6
Guideline Daily Allowance (GDA)	GDA woman / man 70 / 95g	GDA woman / man 20 / 30g	GDA woman / man 230 / 300g	GDA woman / man 45 / 55g	GDA woman / man 6.0g

Table 5 shows that the average kebab provides women with 89% of their Guideline Daily Amount (GDA) of fat, 148% of their GDA for saturated fats and 98% of the GDA for salt.

The average kebab provides men with 66% of their Guideline Daily Amount (GDA) of fat, 98% of their GDA for saturated fats and 98% of the GDA for salt.

6.1.1 Fat content of doner kebabs

The maximum Guideline Daily Allowance (GDA) intake of total fat per adult woman for fat is 70g

- 34% of the doner kebabs sampled provided over the maximum Guideline Daily Allowance (GDA) of fat for adult women.
- 91% of the doner kebabs sampled provided over half this GDA.
- 5% of the kebabs sampled provided 150% of the GDA of fat for women.

6.1.2 Saturated fat content of doner kebabs

The maximum Guideline Daily Allowance (GDA) intake of saturated fat per adult woman for fat is 20g.

- 79% of the kebabs provided over this maximum GDA and 94% provided half the daily amount.
- Half the doner kebabs sampled provided 150% of the GDA of saturated fat for an adult woman.

6.1.3 Salt content of doner kebabs

The maximum Guideline Daily Allowance (GDA) intake of salt per adult is 6g.

- The average salt content of the kebabs sampled was 98% of the GDA for salt for an adult.
- The salt content of 43% of the doner kebabs sampled exceeded the daily recommended level of 6g for an adult.
- 91% of the doner kebabs provided over half the recommended daily salt allowance.
- 9% of the kebabs actually provided over 150% of the recommended salt allowance.

The FSA have published draft salt reduction targets for kebabs. The targets recommend that the salt content should be reduced to 1.0g salt per 100g kebab by 2010 and 0.75g per 100g kebab by 2012.

The average salt content of the doner kebabs in this survey was 1.97g / 100g, which is almost twice the target level for 2010 and two and a half times the 2012 target.

In this survey just 3% of the doner kebabs complied with the 2010 target for salt content and only 2% complied with the 2012 salt targets for doner kebabs.

6.2 Nutrient values for different sizes of doner kebab

Table 6 Nutrient values for different sizes of doner kebab

Kebab description and sample numbers	Total fat grams	Saturates grams	Carbohydrates grams	Protein grams	Salt grams
Large - 86	76.5 27.6 - 130	36.5 11.1 - 69.2	57.9 33.3 - 88.1	68.1 25.4 - 124	6.6 1.87 - 11.4
Medium - 46	61.4 25.2 - 126	28.0 8.1 - 58.9	51.7 27.3 - 82.4	56.9 26.3 - 91.1	5.85 2.23 - 12.4
Small - 174	59.8 6.7 - 122	28.4 1.1 - 63.3	52.2 21 - 136	54.8 23.0 - 112	5.6 0.47 - 15.3
Miscellaneous described kebabs - 65	57.2 6.7 - 111	27.4 3.0 - 55.9	57.3 12.7 - 147	52.2 24.2 - 112	5.9 1.39 - 16.6




The detailed composition of the kebabs based on the description of their size mirrors the calorific values found in Table 3 and Graph 3.

6.3 Information for the consumer

The FSA recommended approach to front of pack nutritional labelling for pre packed food products is aimed at providing the consumer with easily accessible and easily understood information about the product that they are consuming. The recent Cabinet Office report, 'Food Matters', recognises the importance of this.

The FSA recommended traffic light system for pre packed food indicates whether a product is high (red), medium (amber) or low (green) in fats, sugar and salt. Current advice from the FSA traffic light system is that if a portion of food contains more than 21g of fat, more than 6g of saturated fat and more than 2.4 g of salt, it is recommended that the food be marked with three red traffic lights, which would immediately inform the customer of the composition and that the food should be consumed in moderation or avoided.

In this survey of 494 doner kebabs sampled

-  **97% of the kebabs would be red for fat**
-  **98% of the kebabs would be red for saturates**
-  **96% of the kebabs would be red for salt**

7. Regional Variation

7.1 Calories and weight

Every region and local area will have its own unique community of consumers and businesses.

The information in Table 7 aims to provide a comparison of the weight and calorific value of doner kebabs from different regions within the UK.

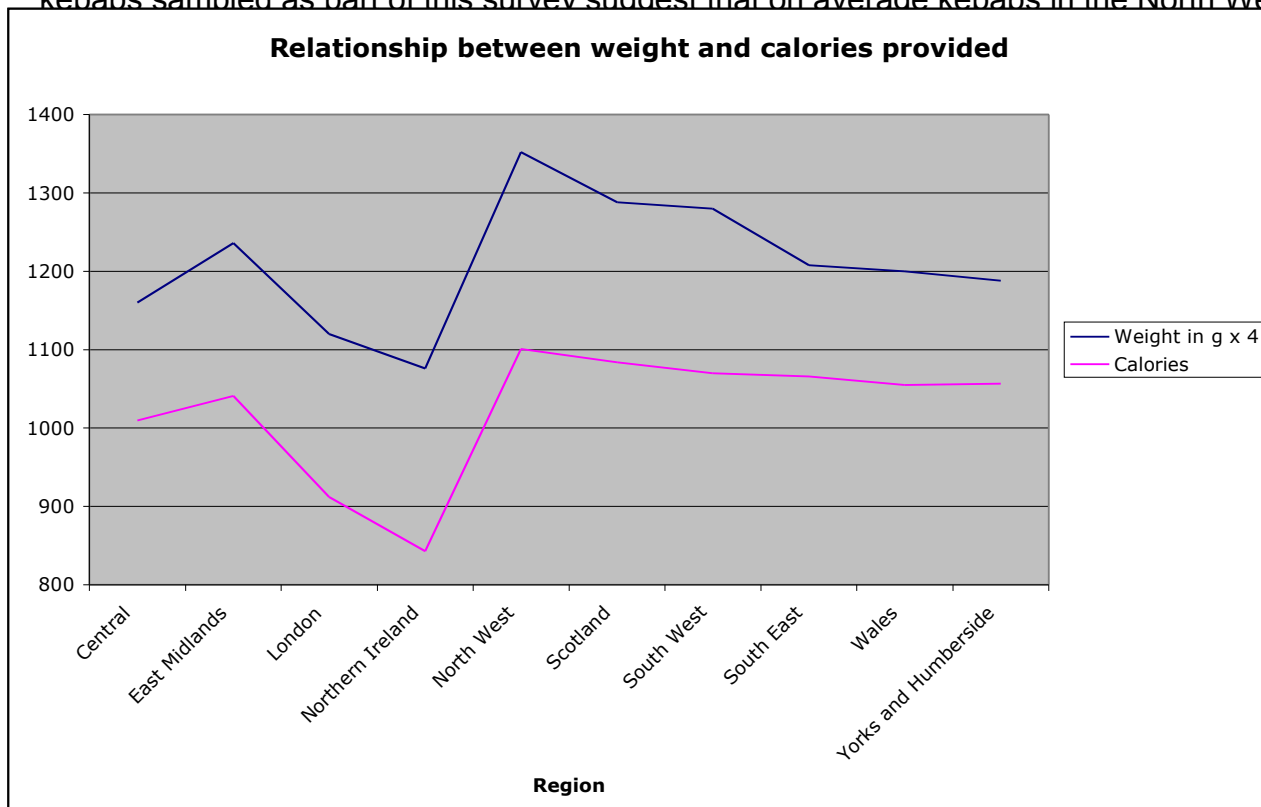
The data included in Table 7 and Table 10 has been limited to those samples that were directly comparable. For example, a number samples were submitted without bread and therefore these have not been included.

Table 7 Weight and calorie comparison of doner kebabs on a regional basis

Region	Number	Average weight in g	Average calories per kebab
Central	48	290 191 -430	1010 605 - 1620

Region	Number	Average weight in g	Average calories per kebab
East Midlands	25	309 201 - 473	1041 662 - 1470
London	77	280 120 - 505	912 396 - 1626
Northern Ireland	18	269 137 - 432	843 365 - 1312
North East	None accepted		
North West	45	338 194 - 667	1101 509 - 1990
Scotland	50	322 173 - 582	1084 513 - 1903
South West	74	320 155 - 547	1070 495 - 1853
South East	47	302 172 - 521	1066 586 - 1690
Wales	25	300 206 - 423	1055 718 - 1560
Yorkshire and Humberside	6	297 271 - 327	1057 982 - 1187

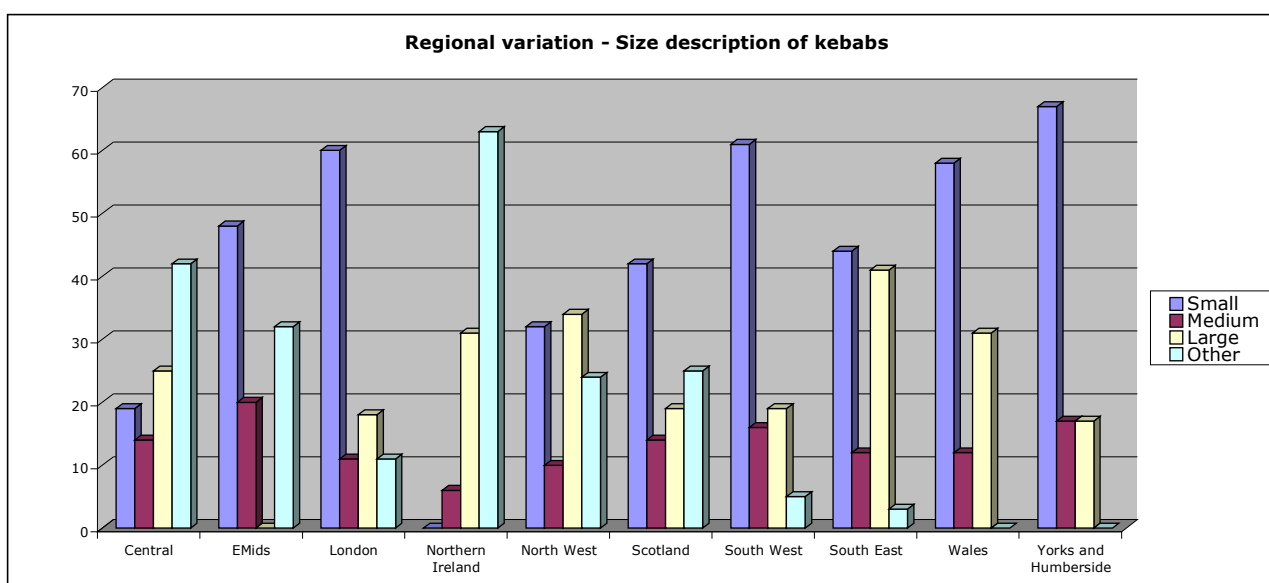
The information in Table 7 shows that an average kebab in Northern Ireland or London will contain significantly less calories than a kebab bought elsewhere in the UK. The doner kebabs sampled as part of this survey suggest that on average kebabs in the North West



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7.2 Calories and size of kebab

Graph 6 Regional comparison of the size of doner kebabs requested



Graph 6 highlights that in London a large percentage of the doner kebabs sampled were described as 'small', which is likely to have contributed to the lower average calorie content of kebabs in the London area. However, the information in section 5.2.3 highlights that the size of kebab requested provides no guarantees to the consumer about the actual weight of the kebab received.

This survey is large enough to try to select a small portion of more specifically labelled products and analyse their results in greater depth. In this survey far more doner kebabs labelled as "small" were purchased than any other description. By selecting the two regions with the most samples and analysing the data it may be possible to draw more specific conclusions. The two regions London and the South West were selected and the data presented below.

Table 8 Further analysis of small doner kebabs in London and the South West

Region	Number	Minimum	Maximum	Average
London	37	396	1626	878
South West	39	500	1742	1083

From this information it can be deduced that the average small kebab from the South West provides almost 25% more calories than the equivalent doner kebab in London.

The general term “kebab” include all species descriptions but by analysing other information provided on the sampling forms, it was found that the samples from London had significantly more chicken kebabs and products made in the retail shop than those from the South West. The composition of chicken kebabs is usually significantly different from kebabs made from the red meat species and so another population was chosen, on the more select grounds of small kebabs described as being made of lamb .

Table 9 Further analysis of small lamb doner kebabs in London and the South West

Region	Number	Minimum	Maximum	Average
London	26	499	1067	968
South West	23	520	1742	1160

This breakdown further compounds the position that the average small kebab in the South West contains significantly more calories than the equivalent doner kebab in London. Small lamb doner kebabs from the South West provided 20% more calories than those purchased in London.

7.3 Regional comparison of nutritional values

Table 10 Comparison of average nutritional values on a regional basis

Region	Total fat	Saturates	Carbohydrates	Protein	Salt
Central 48 samples	65.5 34.6 - 112	33.9 16.7 – 55.9	54.2 27.3 – 80.2	51.5 30.0 – 91.1	6.4 3.5 – 12.4
East Midlands 25 samples	69.1 33.9 - 109	35.4 14.4 – 56.4	49.5 36.9 – 75.5	55.3 34.3 – 77.9	6.4 1.8 – 11.3
London 77 samples	52.4 16.3 – 98.4	24.2 5.0 – 50.9	50.3 24.2 – 136	59.7 28 – 109	4.7 0.47 – 9.6

Region	Total fat	Saturates	Carbohydrates	Protein	Salt
Northern Ireland 18 samples	44.1 6.7 – 81.9	19.7 3.0 – 41.3	65.0 32.7 – 102	46.6 26.4 – 87.4	5.1 1.39 – 11.2
North East No samples accepted					
North West 45 samples	68.2 13.9 - 117	32.2 3.6 – 59.9	60.5 12.7 - 147	61.5 25.4 - 112	6.6 1.4 – 16.6
Scotland 50 samples	69.6 19.8 - 126	30.2 7.5 – 58.9	62.3 35.1 - 130	54.1 24.2 – 91.1	6.3 2.49 – 12.6
South West 74 samples	67.3 6.7 - 130	33.1 1.1 – 63.8	55.0 21 – 98.8	60.2 25.4 - 124	6.7 1.11 – 15.3
South East 47 samples	69.8 27.8 -130	32.9 13.9 – 69.2	50.3 25.0 – 94.5	59.4 30.0 – 90.0	6.1 2.23 – 10.4
Wales 25 samples	69.4 37.0 - 113	31.9 11.7 – 55.8	49.4 36.2 – 67.4	59.6 39.1 - 109	5.0 2.83 – 7.6
Yorkshire and Humberside 6 samples	72.6 65.3 – 83.3	34.9 31.8 – 40.6	41.7 34 – 51.3	59.2 53.3 – 71.3	5.4 4.4 – 7.6

8. The ten doner kebabs with the most calories

A simplistic analysis of the ten doner kebabs containing the highest number of calories shows that kebabs collected in the South West of England provide 50% of the top ten and that Cheshire provided two within the top ten, including the very largest.

This table also shows that four of the kebabs with the highest calorie content were actually described as ‘small’ at the point of sale. Only three of the top ten were described as ‘large’. This further compounds the evidence that the size description at the point of sale has limited bearing on the size of the kebab received.

Table 10 The ten doner kebabs with the most calories

Calories	Authority	Size Description
1990	Cheshire	Standard
1903	North Ayrshire	no description

Calories	Authority	Size Description
1853	Wiltshire	Large
1742	Somerset	Small
1725	Inverclyde	Medium
1709	Cheshire	Large
1690	Oxford	Large
1670	Gloucestershire	Small
1665	Somerset	Small
1661	Somerset	Small

9. Conclusions

This survey provides a unique and comprehensive nationwide picture of the composition and labelling of doner kebabs.

The results of the survey raise a number of concerns about the accuracy of labelling on doner kebabs supplied by manufacturers to catering premises.

On 107 occasions the meat species reflected printed on the label of the product did not accurately reflect the meat species actually contained within the doner kebab. This either means that the manufacturer is not declaring all the ingredients included in the kebab or there is possible contamination from other manufacturing processes. Neither of these is acceptable to the consumer, most notably, due to religious and cultural reasons, when analysis has shown quantities of pork in the doner kebabs sampled.

A significant number of manufacturers are also failing to record the ingredients, especially the meat species present within the doner kebab, in an appropriate manner on the labelling. This is extremely concerning because information on the product label is vital for traceability purposes and to ensure the buyer has accurate information about the product they have bought.

It is essential that catering premises receive accurate information about the ingredients of doner kebabs from the manufacturers. An accurate ingredient list is an essential part of product traceability and it also ensures that caterers can provide appropriate product information to the final consumer.

Caterers need to understand their legal obligations in relation to traceability and presenting such information to a local authority enforcement officer. Without this level of traceability, the Food Standards Agency (FSA) and councils cannot properly manage food safety issues.

It is clear that the doner kebabs collected as part of this survey include a wide and varying number of meat species. This is interesting because despite the fact that term 'doner' actually relates to the cooking method for a doner kebab, many consumers believe that

doner kebabs consist of only lamb meat. While the name doner kebab can be applied to a kebab containing any meat species, LACORS would recommend that best practice is to identify the meat species of the kebab if it is not just a lamb kebab. Terms such as 'beef and lamb doner kebab' or 'mixed meat doner kebab' could be used.

The above concerns relating to products labelling and traceability of doner kebabs suggest that further specific guidance is required for both manufacturers and catering premises selling doner kebabs. LACORS will work with councils to develop and share such guidance that will enable councils across the UK to work with businesses in their area.

This survey has clearly shown that the size of doner kebab can vary greatly. Small kebabs sampled as part of this survey could vary from 120 grams to 540 grams. Some 'small' kebabs sampled as part of this survey contain more calories than those described as 'large'. This makes it very difficult for a consumer to make adjustments to their diet, and limit the calorie, salt and fat intake of the kebab they are eating. It may be difficult to address this issue through guidance because of the very large number of businesses at a catering level, the variety of consumer demands and local variations.

The average kebab provides over 1000 calories, which is over half the Guideline Daily Allowance (GDA) for women and 40% for men. This is before any additional sauces or accompaniments are added to the kebabs.

A single doner kebab could supply a man with 80% of their Guideline Daily Allowance (GDA) of calories, 136% of their GDA of fat and 230% of their GDA of saturated fats. For an adult woman, the percentage figures rise to 99.5% of the GDA for calories, 185% of the GDA for fat and 346% of their GDA of saturated fats.

This survey shows that on average a single kebab supplies 98% of the recommended daily salt intake for an adult. While the average figure portrays a concerning picture in relation to salt, it should also be noted that a single kebab could supply 277% of the recommended daily salt intake for an adult.

LACORS is aware that the FSA has already begun work with larger catering chains to improve the nutritional value of their products and provide further information at the point of sale to promote consumer awareness. LACORS is strongly supportive of this work and hopes that the FSA will work with councils and LACORS in the near future to ensure that smaller catering premises also have the support they need to further inform customers.

There is some evidence that similar doner kebab products vary on a regional basis, with directly comparable data showing that a small lamb doner kebab in the South West provides 20% more calories than the same product in London.

While it is accepted that doner kebabs are unlikely to constitute the main part of an individual's diet, the findings of this report suggest that it may be time to initiate a debate on how manufacturers can realistically reduce the extreme levels of fat and salt content in some doner kebabs.

In order to assist businesses LACORS will organise a half day workshop for those councils who are interested to discuss the issues raised in this survey and to develop a consistent approach to the achievement of compliance in the kebab industry.

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Appendix 1

Local Authorities taking part in the survey

Aberdeen City
Aberdeenshire
Antrim
Ballymena
Banbridge
Barnet
Belfast City
Birmingham
Bournemouth
Bracknell Forest
Bridgend
Bury
Carmarthen
Castlereagh
Cheshire
City of York
Clackmannanshire
Coleraine
Craigavon
Cumbria
Derbyshire
Down District
Dudley
Dungannon and South Tyrone
Durham
Ealing
East Ayrshire
East Dunbartonshire
East Lothian
East Renfrewshire
East Sussex
Edinburgh
Enfield
Glasgow
Gloucestershire
Hackney
Hammersmith and Fulham
Hampshire
Haringey
Highland
Hounslow
Inverclyde

Islington
Kensington and Chelsea
Kent
Kingston
Leicestershire
Lincolnshire
Midlothian
Milton Keynes
Moray Council
Newport
Newtownabby
NMDC
North Ayrshire
North Down
Oldham
Oxfordshire
Plymouth
Poole
Powys
Renfrewshire
Rhondda Cynon Taff
Richmond
Sefton
Shetland
Somerset
South Ayrshire
South Lanarkshire
Southwark
St Helens
Staffordshire
Strabane
Surrey
Swindon
Torbay
Tower Hamlets
Wandsworth
Warrington
West Dunbartonshire
West Lothian
Westminster
Wigan
Wiltshire
Wirral
Worcestershire