

PROGRAMME OF MINI SURVEYS: PIZZA SURVEY

Summary

- The Food Standards Agency has recently carried out a survey to look at the levels of a limited range of nutrients, including sodium (salt), fat and sugar, in pizzas. The results of this survey show that 65 per cent of the pizzas included in the survey contained “a lot” of salt (more than 1.5g per 100g)¹. 32 per cent of the pizzas contained more than 3g of salt per portion; this is equal to or more than 50 per cent of the recommended maximum daily intake for an adult. Where direct comparisons were possible, on average, retail pizzas contained more salt and fat than takeaway pizzas.

Key Points

- Ninety-eight (98) samples of pizza from 14 different categories, including takeaway and retail products, and vegetable and meat topped pizzas were purchased and analysed to determine the levels of a limited number of nutrients, including sodium (salt), fat and sugar. The retail pizzas were prepared according to the instructions on the packaging and then analysed. Composite samples consisting of similar products were also analysed.
- This survey has highlighted a number of issues regarding the nutritional information provided on product labels. This includes some products that do not provide any information; others do not provide information on sodium levels; and whether the information is provided ‘as sold’ or ‘as cooked’.
- The results of this survey show that 65 per cent of the pizzas included in the survey contained “a lot” of salt (more than 1.5g per 100g)¹.

- 32 per cent of the pizzas included in the survey contained 3g of salt or more per portion (adults portion is 200g). This is equal to or more than 50 per cent of the recommended maximum daily intake for an adult (6g per day)².
- Only 5 per cent of pizzas included in the survey contained less than 2g of salt per portion (this does not include children's pizza).
- The ranges of fat and salt values found were considerable. The salt content of the pizzas sampled ranged from 0.5 g in a child's portion (95g) of a children's cheese and tomato pizza up to 4.4g in an adult's portion (200g) of a meat-based pizza. Fat ranged from 5.6g in a child's portion (95g) of the same children's cheese and tomato pizza up to 36.4g in an adult's portion (200g) of a cheese and tomato microwavable pizza.
- On average "Healthy Eating" cheese and tomato pizzas (from retail outlets) contained lower amounts of fat and salt than standard retail cheese and tomato pizzas. Healthy eating cheese and tomato pizzas contained 13.1g fat per portion and 2.2g salt (range 1.5-2.7g) per portion, whereas standard retailer cheese and tomato pizzas contained 22.9g of fat and 2.9g of salt (average of deep pan and thin and crispy).
- Thin and crispy and deep pan retail cheese and tomato pizzas contained very similar levels of fat and salt; both composite samples contained 23.6g fat per portion; and 3.0g and 2.8g salt per portion respectively.
- Vegetable topped thin and crispy type pizzas were lower in fat and salt than meat topped thin and crispy type pizzas from retail outlets; 19.2g fat and 2.5g salt per portion and 23.4g of fat and 3.5g salt per portion, respectively
- Where direct comparisons were possible, on average, retail pizzas contained more salt than takeaway pizzas (2.9g and 2.5g salt per portion, respectively) and slightly more fat (21g and 17g fat per portion, respectively).
- Due to changes in the pizza market and the products available, only limited comparisons can be made between this survey and previous data collected in a survey 10 years ago (1994)³. Values for composite categories in the current survey are broadly

similar to the 1994 survey. Any differences present are within the limits of analytical variation.

Background

The objective of the programme of mini surveys is to provide up-to-date information on the levels of sodium (salt), fat, sugar and a limited range of other nutrients, in processed foods. This includes those foods that are major contributors to salt, fat and sugar in the diets of both adults and children. The data obtained are being used to raise consumer awareness of related food and diet issues and also to inform discussions with the food industry, and other bodies, aimed at encouraging changes in the composition of processed foods. This will, in turn, help consumers to be better able to choose a healthy diet and achieve nutrient intake guidelines.

The results of the pizzas survey will be incorporated into the Agency's nutrient databanks for the National Diet and Nutrition Survey programme, and the Expenditure and Food Survey, together with future publications in the series *McCance and Widdowson's The Composition of Foods*.

Salt intakes of adults are currently around 9.5 grams per person per day,⁴ which is considerably higher than the target daily intake 6 grams per person per day, originally recommended by the Committee on Medical Aspects of Food Policy in 1994⁵ and endorsed by the Scientific Advisory Committee on Nutrition (SACN) in its recent report on Salt and Health.²

The SACN report also made recommendations on the maximum amounts of salt that children should have in their diet. These amounts are:

- up to 6 months old – less than 1g per day
- 7 to 12 months – 1g per day
- 1 to 3 years – 2g per day
- 4 to 6 years – 3g per day
- 7 to 10 years – 5g per day

From the age of 11, children should be having no more than about 6g per day, the same level that is recommended for adults.

A habitually high intake of sodium has been linked to a higher than average blood pressure, which may lead to an increased risk of suffering heart disease or a stroke.

The National Diet and Nutrition Survey (NDNS) of adults aged 19 to 64 years showed that the mean daily total fat intake for men is currently around 87g (36 per cent of daily food energy) and 61g⁶ (35 per cent of daily food energy) for women. This is close to the current recommendations that fat should contribute, on average, no more than 35 per cent of daily food energy intake.⁷ A habitually high intake of fat is linked to becoming overweight and developing heart disease.

This NDNS also showed that, on average, men consumed around 110g of pizza over the 7 day reporting period, and women approximately 59g⁸, contributing approximately 2 per cent to adults intake of salt (sodium)⁴; around 2 per cent to total fat and 2 per cent to saturated fat intake.⁶

Methodology

Ninety-eight (98) samples of pizza from 14 different categories were purchased in the Midlands during January and February 2004. These categories are listed in Table 1a. The range of pizzas sampled was designed to include the most commonly consumed pizzas, to allow comparison with existing data where possible and to bring in types not previously analysed. For this reason, the sampling protocol tried to mirror, as far as possible that used previously. However, there had been some considerable changes in the range of pizza bases and toppings since they were last tested so it was not always possible to undertake direct comparisons. Market share data from Taylor Nelson Sofres was used to inform the sampling plan so that the most commonly purchased pizzas were included in the survey.

A full list of the individual samples included in the survey is given in Table 1b. The absence of a particular brand means only that the brand has not been included in the survey. No further meaning should be read into its absence from the report. In addition, the samples used in this survey represent a snapshot of the pizza market. The survey is not exhaustive and should not be treated as such – and the resultant conclusions reached are indicative only.

The pizzas that required cooking were prepared according to the instructions on the packaging and each then analysed as individual samples. Composite samples were also analysed, consisting of similar products, except for the French Bread Pizza category which consisted of one product only. This process of combining samples within categories allows a single, robust set of nutrient values to be derived for each product type for use in assessing nutrient intakes from food consumption data collected via the Agency's dietary survey programme.

The individual and composite samples were analysed by Campden and Chorleywood Food Research Association for a number of nutrients. A full list of these is given in Table 2. The methods used to conduct the analyses are included at Annex One, along with details of the quality control measures employed.

Prior to the survey, a short study was undertaken to examine the variation between three different packs of the same pizza product. Two different pizzas were chosen, and three different packs of each were purchased and analysed. The results showed reasonably consistent results within the three pizzas in each set and therefore it was concluded that, given the aims of the survey, it was acceptable to analyse only one pizza for each individual sample. Details are available in the full report of the survey.

Results

The results of the composite samples can be seen in Table 3, the main nutrient analyses of the individual and composite samples can be found in Table 4; and the results of the fatty acids analyses can be found at Table 5.

In order to make comparisons between products and categories, the salt and fat content of an adult portion of pizza was calculated for each product tested. For the purposes of this survey, a portion is defined as 200g of pizza, approximately half a standard retail pizza. A child's portion has been defined as 95g, the size of several of the children's pizzas included in the survey. The salt and fat content of a portion were then compared to the Guideline Daily Amounts (GDAs) – for adults, these are 6g salt, and 82.5g fat (an average of 90g (men) and 70g (women)). For children comparisons were made with the recommended daily maximum intake of salt for 7-10 year olds (5g)², and a derived

maximum intake for fat of 72g (based on population average maximum recommendations for fat and estimated average requirements for energy of males and females aged 7-10 years⁷).

Products were compared on both an individual and composite sample basis. The comparison of the individual products allows differences to be highlighted for different brands of the same product. The comparisons of the composite samples allows differences to be highlighted between the different types of products, as well as making comparisons with the data obtained during previous analyses³ (where available).

General Comments

- The composite samples provided average data for each category analysed and allowed comparisons between categories.
 - The Healthy Eating cheese and tomato pizza composite had the lowest salt and fat per portion, 2.2g and 16.5g respectively.
 - The thin base meat topped retailer pizza composite had the highest salt content per portion at 3.5g per portion and the third highest fat content at 28.4g per portion.
- The results of this survey show that 65 per cent of the pizzas included in the survey contained “a lot” of salt (more than 1.5g per 100g)¹.
- 32 per cent of the pizzas included in the survey contained 3g of salt or more per portion (adults portion is 200g). This is equal to or more than 50 per cent of the recommended maximum daily intake for an adult (6g per day)².
- Only 5 per cent of pizzas included in the survey contained less than 2g of salt per portion (this does not include children’s pizza).
- The ranges of fat and salt values found were considerable. The salt content of the pizzas sampled ranged from 0.5 g in a child’s portion (95g) of a children’s cheese and tomato pizza up to 4.4g in an adult’s portion (200g) of a meat-based pizza. Fat ranged from 5.6g in a child’s portion (95g) of the same children’s cheese and tomato pizza up to 36.4g in an adult’s portion (200g) of a cheese and tomato microwavable pizza.

- On average “Healthy Eating” cheese and tomato pizzas (from retail outlets) contained lower amounts of fat and salt than standard retail cheese and tomato pizzas. Healthy eating cheese and tomato pizzas contained 13.1g fat per portion and 2.2g salt (range 1.5-2.7g) per portion, whereas standard retailer cheese and tomato pizzas contained 22.9g of fat and 2.9g of salt (average of deep pan and thin and crispy).
- Thin and crispy and deep pan retail cheese and tomato pizzas contained very similar levels of fat and salt; both composite samples contained 23.6g fat per portion; and 3.0g and 2.8g salt per portion respectively.
- Vegetable topped thin and crispy type pizzas were lower in fat and salt than meat topped thin and crispy type pizzas from retail outlets; 19.2g fat and 2.5g salt per portion and 23.4g of fat and 3.5g salt per portion, respectively
- Vegetable topped pizzas from retail outlets have a higher fat content than takeaway ones; but their salt levels are similar (19.2g and 14.6g of fat per portion, and 2.5g and 2.3g of salt per portion, respectively).
- Of the meat pizzas, those with mixed meats or pepperoni contained the most fat and salt (24.4g of fat and 3.4g of salt per portion, and 24.7g of fat and 3.3g of salt per portion, respectively), while pizzas topped with chicken contained the least (14.8g of fat and 2.6g of salt).

Individual products - Salt

Table 6 identifies the salt content of the individual pizza products per portion and ranks the products within each category. Of those products tested and excluding children’s pizzas, the 3 products with the highest salt content per portion (as a percentage of the recommend daily maximum intake) were:

- Dr Oetker Crisp Fine Base Speciale Pizza – 4.4g (73 per cent)
- Tesco Stonebaked Pepperoni Pizza – 4.1g (68 per cent)
- Sainsbury’s Deep and Loaded American Style Meat Feast Pizza – 3.7g (61 per cent)

The 3 products with the lowest salt content per portion were:

- Safeway Pizzaroma Stonebaked Margherita Pizza – 1.4g (23 per cent)
- Asda Good for You Stonebaked Margherita Pizza – 1.5g (25 per cent)
- Tesco Italiano Classico Spinach and Ricotta Pizza – 1.6g (26 per cent)

Individual products – Fat

Table 7 identifies the fat content of the individual pizza products per portion and ranks the products within each category. Of those products tested and excluding children's pizzas, the 3 with the highest fat content per portion (as a percentage of the recommended daily maximum intake) were:

- McCain Micro Cheese and Tomato Pizza – 36.4g (44 per cent)
- Iceland Thin and Crispy Cheese and Tomato Pizza – 32.2g (39 per cent)
- Dr Oetker Crisp Fine Base Mozzarella and Tomato Pizza – 30.6g (37 per cent)

The 3 pizzas with the lowest fat content per portion were:

- Dominos Chicken Feast Pizza – 7.4g – (9 per cent)
- Dominos Vegetarian Supreme Pizza – 8.2g (10 per cent)
- Weight Watchers Tomato Basil and Garlic Pizza – 8.8g (11 per cent)

Retail compared with takeaway pizzas

Wherever possible comparative retail and takeaway pizzas were included in the survey (Table 8). On average takeaway pizza contained less fat and salt compared with retail pizzas; takeaway pizzas contained 16.7g fat per portion and 2.5g salt per portion compared with 21.1g and 2.9g respectively for retail pizzas.

- Thin and crispy cheese and tomato retail pizzas contained more fat and salt (23.6g fat and 3.0g salt per portion) compared with takeaway cheese and tomato pizzas (18g fat and 2.7g salt per portion).
- Deep pan meat topped pizzas purchased from retail outlets were higher in fat and salt than deep pan meat topped pizzas purchased from takeaways (20.4g of fat and 3.1g of salt per portion and 17.6g of fat and 2.6g of salt, respectively).

Takeaway pizzas also contained slightly lower levels of saturated fat compared with retail pizzas, on average takeaway pizzas contained 8.3g saturated fat per portion and retail pizzas contained 9.0g.

Children's Pizza

Six children's pizzas were included in the survey.

- Most (6 out of 7) of the children's pizzas contained 1.0g or more of salt per child's portion; with the highest being both Iceland and Sainsbury's at 1.4g of salt per portion, and the lowest being Waitrose at 0.5g salt per portion.
- A portion of the Iceland or Sainsbury's children's pizza would contribute 28 per cent of a day's target salt intake for a child aged 7 to 10 years at 5g; this increases to 47 per cent of the salt intake for a child aged 4 to 6 years. In contrast, the Waitrose pizza would contribute only 10 per cent of a day's salt intake for a child aged 7 to 10 years; and 17 per cent of the salt intake for a child aged 4 to 6 years.
- The Children's pizzas analysed would contribute between 8 and 13 per cent of a 7-10 year old child's daily recommended fat intake.

Brand Companies

In many cases individual pizzas that had some of the highest levels of fat also had some of the lowest levels of salt and vice versa; this made it difficult to identify pizzas that have lower levels of both salt and fat. There was also considerable variation in salt and fat content of different varieties of pizza within a brand. Therefore, it was difficult to identify a brand that consistently produce pizzas lower in salt and fat.

Comparison with previous data

Due to changes in the pizza market and the products available, only limited comparisons can be made between this survey and previous data collected in a survey 10 years ago (1994)³. Values for composite categories in the current survey are broadly similar to the 1994 survey. Any differences present are within the limits of analytical variation.

Comparisons between analytical and label data

The analytical data was compared with the information stated in the nutrition panel on the product label. All products in this survey were analysed as cooked and therefore discrepancies have only been highlighted when labelling information also referred to a cooked product. The results obtained for the majority of pizzas were generally within the limits of analytical variation (as determined by the LACORS Guidance on Tolerances⁹). However, the results obtained for some samples of pizzas, for some nutrients, were outside these limits – these can be found in Table 9. The relevant manufacturers were contacted and asked to comment on these findings. The comments received can be found at Annex Three.

This survey has highlighted a number of issues regarding the nutritional information provided on product labels. This includes some products that do not provide any information; others do not provide information on sodium levels; and whether the information is provided 'as sold' or 'as cooked'.

Some manufacturers may have reformulated their pizzas or the nutritional information provided on product labels since the sampling was carried out for this survey.

Forward Look

The food industry has a very important role to play in helping consumers to reduce their salt intake. They can do this in a number of ways, including reducing the levels of salt in processed foods and by providing more 'reduced' or 'low' salt options. The industry has recognised this and so have a range of initiatives currently ongoing to help consumers.

The Agency has set up a programme to track and monitor these commitments and reductions. This includes obtaining data on the current levels of salt in processed foods so that changes made can be checked and verified; as well as tracking changes in salt intakes in the UK population. This pizza survey can be used in the future as a reference point for salt levels in early 2004.

In addition, the Agency is currently considering working together with the food industry to develop cross-industry initiatives in relation to salt reduction in pizzas (as well as sandwiches and ready meals).

References

1. Food Standards Agency. *Healthy Eating: Salt*. Ancient House Printing Group, 2003.
2. Scientific Advisory Committee on Nutrition (2003) *Salt and Health* London: TSO.
3. RHM Technology (1994) *Nutrient Analysis of Pizzas: Analytical Results* FSA
4. Henderson, L. et al (2003) *The National Diet and Nutrition Survey: adults aged 19 to 64 years. Volume 3: Vitamin and mineral intake and urinary analytes* London: TSO
5. Department of Health (1994) *Nutritional Aspects of Cardiovascular Disease Report on Health and Social Subjects no 46*. London: HMSO
6. Henderson, L., Gregory, J., Irving, K. and Swan, G. (2003) *The National Diet and Nutrition Survey: adults aged 19 to 64 years. Volume 2: Energy, protein, carbohydrate, fat and alcohol intake* London: TSO
7. Department of Health (1991) *Dietary Reference Values for Food energy and Nutrients for the United Kingdom Report on Health and Social Subjects no 41*. London: HMSO
8. Henderson, L., Gregory, J. and Swan, G. (2002) *The National Diet and Nutrition Survey: adults aged 19 to 64 years. Volume 1: Types and quantities of foods consumed* London: TSO
9. Working LACORS Guidance on Tolerances to be applied to Nutritional Labelling Declaration, May 2003.

Further Information

The report of this survey (entitled Programme of Mini Surveys: Pizza Survey) is held in the Dr Elsie Widdowson Library and Information Service at the Food Standards Agency headquarters in London. If you would like to consult or receive a copy (a small charge for photocopying will be made), please contact:

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