

## IN BRIEF

- UK children are being exposed to very high levels of food advertising during designated children's television programmes.
- Most of this food advertising is for products with a high sugar, salt or fat content.
- There is increasing concern that excessive food advertising may be having a detrimental effect on children's overall and dental health.

# Content analysis of children's television advertising in relation to dental health

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This paper provides some disturbing facts and figures about the amount of television being watched by children. In addition, it reports on the volume and type of television advertising aimed at young people, both in the United Kingdom and other developed countries. In view of recent public and professional concern as to the possible adverse effects of food advertising on children's health, this study set out to examine what proportion of television advertisements, directed at children, promoted products potentially harmful to dental health. Forty-one hours of children's television programming broadcast on ITV1, the main UK commercial channel, were recorded on to videotape for subsequent analysis. Almost 1,000 adverts were analysed; each was timed and broadly categorised as relating to a food/drink product or non food/drink product. Advertisements for food and drink were further subdivided according to their sugar and/or acid content. We found that, on average, 24 adverts were shown per broadcast hour, which accounted for 15.8% of the total schedule time. 34.8% of adverts related to food/drink products, and 95.3% of these promoted products that were deemed potentially cariogenic or erosive. The most frequently promoted food/drink products included breakfast cereals with added sugar (26.3%), confectionery (23.7%) and non-carbonated soft drinks (18.1%). It is very concerning that, despite recent specific codes of practice outlined by the Independent Television Commission for Children's Advertising, many food and drink products promoted during children's programming are potentially damaging to dental health.

## What are children watching?

The statistics are alarming: British children are watching, on average, three hours of television each day, and almost two-thirds of children have a television set in their bedroom. Over the course of one year, it has been estimated that American children are exposed to 20,000 television advertisements and figures for Australian and British children are of a similar magnitude.<sup>1</sup> Furthermore, British children are

subject to the highest levels of television advertising within Europe. In stark contrast, advertising during dedicated children's broadcasting has been banned in Sweden and Norway.

Children are clearly being targeted as a receptive market by the manufacturing industry. In 1999, 12 billion US dollars were invested in marketing strategies directly aimed at children.<sup>2</sup> Undoubtedly, television provides one of the most powerful media through which products can be advertised. A number of studies have shown that television advertising can directly influence children's consumer choices, behaviour and attitudes.<sup>3,4</sup>

A comparative analysis of television advertisements broadcast to children in 13 developed countries found that adverts promoting food, toys and entertainment were the most common.<sup>1</sup> However, food advertising accounted for the largest percentage of these advertisements in

virtually all countries. Furthermore, advertisements for confectionery represented 20% of all food advertising, with the highest proportion of confectionery adverts recorded in Greece and the UK. A more recent study of televised food advertising to New Zealand children actually found 30% of all food advertisements related to chocolate and confectionery.<sup>5</sup> Detailed nutritional analysis of televised food advertisements has identified that up to 90% of food products have a high fat, sugar or salt content.<sup>1,6,7</sup> It would appear that the vast majority of food and drink products targeted at children are promoting the antithesis of a healthy diet and are in direct conflict with national dietary guidelines.

Recently broadsheet newspapers have highlighted the flow of dietary propaganda aimed at children.<sup>8-10</sup> In the main, these concerns have been fuelled by evidence of escalating obesity levels and associated diseases in British children. It is not sur-

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prising, therefore, that consumer associations and health professionals are calling for greater regulation of food advertising to children.<sup>11</sup> In view of this growing controversy, the present study sought to carry out a content analysis of television advertisements broadcast during children's television programming. The specific objectives were to determine the overall frequency of food and drink advertisements, and to identify what proportion of these promoted products could be detrimental to dental health.

### Analysis of children's television advertisements

The raw material comprised 41 hours of children's television programmes and associated advertising, shown on the main British commercial and terrestrial channel, ITV1, during July and August, 2003. All programmes and adverts transmitted between 3.15pm and 5.15pm Monday to Friday, and between 9.20am and 12.30pm on Saturdays were recorded on to video cassette for subsequent analysis. Each advertisement was then viewed carefully, timed to the nearest second, and simply subdivided as a food/drink advert or a non food/drink advert. Adverts for food and/or drink products were further categorised into one of the following four subgroups, according to the sugar/acid content of the product shown:

**Group 1:** adverts promoting products with a high sugar content, such as confectionery, sugared cereals, cakes and biscuits

**Group 2:** adverts promoting products with a high acid content such as low-calorie or sugar free soft drinks

**Group 3:** adverts promoting products with a high sugar and high acid content such as fruit-flavoured yoghurts, carbonated or fruit-flavoured drinks

**Group 4:** adverts promoting products with low/no sugar and acid content such as fruit, vegetables, cereals (with no added sugar), meat and dairy products (with no added sugar).

One investigator (VP) categorised all the adverts according to the above criteria. In order to determine intra-operator agreement, 10% of the total number of adverts were re-analysed one week later and were re-categorised into the four subgroups. The level of agreement between the initial and the repeat assessment was determined using Kappa's coefficient of agreement, where 0.0 indicates no agreement and 1.0 indicates total agreement. Repeatability for the categorisation of adverts according to their sugar and/or acid content was found to be excellent, with a kappa coefficient of 1.0.

A total of 984 advertisements were transmitted during the two-month period, which accounted for 15.8% (six hours and

**Table 1** Frequency of food and drink advertisements according to sugar and/or acid content of product

Product	Number of adverts	Mean duration of advert (secs)	Percentage of food /drink adverts	Percentage of all adverts
<b>High sugar group</b>	<b>193</b>	<b>26</b>	<b>56.4</b>	<b>19.7</b>
Breakfast cereal with added sugar	90	29	26.3	9.3
Confectionery (sweets, biscuits, cakes)	81	24	23.7	8.2
Flavoured milk drink	14	21	4.1	1.4
Breakfast bar	8	22	2.3	0.8
<b>High acid group</b>	<b>1</b>	<b>26</b>	<b>0.3</b>	<b>0.1</b>
Sugar-free soft drink	1	26	0.3	0.01
<b>High sugar and high acid group</b>	<b>132</b>	<b>27</b>	<b>38.6</b>	<b>13.4</b>
Non-carbonated soft drink	62	26	18.1	6.3
Fast food advert incorporating soft drink	57	26	16.7	5.8
Carbonated soft drink	13	31	3.8	1.3
<b>Low sugar and acid group</b>	<b>16</b>	<b>25</b>	<b>4.7</b>	<b>1.6</b>
Dairy product	10	26	2.9	1.0
Breakfast cereal with no added sugar	2	24	0.6	0.2
Tea/coffee	2	30	0.6	0.2
Convenience food	2	22	0.6	0.2
<b>Total</b>	<b>342</b>	<b>26</b>	<b>100</b>	<b>34.8</b>

48 minutes) of the total programming time. On average, 24 advertisements were shown per hour of children's television broadcasting which equated to 9.48 minutes each hour.

The majority of adverts shown (62.5%, 642) related to non food/drink products. Most of these promoted toys, which accounted for 35.9% (353) of all adverts shown. Interestingly, throughout the 41 hours of recording, there was only one advertisement for an oral hygiene product. Food and/or drink advertisements accounted for just over one third of the total adverts seen (34.8%, 342). The mean broadcast time for each advert was 24 seconds (SD 9.47, range 7-82), and there was no significant difference in the duration of each advert according to the product category ( $p > 0.05$ , ANOVA).

Of the 342 food and/or drink advertisements shown, 95.3% (326) were for products with a high sugar and/or acid content. Significantly fewer adverts (4.7%, 16) were for low sugar/acid products ( $p < 0.001$ ,  $\chi^2 = 280.99$ , chi-squared test). Table 1 gives a more specific breakdown of the food/drink adverts shown according to their sugar and/or acid content. It can be seen that products with a high sugar content were the most frequently broadcast (56.4% of food/drink adverts). Within this subgroup, the most common adverts were for breakfast cereals with added sugar (26.3%) and confectionery products (23.7%). The next largest subgroup of adverts was for

products high in both acid and sugar (38.6% of food/drink adverts) with advertisements for soft drinks (non carbonated types) featuring prominently (18.1%).

Only 4.7% of advertisements promoted food/drink products that were deemed to have no/low sugar and acid content. Within this subgroup, adverts for dairy products (mainly cheeses) were the most common, accounting for 2.9% of all food advertisements. Breakfast cereals with no added sugar were also advertised (0.6%), as well as hot drinks such as tea and coffee (0.6%) and convenience foods (0.6%). No items of fresh fruit or vegetables, milk or water were advertised during the period under investigation.

### Is there cause for concern?

The finding that food and drink advertising represented a large proportion of adverts shown during children's television programming is consistent with findings of previous British studies.<sup>1,12,13</sup> However, the present study identified a higher transmission rate of adverts (24 per hour) than has been reported previously.<sup>12</sup> Furthermore, advertisements accounted for 9.48 minutes of each broadcast hour, which would appear to contravene current UK advertising regulations. These state that advertising on terrestrial channels should be limited to a maximum daily average of 7.0-7.5 minutes per hour.<sup>14</sup>

The vast majority (95.3%) of food and drink adverts shown during the study

period promoted products that could be detrimental to oral health as they contained high levels of sugar and/or acid. Equally concerning was the total absence of advertisements for non-cariogenic/non-erosive items such as fruit, vegetables, milk or plain water. This, however, is a feature common to children's television advertising in a number of different countries.<sup>1,5,15</sup> Recently, Chestnutt and Ashraf<sup>13</sup> sought to compare the proportion of adverts promoting foodstuff potentially detrimental to oral health during children's and primetime television. They found that, during children's television, 73.4% of advertising time was devoted to foods potentially harmful to teeth, as compared to only 18.6% of advertising time during primetime television. They concluded that children were being bombarded with commercials for sugar rich products.

These findings would appear to directly contravene the Code of Advertising Standards and Practice published by the Independent Television Commission (ITC) in 2002.<sup>14</sup> These state that 'advertisements must not encourage or condone damaging oral health care practices. For instance, advertisements must not encourage frequent consumption throughout the day, particularly of potentially cariogenic products such as those containing sugar.' The ITC ceased to exist in 2003, and its duties have since been assumed by Ofcom (the Office of Communications). The ITC's policy document on advertising has now been adopted by Ofcom. Interestingly, this communications sector regulator is currently undertaking research into the impact of food promotion on children, the findings of which may influence future advertising standards.

It would be difficult to prove that television advertising has a direct effect on oral health, given the multifactorial nature of dental caries and erosion. However, advertising may strongly influence children's food preferences. A number of studies have shown that the time spent viewing television directly correlates with the purchase and consumption of food advertised on television.<sup>3,16,17</sup> Positive correlations have also been found between children's

television viewing, bad eating habits and incorrect knowledge about nutritional principles.<sup>18,19</sup> Interestingly, the prevalence of obesity in American children has been found to increase by 2% for each additional hour of television watched.<sup>20</sup>

The extent and nature of advertising aimed at children has also become of great concern to parents, many of whom report that children 'pester' them to buy products advertised on television.<sup>1,19,21</sup> Indeed McLellan<sup>2</sup> states that marketing philosophies now aim to 'teach kids to influence their parents' purchases'. 'Pester-power' has become the advertiser's dream and the parent's nightmare! A recent UK poll found that 57% of parents wanted food advertising banned during children's television.<sup>10</sup>

It is evident that there is increasing public and professional concern regarding the potential effects of food advertising on the present and future health of British children. The prominent campaign group, Sustain (the alliance for better food and farming) recommend that adverts for unhealthy foods are prohibited during periods when large numbers of young children are likely to be viewing. However, a total ban on advertising to children (which is the case in Sweden and Norway) would be difficult to implement in this country as advertising creates substantial revenue for broadcasting companies. A more reasonable approach would be to ensure that adverts for potentially unhealthy healthy food and drink products are limited, and ideally should carry a health warning! Advertising healthy alternatives should also be encouraged.

Television advertising is, however, only one way in which manufacturers are able to influence children's behaviour in terms of dietary habits and preferences. Children are now being targeted using 'viral marketing' and 'underground communication'. It was recently reported that Kellogg's Real Fruit Winder Campaign reached 60% of children with clever PR and web activity before even commencing television advertising.<sup>8</sup> It is clear that powerful marketing strategies are being developed to control the eating habits of children on a global scale.

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# A commentary – Choice and the public good

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The authors of this study have investigated the frequency of food and drink advertisements during children's programming and established the proportion of these that could be detrimental to oral health.

The fact that there were 9.48 minutes of advertising in each broadcast hour indicated that during children's scheduling, ITV1 'the main British commercial and terrestrial channel' could have been in breach of broadcast regulator Independent Television Commission's (ITC) Code of Advertising Standards and Practice. We learn that the ITC, replaced by Ofcom (Office of Communication) in 2003, has in the view of others acted to protect advertisers rather than children.<sup>1</sup>

At the heart of the many complex issues underlying this work are two major things worth thinking about. These are the conflict between choice and the public good and the view of children as vulnerable and therefore childhood as a time in life that should be protected.

On the first issue, the conflict between choice and the public good, the paper is clear in its desire to see some control

on the degree of harmful advertising during children's television. The authors are suitably cautious about the relationship between advertising and its influence on children. They do however cite some evidence for concern about the volume of advertising being targeted at children. This view is clearly in line with others who feel strongly that if our food policies have to be evidence based then the time for them to be changed is long overdue.<sup>1</sup> The stakes are high because if the current voluntary code for advertising proves insufficient then a total ban on advertising to children is on the cards.<sup>2</sup>

The second debate that the paper highlights is the view that children are vulnerable and that childhood should be a sanctuary from the insidiousness of advertising. This perspective is very common. Although some researchers are now increasingly asking just how passive children are in relation to advertising. The view of the passive and vulnerable child is however difficult to sustain since, for example, children are described in this study as very active in 'pestering' parents

'to buy products advertised on television'. Clearly children are more active than they appear at first and we need to know more about this area. The idea of the passive child may well find itself challenged if further work in this field was to be undertaken.

The authors need to be commended for tackling a very difficult and often controversial subject in such a direct manner. They have found evidence that the voluntary code for advertising may already be under pressure. Furthermore the paper highlights that much more research is needed to investigate the relationship between children, parents and advertisers of foods and drinks that can damage oral health.

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