



Study on the exposure of children to linear, non-linear and online marketing of foods high in fat, salt or sugar ('HFSS')

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Summary

- Based on passive metering, only 1.7% of advertisements that children were served online were for food products. However, of these 64% were for 'HFSS' products.
- Similarly, avatar studies showed that 66% of food advertisements shown to the child avatar (under 12 years old) were for 'HFSS' products.
- Both passive monitoring and avatar studies of online activity showed that YouTube was the primary source of exposure to food advertisements. This was followed by other social media use.
- In 2017, on TV 'HFSS' ads accounted for 66% of all food and beverage advertisements. Of these, 'sweet snacks' was the most significant category (25%).
 - Children aged 4-12 saw on average 1,719 'HFSS' ads in 2017; or 4.71 ads per day
 - Children aged 13-17 saw on average 1,677 'HFSS' ads in 2017; or 4.59 ads per day
 - Adults saw on average 3,347 'HFSS' ads in 2017; or 9.17 ads per day
- Across all linear and non-linear advertisements, 48% contained elements that were considered appealing to children. Only 12% contained elements that were primarily appealing to children under 12.

Initiated by the European Commission's Directorate-General for Health and Food Safety (DG SANTE), the study aimed to collect evidence on the exposure of children to the marketing of foods high in fat, salt or sugar ('HFSS') on linear (scheduled broadcast) and non-linear media. The study did not review the impact of marketing on e.g. printed media, cinemas and apps that can be downloaded to entertain offline.

Age of a child

Children are defined as under 18, though in some parts the report differentiates between younger children (4-12 years old) and older children (adolescents, 13-17 years old).

Nutrition Criteria

'HFSS' foods and beverages were classified primarily based on the WHO Europe [Nutrient Profile Model](#) (NPM) which was further adapted in a way that defines more entire categories as 'HFSS'.

The summary below highlights the key findings on exposure to 'HFSS' food ads online and on TV, as well as the appeal of these ads across linear and non-linear media.



Key Findings – Online (non-linear) exposure

A mixed method approach was used when trying to determine the exposure to ‘HFSS’ food ads online. The findings are based on self-reported data (questionnaire), actual exposure (passive metering) and assumed exposure (via standard digital monitoring and avatars).

Self-reported data – perspective of the viewers

Methodology

In order to look at the exposure to ‘HFSS’ ads from the perspective of the viewer the study asked participants to self-report their exposure to different ads they had seen online:

- Four age groups were defined: 4-8, 9-12, 13-17, 18+
- Each group consisted of 250 people per age group per Member State.
- Participants were asked about online activity; awareness of ‘HFSS’ ads; memory of ‘HFSS’ ads; background information: gender, age, education, device use.

Results

- **Food advertisements are among the most seen advertisements (49%)** and recalled by 41% of the 4-8 year olds, 47% of the 9-12 year olds, 54% of the 13-17 year olds and 52% of the adults
- The most recalled ‘HFSS’ advertisements among children are:
 - 9-12 year olds: ‘sweet snacks’ (22%) and ‘soft drinks and flavoured milk drinks’ (19%)
 - 13-17 year olds: ‘fast-food or takeaway ready meals’ (23%)
- Exposure to healthier food ads is lower than for ‘HFSS’ ads: 53-80% of children recalled seeing at least one ad for healthier products during the last month, in comparison to 82-91% for one ‘HFSS’ ad
- **For all age groups, self-reported exposure to ‘HFSS’ ads increase with frequency of online activity**
 - The types of activities strongly associated with an increase in children’s self-reported exposure to ‘HFSS’ ads included visiting and/or posting on social media; reading and watching the news on the internet; and streaming music, videos and films.
- **Adverts were most often seen on YouTube, Facebook and TV**
 - YouTube was the most recalled platform by 9-12 age group
 - Facebook was the most recalled by 13-17 and 18+ age groups

Actual exposure (passive metering):

Methodology

RealityMeter monitoring software was installed on subjects’ phones and tablets. Every time a subject picked up their device, they would be asked their age and the software would then reliably capture web traffic to and from the individual device.

- Those participating in the self-reported data could also participate in this part of the study.
- Data was collected over a period of four weeks. The main findings of this analysis involved 490 users (228 were children) in Hungary, Italy and the Netherlands.

Results

- Of a total 29,716 ads, 36% (n=10,710) were seen by children and 64% (n=19,006) by adults. The average exposure per hour amounts to two ads seen by children and adults.



- **Children were exposed to 1.7% (n=184) of food and drink product advertisements, of which 64% (n=117) were 'HFSS' products**, 33% of the products or brands promoted could not be classified, and 4% were for healthier food options
 - 81% (n=95) of the 'HFSS' ads seen by children were seen on YouTube
- **Adults were exposed to 1.3% (n=255) of food and drink product advertisements, of which 74% (n=188) were 'HFSS' products**, 23% of the products or brands promoted could not be classified, and 3% were for healthier food options
 - 47% (n=86) of the 'HFSS' ads were seen on YouTube
- The category most seen by children (35%) and adults (28%) was 'sweet snacks'

Assumed exposure (standard digital monitoring):

Methodology

A standard avatar, developed by Advertising Intelligence Ltd (a Nielsen company), was made to visit specific web- and mobile-based websites. The standard avatar has a mixed profile that is not specific to age or gender. The monitored websites were selected on the basis of the following criteria:

- Sites (that contain advertising) with the highest visitor numbers.
- YouTube channels with the highest feature video 'plays'. This allowed Advertising Intelligence Ltd to include Digital Video Formats in the study.
- This method examined the environment of online advertising and examines what adults and children could be exposed to in terms of food and drinks advertisements.

Results

- **3.1% (n=217) of all advertisements (n=7000) served to the avatar were for the 'food' category, of which 95% were 'HFSS' products (2.9% of total ads)**
- The most common 'HFSS' products advertised were 'sweet snacks' (38%), followed by 'cakes, sweet biscuits, pastries and sweet bakery wares' (24%) and 'quick service restaurant meals' (12%)
- Brands with the highest number of 'HFSS' advertisement served to the standard avatar cover the top two most served 'HFSS' categories
 - While the product varied in each member state tested, the products of these brands fall mostly into 'sweet snacks' and 'cakes, sweet biscuits and pastries and sweet bakery wares'

Assumed exposure (avatar):

Methodology

This method, also developed by Advertising Intelligence Ltd, involved creating three different avatars that would have had different 'cookies' collected on them and so would have had different ads shown to them when visiting the same websites. The three specific avatars created were:

- Child avatar – a persona aged below 12 years old simulated from browsing histories;
- Adult avatar – a persona aged above 18 years old simulated from browsing histories;
- Neutral avatar – a persona without any browsing history;
- Retargeting avatar – a persona that does not mimic a specific age profile; the avatar visits some official food and drink brand's websites considered as 'HFSS' foods to explore if/to what extent visits to these websites trigger advertisements of this brand on other websites, serving targeted ads.



The avatars visited 60 YouTube channels and 221 websites during a 30-day period. A total of 4,787 of these adverts were served to the four avatars in Hungary, Italy, and the Netherlands.

The monitored websites were selected on the basis of the following criteria:

- Sites (that contain advertising) with the highest visitor numbers;
- YouTube channels with the highest feature video 'plays'.
- Sites (that contain advertising) with appeal to children;
- Own-brand channels within the food and drink sector with products that may be considered 'HFSS'.

Results

- 67% of all food ads served to the four avatars were for 'HFSS' products, compared to 4% healthier food options, 29% were unclassified
- **Exposure to 'HFSS' advertisement** was at:
 - **66% (n=732 of all 1115 food and drink ads) for the child avatar, accounting for approximately 15 times more 'HFSS' advertisements than healthier food and drink advertisements**
 - 70% (n=795 of all 1140 food and drink ads) for the adult avatar, accounting for approximately 18 times more 'HFSS' advertisements than healthier food and drink advertisements
 - 67% (n=724 of all 1073 food and drink ads) for the neutral avatar, accounting for approximately 17 times more 'HFSS' advertisements than healthier food and drink advertisements
 - 66% (n=727 of all 1105 food and drink ads) for the retarget avatar, accounting for approximately 13 times more 'HFSS' advertisements than healthier food and drink advertisements
- The most common 'HFSS' products advertised to all avatars were 'sweet snacks' (24.9%), followed by 'soft drinks' (11.9%), 'quick service restaurant meals' (10.6%) and 'savory snacks' (8.4%)
- **'HFSS' advertisements were higher on YouTube than on websites**
 - YouTube pages and websites with general audiences were exposed to 51% and 15% of 'HFSS' ads respectively
 - YouTube pages and websites with children's audiences were exposed to 34% and 1% of 'HFSS' ads respectively
- Some brands appear to target children with 'HFSS' advertisements while others appear to avoid serving 'HFSS' advertisements on sites with child audiences

Key Findings – TV (linear) exposure

Media viewing data

Methodology

In order to map the exposure to 'HFSS' food ads on linear audiovisual media sources, viewing data and advertising data was collected, with the aim of calculating and commenting on:

- The daily average absolute impacts (by channels, day parts and age categories) of 'HFSS' foods audiovisual commercial communications seen by children (aged 4-12 and 13-17) compared to that of those above 18;



- The daily average relative impacts (by channels, day parts and age categories) of ‘HFSS’ foods audiovisual commercial communications seen by children compared to that of those above 18. This also weighs the average impacts with the total TV viewing time of children and of adults over 18 years, respectively;
- Data was collected for the full year 2017 for nine Member States (i.e. Belgium, Czechia, Spain, Hungary, Italy, Lithuania, the Netherlands, Romania, Sweden).

Results

- **Of all advertisements for food and non-alcoholic beverages, 66% were ‘HFSS’ products, 26% were unclassifiable and 8% were for healthier food options**
- **In 2017, an adult was exposed to approximately twice as many spots for ‘HFSS’ foods, drinks and quick service restaurants than a child (aged 4-17)**
 - Children aged 4-12 saw on average 1,719 ‘HFSS’ ads in 2017, or 4.71 ads per day
 - Children aged 13-17 saw on average 1,677 ‘HFSS’ ads in 2017, or 4.59 ads per day
 - Adults saw on average 3,347 ads in 2017, or 9.17 ads per day
- ‘Sweet snacks’ (25%) was the most impactful ‘HFSS’ food category for all ages
- Highest average impact of ‘HFSS’ food advertisements per time slot
 - Children aged 4-12 had an impact of 124% between 18.00-21.00; children saw on average 1.24 ‘HFSS’ ads during this timeslot
 - Children aged 13-17 had an impact of 130% between 21.00-00.00; adolescents saw on average 1.30 ‘HFSS’ ads during this timeslot
 - Adults had an impact of 248% between 21.00-00.00; adults saw on average 2.48 ‘HFSS’ ads during this timeslot
- **‘HFSS’ absolute advertising impacts were highest for all age groups between 21.00-22.00**
 - Children aged 4-12 saw on average 0.57 ‘HFSS’ ads
 - Children aged 13-17 saw on average 0.54 ‘HFSS’ ads
 - Adults saw on average 1 ‘HFSS’ ad
- Most ‘HFSS’ advertising impacts were made on commercial channels
 - Children aged 4-12 saw 76% ‘HFSS’ ads on general channels and 24% on channels targeted to children
 - Children aged 13-17 saw 94% ‘HFSS’ ads on general channels and 6% on channels targeted to children
 - Adults saw 98% ‘HFSS’ ads on general channels and 2% on channels targeted to children
- **Daily average relative ‘HFSS’ impacts per hour** (based on 70% of the ‘HFSS’ impacts on channels for which viewing data were available):
 - **Children aged 4-12 saw 2.24 ads per hour**
 - **Children aged 13-17 saw 2.95 ads per hour**
 - **Adults saw 2.56 ads per hour**
 - When correcting for viewing rates, the daily average relative ‘HFSS’ impact is estimated at 2.71 per hour for a 4-12 year old, 3.75 per hour for a 13- 17 year old and 3.16 per hour for an adult
 - The differences in the absolute level of exposure between children and adults, may be explained by differences in viewing patterns, both in terms of the time spent watching TV, as well as the channels that were watched



Key findings – Appeal across linear and non-linear exposure

Methodology

- 20 advertisements were collected for each of the for nine Member States (i.e. Belgium, Czechia, Spain, Hungary, Italy, Lithuania, the Netherlands, Romania, Sweden), 10 from linear audiovisual media services and 10 from non-linear audiovisual media services and online services (except for Lithuania where only 4 online advertisements were available).
- All advertisements were selected in May 2019 from the period covering the preceding 12 months.
- A total 174 advertisements have been analysed.

Results

- Of all adverts analysed (n=174), **48% of the advertisements contained elements appealing primarily to children and 52% were considered not appealing to children**
 - 3% employed three or more elements appealing primarily to children; 45% contained one or two elements primarily appealing to children
 - 12% of the ads were only appealing to children under 12; these ads featured child protagonists or product-based spokes-characters engaging in daring activities
 - 10% of the ads were only appealing to children aged 13-17; these ads portrayed settings and activities typical for teenagers, like hanging out with friends and other after-school activities
 - 10% of the ads were considered appealing to children and adults; these ads depicted the consumption of the advertised product during quality time with family and often included other elements specifically appealing to younger children and parents
- TV adverts were slightly more often targeted at younger children. Other than that, no major differences were observed between TV and online advertisements.
- The intensity of appeal to children was evaluated by assessing the number of elements primarily appealing to children in each advertisement. These included: making fun of adults; fantasy; child characters; cartoon characters; licensed characters; product-based spokes-characters; product properties attractive for children; premium offers, toys, collectibles or giveaways; advergames; cross-promotion
- The most common child appealing elements used in the analysed ads were audio effects (67%), child characters (26%), connections to mobile applications, websites or social networking sites (25%), depictions of having fun (24%) and visual effects (24%)