



In your phone

– about the online food environment of children and their exposure to digital marketing of food and beverages



» Recently I saw an influencer, I can't remember who it was, testing dates with candy flavour, and it looked delicious, and I've already bought two bags this past week. «

Child, Stockholm

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All images in this report that show food advertisements and company logos have been contributed by participants within the framework of the Karolinska Institute project. The images and mentioning of companies are used to illustrate a systemic problem in the food environment of children and young people and are not intended to single out individual companies or products.

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Foreword (Swedish)

När vi för tre år sedan släppte vår gemensamma rapport *In your face*, om barn och ungas fysiska matmiljö och exponering för matreklam, väckte den stor uppmärksamhet. Genom att lyfta barnens röster och upplevelser synliggjorde vi ett systematiskt problem: att barn översköljs av reklam för ohälsosam mat – något som försvårar, både för barn, unga och deras familjer att göra informerade och hälsosamma val.

Ohälsosamma matvanor är inte bara ett växande folkhälsoproblem – det är ett barnrättsproblem. God hälsa är en förutsättning för att barn ska kunna tillgodogöra sig många andra av sina rättigheter och nå sin fulla potential.

Den här rapporten, *In your phone*, tar vid där den förra slutade – men fokus flyttas till barnens digitala vardag. Rapporten *In your phone* visar vad barn möter i sociala medier: ett ständigt flöde av reklam för mat och det är de ohälsosamma alternativen som dominerar. Dessutom är reklamen ofta riktade och anpassade till unga som målgrupp. Samtidigt är digitala kanaler en plats där barn får utöva många av sina rättigheter – såsom att koppla av, lära sig, känna gemenskap och vara delaktig i samhället. Det gör det än viktigare att säkerställa att digitala miljöer främjar, snarare än underminerar, barns hälsa och välmående.

Det är vi vuxna som bär ansvaret för barns mat- och levnadsmiljö. Vi behöver se till att både fysiska och digitala miljöer stödjer barns fysiska och psykiska hälsa. För det krävs uppdaterad och mer effektiv lagstiftning, det krävs att barnkonventionen, som har varit svensk lag sedan fem år tillbaka, används i rättstillämpningen och att både livsmedelsbranschen och digitala plattformar tar ett större ansvar.

Tillsammans kan vi skapa en värld där barn ges bättre förutsättningar att växa upp med hälsosamma vanor – och där deras rätt till god hälsa blir verklighet för alla barn.



Pernilla Baralt
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Executive summary (Swedish)

INLEDNING

En ny undersökning från UNICEF Sverige och Hjärt-Lungfonden, som genomförts av Karolinska Institutet, visar att 70 procent av den matreklam som barn och unga möts av i sociala medier marknadsför ohälsosam mat och dryck. Enligt undersökningen kan barn och unga mötas av upp till 17 digitala annonser i timmen för ohälsosam mat och dryck.

Det är alarmerande med tanke på att ohälsosamma matvanor är en ledande riskfaktor för ohälsa i Sverige och att marknadsföring spelar en stor roll för hur våra matvanor formas.

Studien visar även att företag ofta använder olika marknadsföringstekniker för att specifikt tilltala och utnyttja tonåringars sårbarheter. Ohälsosamma produkter kopplades till nya trender och lanserades i begränsade upplagor. Många av annonserna spelade på känslor som vänskap, grupptillhörighet och nöje snarare än produktinformation.

VAD VISAR UNDERSÖKNINGEN?

Enligt studien var mat och dryck den kategori som marknadsfördes överlägset mest. Mer än en tredjedel av alla annonser barnen mötte på sociala medier handlade om livsmedel och drycker. Av dessa var 70 procent reklam för ohälsosamma produkter. Reklamen utgjordes till stor del av annonser för snabbmat som pizza, hamburgare, kebab eller friterad mat.

Barnen valde själva vilka plattformar de använde under studien, och deras val dominerades av TikTok och Instagram. Ca 64 procent av annonserna för mat och dryck kom därför från TikTok och 33 procent från Instagram.

På TikTok exponerades barnen för ohälsosamma mat- eller dryckesannonser nästan var tredje minut (17 per timme). På Instagram möttes de av nio sådana annonser per timme.

Diskussioner i fokusgrupper visade att ungdomarna underskattade sin exponering för livsmedelsreklam. Många uppfattar inte sponsrade innehåll från influencers som marknadsföring.

Vissa av ungdomarna uppgav att rabatter och erbjudanden uppmuntrade impulsköp, medan visuellt tilltalande annonser ökade suget efter ohälsosam mat.

Även om vissa ungdomar ansåg att reklam var informativ och underhållande, uttryckte andra frustration över vilseledande matpresentationer, där snabbmat ofta såg fräschare ut i annonser än i verkligheten. Flera deltagare var medvetna om hur digital marknadsföring påverkar dem men kände att det var hopplöst att försöka få bort reklamen.



Tonåringar särskilt mottagliga för marknadsföring

Marknadsföring spelar en stor roll för hur våra matvanor formas. Studier visar att marknadsföring av ohälsosam mat har en negativ inverkan på barn och ungas preferenser och konsumtion, och i slutändan deras hälsa och mående.

Barn och unga, framför allt barn i tonåren, är särskilt mottagliga för marknadsföring. Extra mottagliga är de för marknadsföring som anspelar på eller har formen av underhållning, livsstil eller grupptillhörighet. Under tonåren utvecklas även hjärnans belöningssystem snabbt vilket ökar risken att agera på reklam för ohälsosam mat och dryck.

Digital marknadsföring är en viktig kanal för att nå barn och unga. Enligt Mediemyndighetens senaste rapport *Ungar och medier 2023* använder de flesta barn från 12 års ålder mobiltelefonen varje dag, och 85 procent av tonåringarna använder sociala medier dagligen.

Marknadsföringen utnyttjar ungas sårbarhet

Analysen visar att av alla annonser för mat eller dryck ingick 41 procent i någon form av specifik utvald kampanj. Den vanligaste formen av kampanj var lansering av en ny produkt (17 procent), följt av erbjudanden och rabatter (15 procent), tävlingar (5 procent) och begränsade upplagor (4 procent).

En klar majoritet (78 procent) av dessa kampanjer marknadsförde ohälsosam mat och dryck. Kampanjer som marknadsförde produkter i begränsad upplaga (limited edition) hade den högsta andelen ohälsosamma livsmedel och drycker (96 procent).

96%
av limited edition-
kampanjer var
för ohälsosam mat

Analysen av produkter som barn och unga fick mest reklam för visar även att marknadsföringen var riktad och anpassad just för att tilltala tonåringar och unga vuxna. Nya produkter kopplades till aktuella trender och marknadsföring av produkter i begränsad upplaga användes för att skapa en känsla av exklusivitet och brådska, vilket tilltalar unga konsumenter. Annonserna förde sällan fram saklig produktinformation utan fokuserade i stället på känslor som vänskap, nöje och njutning. Dessa strategier spelar på människors, och särskilt ungdomars, längtan efter social acceptans och tillhörighet, exklusivitet och självuppfyllelse.

De flesta annonser med personer i bild visade unga människor strax över eller under 20 år. De skildrade ofta livsstilsaktiviteter som att sola, spela tv-spel, resa eller gå på festivaler. Detta för att koppla känslor som dessa aktiviteter ger till produkten.


Olika sorters emojis (särskilt hjärt-emojis) var vanligt förekommande för att signalera kärlek eller andra positiva känslor till produkten, vilket förstärker det ungdomliga temat.

För att sammanfatta så exponeras barn och unga för stora mängder matreklam på sociala medier, reklam som många gånger är utformade och riktade specifikt mot dem som målgrupp och som utnyttjar deras sårbarhet under tonåren. Reklam som dessutom marknadsför produkter som är skadliga för deras hälsa.

Allt fler barn i Sverige lever med övervikt

Ohälsosamma matvanor är en av de största orsakerna till ohälsa och för tidig död i Sverige. Det ökar risken för övervikt, obesitas, hjärt-kärlsjukdomar, cancer och typ 2-diabetes.

Trots att detta är välbelagt ökar konsumtionen av ohälsosam mat och dryck bland unga, samtidigt som de äter allt mindre hälsosam mat såsom frukt och grönt. Statistik från Folkhälsomyndigheten visar att andelen barn i åldern 11–15 år med övervikt har mer än fördubblats under de senaste 30 åren. Sedan slutet av 1980-talet har obesitas i samma ålderskategori ökat fyra gånger.



Andelen barn i åldern 11–15 år med övervikt har mer än fördubblats under de senaste 30 åren

Barn har rätt att skyddas från manipulativ marknadsföring

Enligt barnkonventionen, som är svensk lag sedan 1 januari 2020, har barn rätt till hälsa och en hälsosam miljö, de har rätt till information, men också till skydd mot skadlig information och marknadsföring. Barn och unga har särskilda behov och sårbarheter kopplat till sin ålder och utveckling. De har därför också rätt att skyddas mot utnyttjande, inklusive manipulativ marknadsföring som utnyttjar barns särskilda utsatthet.

Barn har också rätt till yttrandefrihet, information och delaktighet. Det innebär att generella förbud mot användande av sociala medier inte är en hållbar lösning eftersom det på ett godtyckligt sätt skulle begränsa flera av deras rättigheter. I stället bör digitala miljöer utformas och regleras för att skydda barn från otillbörlig påverkan och från effekterna av reklam för ohälsosam mat och dryck.

Regeringar har den yttersta skyldigheten att uppfylla barnets rättigheter, bland dem att skydda barn från skadliga aktiviteter från den privata sektorn.

VÅRA REKOMMENDATIONER

Trots att det finns svenska lagar om marknadsföring till barn saknas specifika regler för marknadsföring av ohälsosam mat och dryck. Den nuvarande lagstiftningen räcker inte för att adressera de snabbt föränderliga digitala marknadsföringsmetoderna. Lagstiftningen behöver uppdateras i linje med barnkonventionen för att skydda barn och unga från att påverkas negativt av reklam för ohälsosam mat och dryck. Folkhälso-myndigheten och Livsmedelsverket i Sverige, liksom Världshälsoorganisationen (WHO) rekommenderar striktare regleringar för marknadsföring av ohälsosamma livsmedel riktad mot barn.

Befintlig lagstiftning måste också användas mer för att skydda barns hälsa och utveckling. Trots att barnkonventionen har varit svensk lag i över fem år har i princip inga domslut som rör marknadsföring hänvisat till eller beaktat barnkonventionen.

EU:s Digital Services Act (DSA) innebär visserligen en möjlighet att begränsa riktad reklam till barn genom profilering, men ytterligare nationella åtgärder behövs.

UNICEF Sverige och Hjärt-Lungfonden uppmanar beslutsfattare, myndigheter, företag och forskare att vidta följande åtgärder:

- ⊙ Regeringen bör införa lagar som begränsar barns exponering för marknadsföring av ohälsosamma livsmedel, särskilt genom digitala kanaler. Särskild översyn bör göras av både marknadsföringstekniker och innehåll som riktar sig till eller attraherar barn och tonåringar.
- ⊙ Tillsynsmyndigheter och domstolar måste ta hänsyn till barnkonventionen i sina bedömningar och insatser gällande marknadsföring.
- ⊙ Företag och den privata sektorn måste ta ansvar genom att utvärdera produkters och marknadsföringens påverkan på barns och ungas matvanor och hälsa, anpassa sin marknadsföring så att den respekterar barns rättigheter, minska barns exponering för marknadsföring av ohälsosam mat, och prioritera hälsosammare alternativ.
- ⊙ Forskare och forskningsfinansiärer bör investera i studier om hur digital marknadsföring påverkar barn och utforska innovativa sätt att främja hälsosamma matvanor.
- ⊙ Alla relevanta aktörer bör involvera barn och unga i detta arbete.

Genom att prioritera barns hälsa och välbefinnande kan Sverige skapa en hälsosammare matmiljö och förebygga sjukdomar som påverkas av ohälsosamma matvanor i framtida generationer.

OM UNDERSÖKNINGEN

Syftet med undersökningen är att öka kunskapen om i vilken utsträckning barn och unga genom reklam exponeras för ohälsosam mat online, vilken sorts reklam de möts av och vilka marknadsföringstekniker som används för att nå barn och unga.

I undersökningen deltog 49 barn i åldern 13–16 år, från fem olika skolor, och den genomfördes i två olika delar.

DEL 1: Under första delen av undersökningen kartlades barns exponering för mat- och dryckesreklam på sociala medier genom att låta barnen skicka in skärmdumpar från sina sociala mediekonton på självvalda kanaler. Två olika typer av datainsamlingsstrategier användes:

- **Fas 1:** Insamling av data i klassrummet, i en kontrollerad miljö.
- **Fas 2:** Självrapporterad data från barnen under en veckas tid.

DEL 2: Under andra delen genomfördes intervjuer med fokusgrupper där barnens tankar och erfarenheter av reklam på sociala medier diskuterades.

Utöver detta genomförde UNICEF en produktanalys av den data som samlades in under första delen av studien för att utreda vilka produkter som marknadsfördes och vilka marknadsföringstekniker som användes.

PART 1: BACKGROUND

– CURRENT SITUATION OF CHILDREN

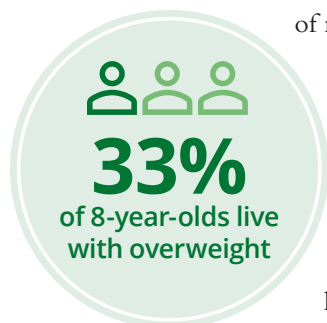
1.1. THE DIETARY HABITS OF CHILDREN AND ADOLESCENTS IN SWEDEN

Unhealthy dietary habits are among the greatest risks for ill health and premature death in Sweden. Unhealthy diets and excess energy intake contribute negatively to public health through conditions such as overweight, obesity, cardiovascular diseases, cancer, and Type 2 diabetes. According to the National Public Health Survey, the prevalence of overweight and obesity among adults (16–84 years) increased from 50.0% to 53.6% between 2015 and 2024, corresponding to a 3.6% rise. The same survey shows that 1 in 5, or 20%, live with obesity. (1)

The development of overweight and obesity among children and young people is heading in the wrong direction in Sweden. Statistics from the Public Health Agency of Sweden show that the share of 11–15-year-olds in Sweden who live with overweight has more than doubled in 30 years. Among 11–15-year-olds, obesity has increased by four times the late 1980s. (2) During the 2021/2022 school year, nearly one in four children of primary school age live with overweight or obesity, and in recent years, the proportion has increased by approximately one percent per year. (3)

In the European study COSI (WHO European Childhood Obesity Surveillance Initiative), in which Sweden participates, the latest results show that 33% of 8-year-olds have overweight,

of which 13% live with obesity. Among boys, the 33% represents an increase of nearly 3% since 2022. (4)



According to the Nordic Nutrition Recommendations (NNR) (5), healthy dietary habits are defined as a diet primarily consisting of a high intake of vegetables, fruits, berries, legumes, potatoes, whole grains, fish, and nuts, along with a moderate amount of low-fat dairy products. Additionally, healthy dietary habits include a limited intake of red meat and processed meat products, white meat, sugar-sweetened beverages, salt, alcoholic beverages, high-sugar foods, and refined grains.

The dietary habits of young people are deteriorating. In the latest report from the Public Health Agency of Sweden (6) it is noted that children and young people are increasing their consumption of foods that do not contribute to health while decreasing their consumption of foods that do.

The report shows that very few – only one in ten – meet the recommendation of consuming 500 grammes of fruit and vegetables per day. Only half eat vegetables daily. More than one third of adolescents' energy intake comes from energy-dense and/or nutrient-poor foods such as sweets, sugar-sweetened beverages, pastries, cakes, crisps, and other salty snacks.

Furthermore, the report from the Public Health Agency of Sweden shows that sugar-sweetened beverage consumption has increased among children older than 11 in recent years. Around two out of three children aged 11–15 eat sweets several times a week. Even children younger than 5 regularly consume sweets, with about one in three eating sweets several times a week.

What is unhealthy food?

Unhealthy food can be described as foods which are processed, packaged and high in unhealthy fats, sugar, salt, and energy – often referred to as ultra-processed foods. This can include items such as sugar-sweetened beverages, energy drinks, fast food like hamburgers, pizza, kebabs, sausages, fried chicken, sweets, baked goods, ice cream, and salty snacks. The WHO has published a so-called nutritional profile that identifies unhealthy food. (7)

It is more common for children with a Swedish background to consume sweets and soft drinks more than once a week than it is for children from a non-Swedish background.

1.2. THE ROLE OF FOOD ENVIRONMENT

The food environment is part of the food system where people interact with the system to select, purchase, and eat food. Factors such as the physical, social, and economic environment influence what people eat, and thereby the state of people's health resulting from the food they choose to consume. (8)

The World Health Organization (WHO) defines marketing as "any form of commercial communication or message designed to, or contributing to, increasing awareness, appeal, and/or consumption of particular products and services. It includes anything that serves to advertise or otherwise promote a product or service." (9)

Marketing focuses not only on the effects of commercial communication but also on its intent. The definition therefore encompasses various contexts in which companies benefit from promoting a product or service – such as collaborations with influencers on social platforms, sponsorship of sporting events, product placement, branding, placement of goods in stores, and product design.

Children and young people are exposed to food marketing through a wide range of channels, such as television, social media, digital games, and outdoor environments. Studies indicate that this marketing largely promotes unhealthy food. (10)

In 2022, the Swedish Heart Lung Foundation and UNICEF Sweden published a report, *In Your Face*, featuring a study conducted by the Karolinska Institute that examined the advertisements adolescents encounter in the physical food environment. The results show that the food environments children are exposed to are dominated by marketing of unhealthy food – nearly 80% of the advertisements and food-related messages children encountered were about sweets, snacks, sugar-sweetened beverage and fast food. Further findings from the study revealed that four out of five food promotions and offers in children's physical food environments were related to sweets, snacks, and fast food. (10)



4 out of 5
food promotions
and offers in children's
physical food environments
were related to
sweets, snacks, and
fast food.

A study conducted in Denmark showed similar figures regarding marketing on social media: 79% of the advertisements presented unhealthy food, and of the material promoted by influencers, 76% was related to unhealthy food. (11)

Children and young people are particularly sensitive to targeted marketing and are more affected than adults by the advertisements for unhealthy food. Studies show that marketing of unhealthy food and beverages negatively impacts the food choices of children and young people and, in the long term, their overall diet. This marketing, especially of unhealthy foods, also appears to increase the pressure children put on their parents to buy these products. (12)

The marketing of unhealthy food risks affecting children's health both today and in the future. As part of efforts to halt the rise in childhood obesity, the WHO recommends significantly reducing children's exposure to all such marketing. (13)

1.3. MARKETING ACTIVITIES AIMED AT CHILDREN AND YOUNG PEOPLE

Children and adolescents have significant value to commercial actors in the advertising market. Effective marketing of products and services to this group can foster positive connections and brand relationships from an early age that extend into adulthood. (14) Children tend to play a key role in influencing family buying decisions, which positions them as an “influence market.” Children and adolescents also purchase products directly, which makes them a “primary market”. Lastly, brand loyalty at a young age cultivates continued consumer engagement over time that can lead to continued sales into adulthood, establishing them as a “future market” (15) (16).

Research shows that children and adolescents are vulnerable to marketing, particularly commercial messages that are presented as entertainment or messages from peers. Various studies have shown that teenagers are particularly vulnerable to influence from the marketing of unhealthy food and beverages due to their still developing and hypersensitive reward responsibility to appetite cues. (17)

Marketing tactics that are aimed at this group are typically branded games, identity-based marketing campaigns, influencer partnerships, social proof, links to the environment/cause marketing, and user-generated campaigns. (18) (19) (20)

Furthermore, the collection of personal data from children online is increasingly used to inform behavioural advertising and specify audiences with higher precision. (21)

1.4. CHILDREN’S RIGHTS TO NUTRITION, HEALTH AND DEVELOPMENT

The Convention on the Rights of the Child, the CRC, is an international legal framework that recognises children’s unique sensitivities and need for special protection. It also establishes children as individual rights-holders with the right to be protected throughout their childhood to reach their full potential. CRC provides a child-rights based approach for public and private actors to ensure that the rights of every child are respected, protected and fulfilled. (35)

**Definition of a child: Article 1,
Convention on the Rights of the Child**
*A child means every human being below
the age of eighteen years.*

Governments that have signed and ratified the CRC have the ultimate duty to respect, protect and fulfil the rights of the child as set out in its articles. This includes taking all appropriate legislative and administrative measures to implement these rights (Article 4). It includes a duty to protect children from harmful activities by third parties and the private sector.

THE 4 CORE PRINCIPLES OF CRC

- Non-discrimination
- Best interests of the child
- Right to life, survival and development
- Right to participation



Some of the key marketing strategies used by food and beverage companies include:

THE USE OF SEGMENTATION. Food and beverage companies use segmentation to effectively target and engage different consumer groups, tailoring products and marketing messages to increase appeal and sales within each segment. Segmentation can be based on demographics, but also on attributes such as lifestyle, values and beliefs, buying behaviour and usage rate. (22)

NEW PRODUCT DEVELOPMENT AND DIVERSIFICATION. New products featuring different flavours or targeting specific audiences, such as the growing health-conscious segment, are continuously being developed. Brands are also expanding into new markets through the launch of new products, like ice cream and cake mixes, and forming partnerships with other companies to create variations of existing products, often available for a limited time. (23) (24)

PRODUCT PLACEMENT. The food and beverage industry frequently apply placement strategy; where featured products are strategically positioned throughout stores, often placed on bespoke displays, at the end of aisles, or at eye level, particularly near check-out counters where impulse purchases are likely. Additionally, products are frequently featured in films, TV shows, and online content to boost brand awareness and desirability. (25) (26)

PACKAGING. Packaging plays a crucial role in marketing strategy, with research showing that it significantly influences children's dietary habits and shapes the food choices of parents and teenagers. (25) Playful designs attract children to the products being marketed, (27) and packaging often highlights healthy ingredients. Additionally, packaging can be designed to offer smaller, single-serve portions that are perceived as convenient and guilt-free or are for 'on-the-go' consumption.

PRICING AND PROMOTIONAL OFFERS. The food and beverage industry frequently employs price promotions, such as bulk discounts (multi-buy offers) and short-term price reductions. Evidence suggests that these promotions lead to an increase in the volume of food and beverages purchased. (28)

EMOTIONAL APPEAL AND PERSUASIVE ADVERTISING. Many advertisements are designed to use emotional appeals, tapping into nostalgic memories or linking products to positive emotions. Marketing increases children's awareness, recognition, and recall of brands, influencing them from an age as early as preschool age. (29) (30) Collectible toys, cartoon characters, and mascots are frequently employed to boost demand. (31) (27)

PARTNERSHIPS. Food and beverage companies frequently sponsor events and concerts as a strategic marketing tactic to enhance brand visibility and connect with audiences. By linking their products to popular events, these companies foster positive brand associations and leverage the excitement and enjoyment of the occasion.

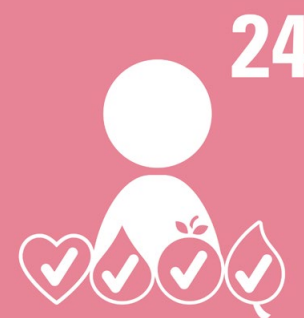
SOCIAL RESPONSIBILITY CAMPAIGNS. Engagement in corporate social responsibility activities, including environmental sustainability efforts or charitable donations to enhance brand image, create greater brand recognition, and appeal to socially conscious consumers. (42) (43)

USE OF BEHAVIOURAL SCIENCE. Examples include using limited-time offers with phrases like "limited edition" or "only available for a short time" to create a sense of urgency and encourage quick purchases before the opportunity disappears. They also employ scarcity tactics by suggesting that a product is in short supply or available only to select customers, fostering a fear of missing out (FOMO) and driving sales. Celebrity endorsements and social media influencers are used to create social proof and increase desirability of products. (32)

COMMUNICATION CHANNELS. As well as the more traditional mass media, non-traditional media including social media, peer-to-peer marketing, online games, and more indirect and stealth marketing tactics that target children and adolescents are used by the food and beverage industry. (33) (34)

Right to the highest attainable standard of health, article 24

Every child has the right to the best attainable health, according to article 24 of CRC. In addition to the right to adequate healthcare, children's rights to health also have a central role to play in the efforts to prevent diseases (including non-communicable diseases). Article 24 also mandates that environments in which children live, play, learn and eat, are designed to promote and facilitate healthier choices. (35)



**HEALTH,
WATER, FOOD,
ENVIRONMENT**



**LIFE, SURVIVAL AND
DEVELOPMENT**

Right to life, survival and development, article 6

Every child has the right not only life but also to healthy development. To this end, access to nutritious and healthy food, and a healthy life, is a prerequisite for a child to grow up and develop in the most optimal way. Children need to be provided with a healthy environment that nurtures their physical and mental abilities to their full potential, which includes a food environment that provides equitable access to nutritious and healthy food for all children. (35)

Right to be free from exploitation, articles 32 and 36

Every child has the right to be free from economic exploitation and all other forms of exploitation (CRC Articles 32 and 36). Exploitation refers to people or actors taking unfair advantage of a child by encouraging or coercing the child, by whatever means, to undertake an activity that provides that person or entity with a benefit. This includes manipulative marketing practices that take advantage of children's vulnerabilities for economic gain. (21)



**PROTECTION FROM
EXPLOITATION**



ACCESS TO INFORMATION

Right to appropriate information, article 17

Children have the right to receive appropriate information that promotes their health and wellbeing. Children, who are still developing physically, mentally and emotionally, are typically more susceptible to all types of media influences and are often less able to control their impulses and apply critical thinking. Governments have a duty to protect children from information and material, including marketing, that is harmful to them. (35)

The Committee on the Rights of the Child, the independent body of experts tasked with monitoring compliance with the CRC, has in its general comments urged governments to make efforts to reduce the prevalence of overweight and obesity in children and young people. In particular, children's exposure to food that contains high levels of fat, sugar, and salt, and is high in energy and low in nutrients, should be restricted. The marketing of these types of products, especially if they are aimed at children, should be regulated, such as their availability in schools and other places in which children and young people often spend time. (36) This includes digital spaces.

Just like in the "offline" world, the rights of every child must be respected, protected and fulfilled in the digital environment. (37) Children of today spend more time online than ever before. Children's digital presence offers them numerous opportunities to learn new things, connect and meet peers, play and relax, and participate in society at large. At the same time, it also poses numerous risks.

*Practically all children in Sweden spend time online every day.
80% of teenagers in Sweden use social media every day.*

Practically all children in Sweden between 8 and 19 years old (96%) spend time online every day according to the latest report from the Swedish Internet Foundation. (38) The latest survey from the Swedish Agency for the Media shows that most children from the age of 12 use their own mobile phone everyday, and 80% of teenagers use social media on a daily basis. (39)

While social media may provide digital spaces where children and young people access information, meet and interact, it is also a key source from where children are exposed to marketing and advertisements. (40)

PART 2:

THE DIGITAL FOOD ENVIRONMENT OF CHILDREN AND YOUNG PEOPLE IN SWEDEN

Based on the lived experiences of adolescents in Sweden, a significant proportion of marketing is presented to them through various online channels. (10) To effectively protect children from the harmful effects of marketing unhealthy food and beverages, it is crucial to gain a better understanding of children's exposure to such marketing and the tactics that are being used to attract the attention of children and young people.

2.1. ABOUT THE PROJECT

In the spring of 2024, after receiving the appropriate ethical permission, the project was conducted by researchers from the IMPACT research group at Karolinska Institute, to gain deeper understanding of children's exposure to food and beverage content on social media. The main focus was to investigate children's exposure to food and beverage advertisements. In addition, children's exposure to other content featuring food and beverages was explored.

Advertisements (Sponsored content) refers to all content marked as "sponsored", "paid collaboration with", "ad" or similar. The companies (or senders) pay for these posts to appear in the users' feeds.

Other content featuring food and beverages includes other posts that are not labelled to indicate that they are an advertisement or sponsored post. This includes posts from accounts users follow or suggestions from their social media app about which accounts to follow. The posts can come from celebrities, private individuals or companies' social media accounts.

In total, 49 children (63% girls, 37% boys) in the age group 13–16 years from 5 schools participated. The participating schools were located in areas with varying socioeconomic characteristics in Stockholm (Östermalm, Tyresö, Farsta, Vårby) and Uppsala (Valsätra-Ultuna). The project consisted of two parts:

PART 1) Mapping of children's exposure to food and beverage advertisements on social media by having children send in screenshots from their own social media accounts. Two different types of data collection strategies were used:

Phase 1: Controlled data collection in the classroom and,

Phase 2: Real world data collection for one week

PART 2) Focus group interviews where children's thoughts and experiences of food and beverage advertising on social media was discussed.

Additionally, a product specific analysis was conducted by UNICEF's Social and Behavioral Change Specialist based on the data collected during part 1 of the project. The analysis will be presented in section 2.4.

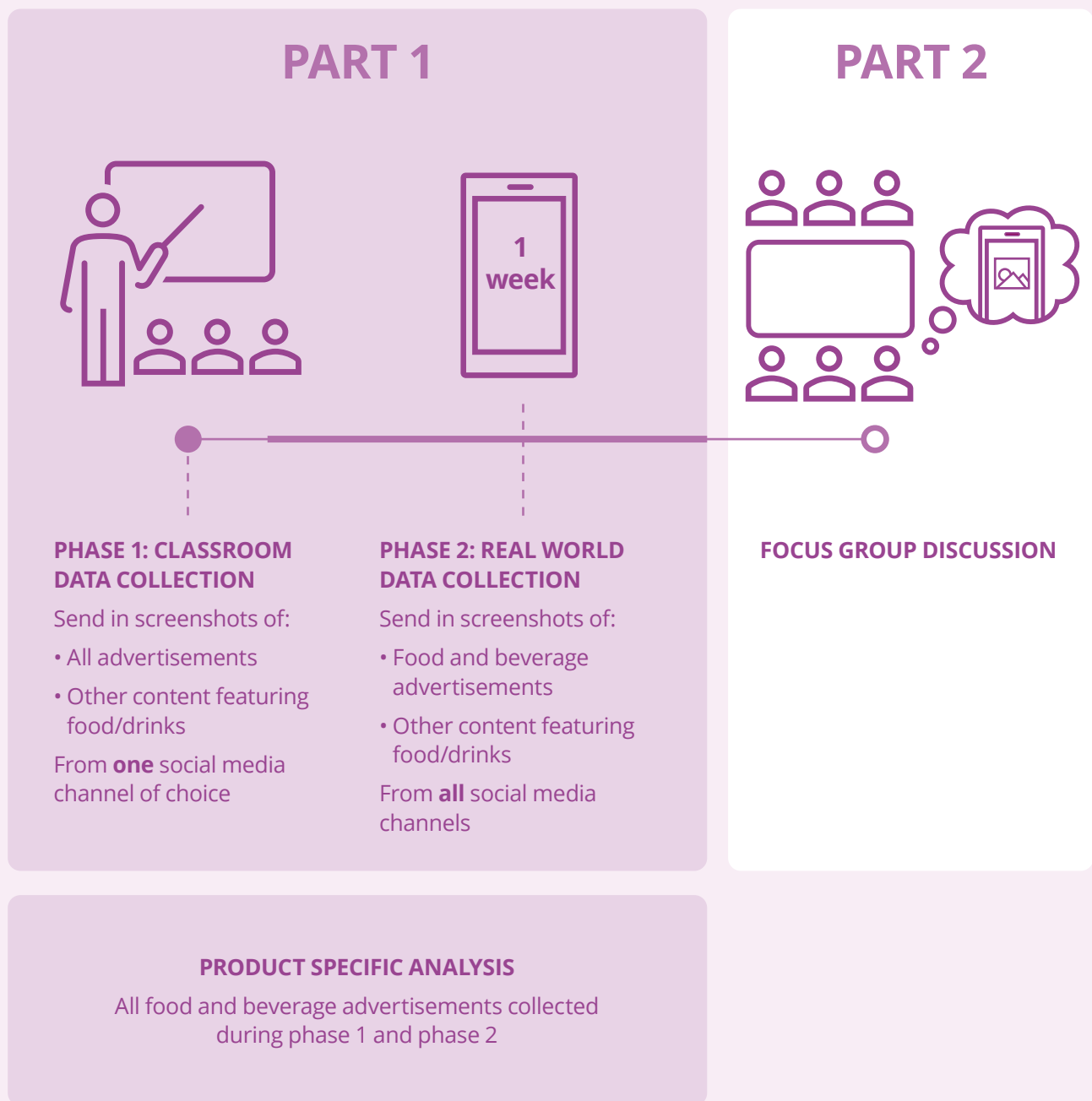


Figure 1. An illustration of the project design.

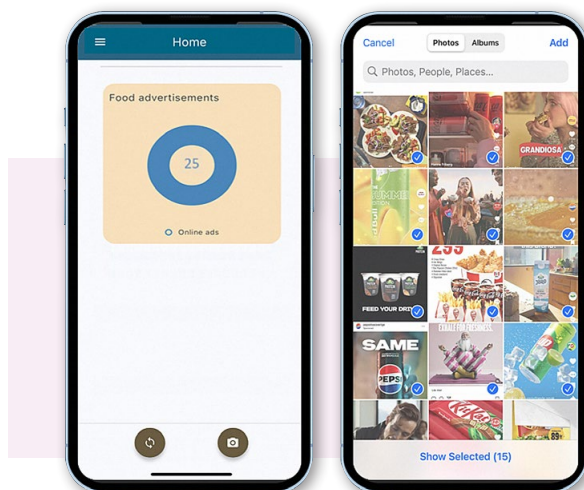


Figure 2. Pictures from the research app. The picture on the left illustrates the home screen of the app where users can see how many screenshots they have uploaded to the research servers. The picture on the right illustrates the process of selecting screenshots to upload.

2.2. PART 1: UNDERSTANDING CHILDREN'S EXPOSURE TO FOOD AND BEVERAGE ADVERTISING

During part one of the project all the participating children used a research mobile application (app) (Mobile Sense; Arbisense AB) to report on their exposure to food and beverage advertisements and other content featuring food and beverages on social media.

2.2.1. Phase 1: Data collection in the classroom

The project started with a data collection session in the classroom where the children were asked to pick a social media platform of their choice. They were then instructed to, for a period of 20 minutes, scroll on the social media platform and take screenshots of all advertisements and other content featuring food and beverages that they saw. Afterwards, all the screenshots were uploaded to the research app.

The aim was to investigate:

- What proportion of the advertisements on social media marketed food or beverages,
- How many food or beverage advertisements the children were exposed to on social media per hour and
- What type of food and beverages were advertised to the children (% of unhealthy foods).

More than one third of all advertisements market food or beverages

In order to see what proportion of the advertisements on social media marketed food or beverages, all the screenshots submitted by the children during the session in the classroom were first analysed based on:

- Whether the screenshot showed an advertisement or other content featuring food and beverages
- What type of product or service was being promoted in the advertisements (advertisement categories, see figure 3)

The analysis showed that 34% (266 out of 775) of all advertisements sent in by the children promoted food or beverages, with food and beverages being the most prominent category of products or services advertised. All the advertisement categories, sorted in order from most to least prominent, are presented in figure 3.

ADVERTISEMENT CATEGORIES (N=775)

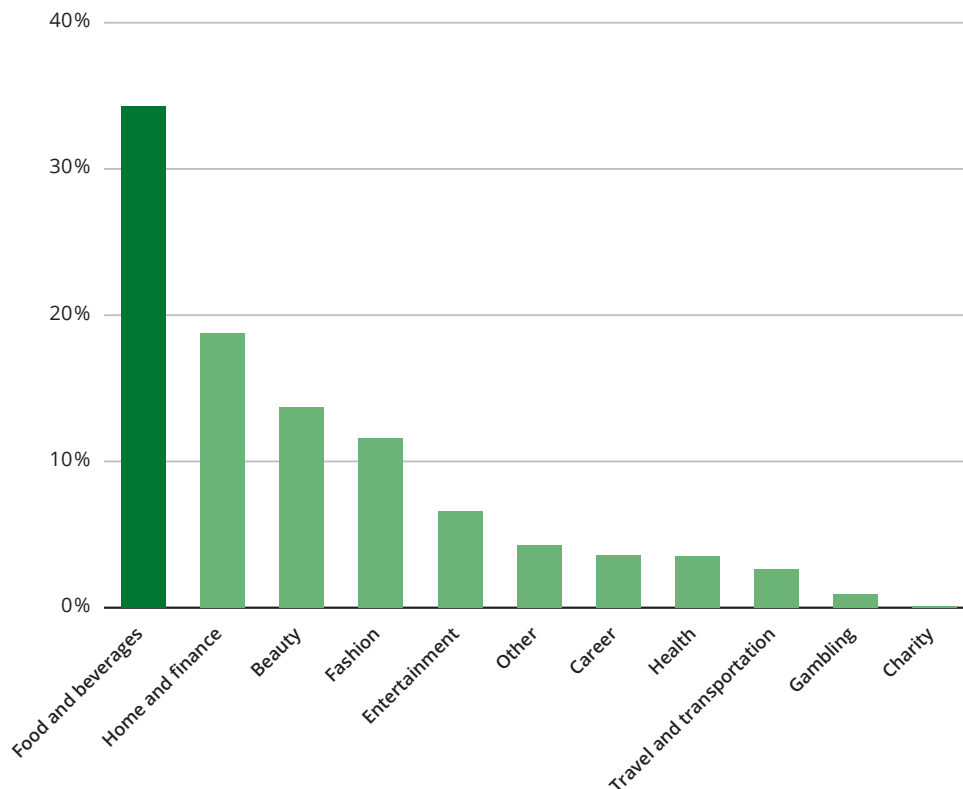


Figure 3. Children's exposure to advertisements marketing different products and services on social media during the session in the classroom.

Examples of what is included in the advertisement categories

Home and finance: Home design, electricity companies, mobile subscriptions, insurance and banks.

Beauty: Make-up, skin care, hair care, perfume and beauty treatments.

Fashion: Clothes, accessories, jewellery.

Entertainment: Streaming services, mobile games, concerts and theme parks.

Other: Advertising that did not fit into any of the other categories, for example advertisements for dating apps, caffeine snuff and recycling companies.

Career: Educational programs, courses and companies looking for employees.

Health: Gyms, pharmacies, online doctors and vaccine clinics.

Travel and transportation: Cars, airlines and travel companies.

Gambling: Gambling companies and casinos.

Charity: Charity organisations looking for public support and financing.

Food advertising frequency on TikTok and Instagram

During the classroom session, most of the children choose to scroll on TikTok or Instagram. As a result, approximately 97% of all screenshots of food and beverage advertisements originated from TikTok (64%) or Instagram (33%). Only a few (3%) screenshots of food and beverage advertisements originated from other social media channels such as Snapchat, YouTube, Pinterest or Facebook. The children were exposed to twice as many food and beverage advertisements per hour on TikTok (26 food and beverage advertisements per hour) compared to on Instagram (13 food and beverage advertisements per hour).

The children were exposed to twice as many food and beverage advertisements per hour on TikTok compared to on Instagram.

Advertisements for unhealthy food and beverages dominate on social media

To determine the proportion of unhealthy food and beverages in the advertisements, the screenshots submitted during the session in the classroom were subsequently analysed based on the content of different types of foods and beverages.

The following food and beverages were included in the unhealthy category:

- Fast food (e.g. pizza, hamburgers, kebab, fried food)
- Sweet snacks (e.g. sweets, ice cream, biscuits)
- Salty snacks (e.g. crisps, salty crackers)
- Other unhealthy foods (e.g. BBQ-sauce, sweetened cereal and sweetened yogurt)
- Sugar-sweetened beverages
- Artificially sweetened beverages
- Energy drinks
- Alcoholic beverages

The results of the analysis showed that 67% of the food and beverage advertisements shared by the children during the classroom session advertised unhealthy food or beverages.

2.2.2. Phase 2: Real-world data collection

After the data collection session in the classroom, the participating children were instructed to continue to take and upload screenshots for a week using the research app, while using social media like they normally do. However, this time they were instructed to limit their uploads to screenshots of food and beverage advertisements and other content featuring food and beverages. During this week, children could report screenshots from all social media platforms. The overall aim of this action was to get a greater understanding of what the children's exposure to food and beverage content on social media looks like by including more days, other hours of the day and weekends.

Real-world frequency of unhealthy food advertisements

A total of 959 screenshots of food and beverage advertisements was sent in by the children during the real-world data collection. In line with the data collected in the classroom, most of the food and beverage advertisements originated from TikTok (58%) or Instagram (38%). The screenshots from the real-world data collection were analysed based on the same criteria as the screenshots from the session in the classroom.

The results of the analysis showed that 71% of the food and beverage advertisements sent in during the real-world experiment contained unhealthy food or beverages.

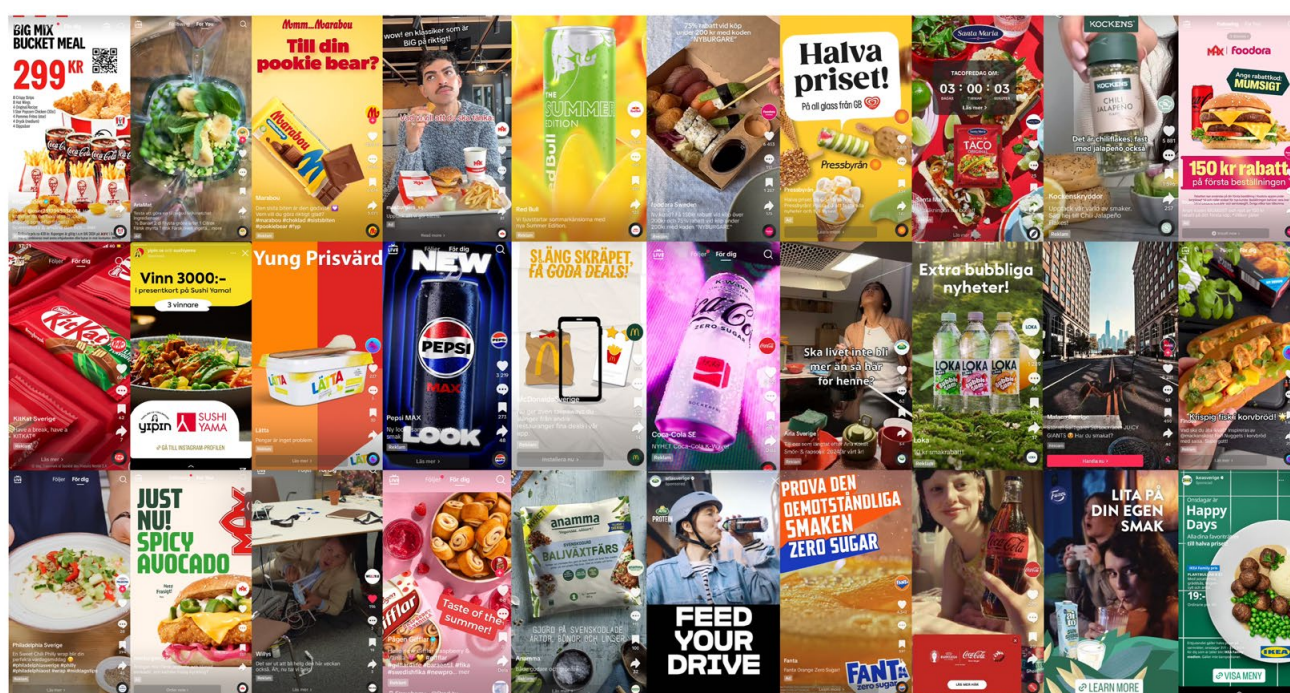


Figure 4. Collage of food and beverage advertisements that the children were exposed to during the experiment. All the presented photos were collected from children during the project.

2.2.3. Findings

The results from both the data collection session in the classroom (phase 1) and the real-world data collection (phase 2) indicate that the majority of the food and beverage advertisements that the children see on social media market unhealthy food or beverages.

When all pictures from both data collection phases were analysed together, 70% of the food and beverage advertisements sent in by the children marketed an unhealthy product. The difference in the proportion of unhealthy food and beverages between the controlled classroom data collection (67%) and the real-world data collection (71%) was not statistically significant.

Among the advertisements that contained some type of unhealthy food or beverages, fast food (e.g. pizza, hamburgers, kebabs, fried food) was the most advertised food type (see figure 5). No significant difference could be seen between boys and girls in their exposure to unhealthy food and beverage advertising (71% among girls vs 69% among boys).

A CALCULATED EXAMPLE BASED ON DATA FROM THE CLASSROOM SESSION:

- The results from the project indicate that the children are exposed to approximately 26 food or beverage advertisements per hour on TikTok (almost every second minute) and 13 food or beverage advertisements per hour on Instagram.
- Approximately 70 percent of these advertisements promoted unhealthy food and beverages, meaning 17 per hour on TikTok and 9 per hour on Instagram.

In addition to the social media channels mentioned above, the children's online activities also included the use of gaming, streaming and messaging app. However, the children did not report many advertisements from these platforms.

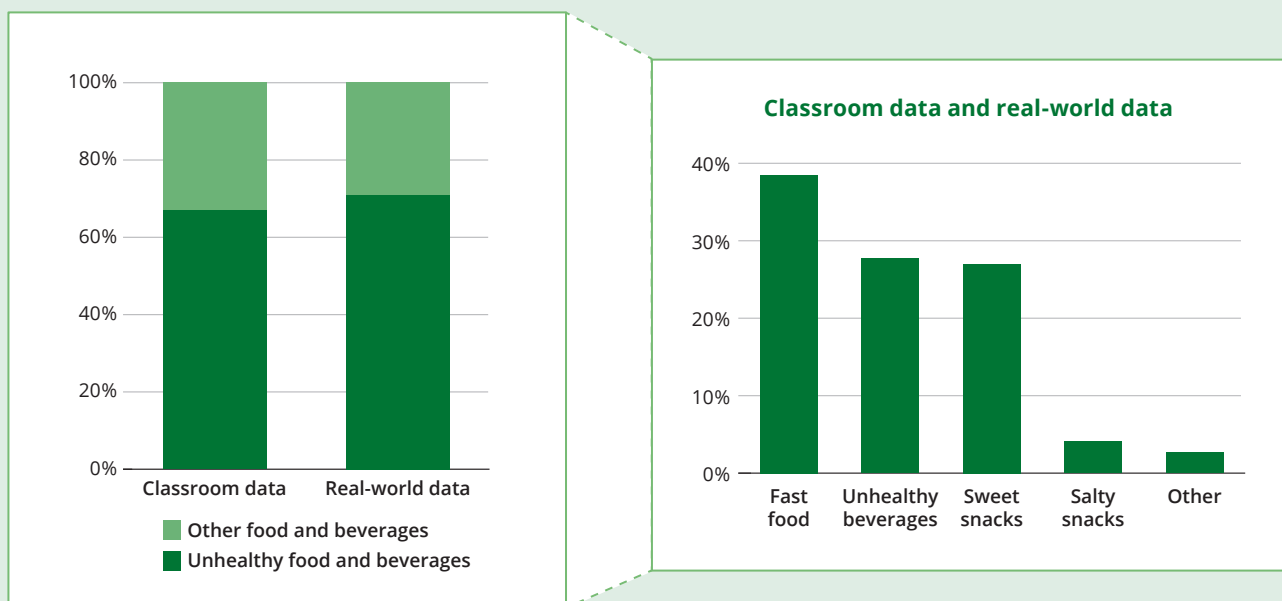


Figure 5. Children's exposure to unhealthy food and beverages in social media advertisements, based on data from both classroom and real-world data. Unhealthy beverages are a combination of the beverages category, i.e. artificially sweetened beverages, sugar-sweetened beverages, energy drinks and alcoholic beverages.



Figure 6. The pyramid to the left shows a simplified version of the proportion of food and beverage advertisements that the children reported being exposed to during the project. The pyramid on the right shows a simplified version of what the pyramid should look like if food promotion practices were compatible with the national dietary guidelines. All the presented photos were collected during the project.

Promotion of unhealthy food and beverages in campaigns

The combined dataset (considering both classroom (phase 1) and real-world data (phase 2)) was also analysed based on the presence of specific marketing campaigns used to promote food products and services. Specifically, marketing campaigns including new products, limited editions, competitions and discounts/offers were considered. Out of all food or beverage advertisements, 41% contained at least one of these campaigns. The most commonly occurring type of campaign was the promotion of a new product (17%), followed by offers and discounts (15%), competitions (5%) and limited editions (4%).

The majority (78%) of these campaigns promoted unhealthy food and beverages. Campaigns promoting limited edition products had the highest proportion of unhealthy food and beverages (96%).

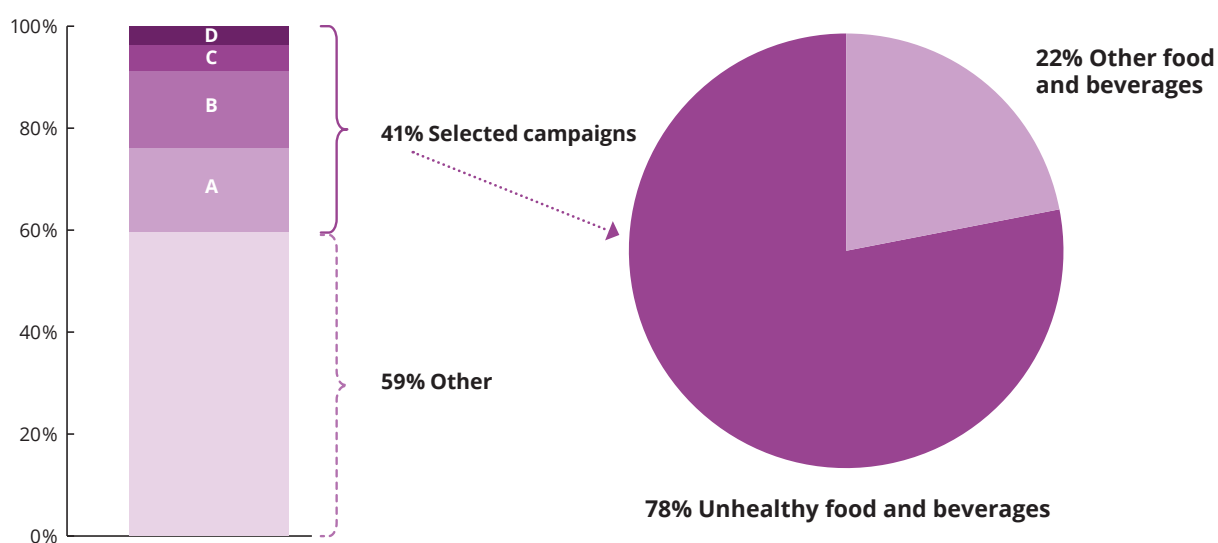


Figure 7. Children's exposure to focused marketing campaigns. The campaigns selected include **A.** New products, **B.** Discounts/offers, **C.** Competitions and **D.** Limited editions. Note that 11 pictures included more than one type of campaign.

Other content featuring food and beverages

In total, 2,977 screenshots of other content featuring food and beverages were sent in by the children during the project (864 from the data collection session in the classroom (phase 1) and 2,113 from the real-world data collection (phase 2)). This includes, for example recipes, food and beverage recommendations and content that food companies post on their own social media accounts.

Out of all the other content featuring food and beverages (considering both classroom (phase 1) and real-world data (phase 2) collections), 64% contained unhealthy food or beverages. No significant difference could be seen between genders from the reported pictures of unhealthy food or beverages (66% from girls vs 62% from boys).

2.3 PART 2: CHILDREN'S VIEWS ON THEIR DIGITAL FOOD ENVIRONMENT

The second part of the project consisted of focus group interviews that were conducted at the schools. During the interviews children shared their thoughts and experiences of the food and beverage advertisements on social media. The children also discussed a selection of pictures of digital food advertisements that they had collected during the project. The aim was to understand the children's perspective on their digital food environment and better understand what captured their attention. In total, 28 children (61% girls, 39% boys) participated in 5 focus groups (with an average of 6 children per group), which lasted approximately 20–40 minutes.

Questions discussed:

- Children's experiences of the digital food environment
- What the children think and feel about the advertisements on social media
- Whether the children would like anything to change about their digital food environment

2.3.1 How well children recognise advertising online

From the discussions it was clear that the children became more aware of their exposure to advertising after participating in the project. Several children had not previously reflected on the advertising but believed that the project made them more aware.

"I think I've never really focused so much on advertising before. I just, I knew they were there, but I just like scrolled past them. Now I like focus on it, you look at it, you acknowledge it more and the products that you see on social media."

Child, Stockholm

The children mentioned that they saw advertisements for food and beverages on TikTok, Instagram, Snapchat and YouTube. Some children experienced more food advertising on TikTok while others experienced more on Instagram. The amount of food advertising the children felt they were exposed to on social media also varied. Some experienced that they saw advertising for food all the time, while others saw almost nothing at all.

"When I use social media about like every five to six posts, you know because I use Instagram more than TikTok or the other ones, I scrolled and then about every five or six I saw was like an ad for something"

Child, Stockholm

"So almost all the time, there is a lot of food."

Child, Stockholm

However, several children felt that the advertisements were often repetitive, meaning that the same advertisement appeared over and over again. It was also these recurring advertisements that the children remembered the best.

The children reported seeing advertisements from companies, as well as from influencers who promote products in collaboration with a company. The children also mentioned that they often saw influencers promoting their own products or companies. In addition, several children mentioned seeing a lot of other content featuring food and beverages, such as recipes and mukbangs.

"And a lot these days I've noticed that there's a lot of influencers, there's a protein bar called Barebells, so there's a lot of influencers, that I guess they're sponsored or something, that are posting a lot of that content."

Child, Uppsala

Some children found it easy to identify advertising on social media. Posts marked with sponsored, clear logos, links to websites and posts from companies were highlighted as examples of those that made it clear they were advertisements. However, some children found it difficult to determine what was sponsored and found the advertising well-hidden in the posts. Posts from influencers were more difficult to identify as advertising compared to posts from companies.

"I think like on Instagram, I still think it's quite clear because then it says sponsored under the profile."

Child, Uppsala

"Yes, but sometimes you have to really look for it, because it's kind of hidden."

Child, Uppsala

"So, with companies you often know that it is advertising, because their posts are often advertising. But influencers can post a bit of everything. So, if an influencer like posts a video and eats sushi, you don't think that it's sponsored."

Child, Stockholm

2.3.2 Attention to advertising for unhealthy food and beverages

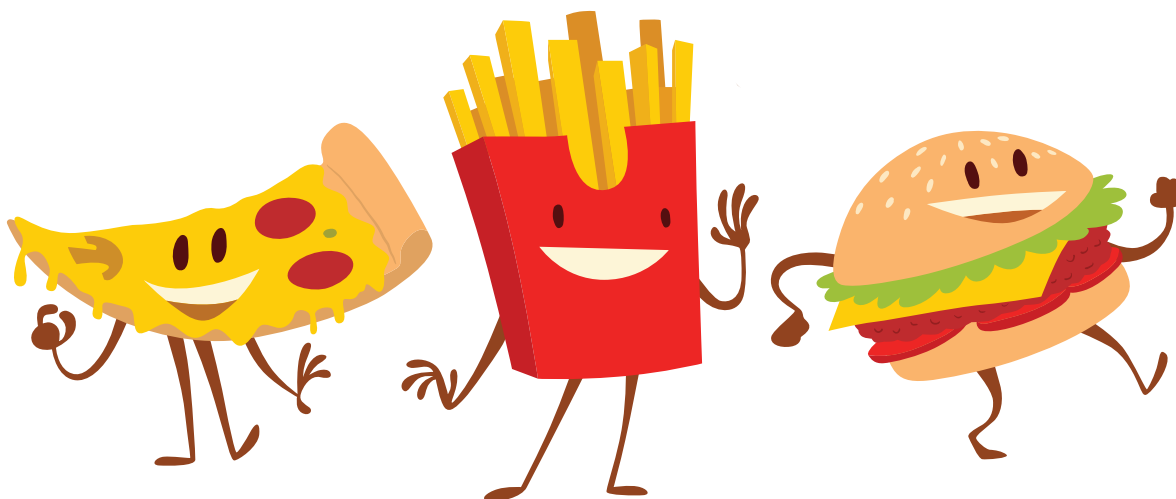
When the children were asked what type of food they saw advertised on social media, most mentioned large fast-food chains such as Max and McDonald's. Several children also mentioned that they often saw advertisements for sweet treats such as ice cream, biscuits and chocolates as well as crisps. Advertisements for beverages such as soft drinks, carbonated water and energy drinks were also common. Furthermore, many children recalled seeing a lot of advertising from food delivery companies, such as Foodora and Wolt. A smaller number of children mentioned that they saw a lot of advertising for sushi and dairy products.

"It is often like fast food restaurants such as Max, McDonald's and Subway that I have seen many times. Both on TikTok and Instagram. I see it very often."

Child, Uppsala

"Yes, I got a lot [food advertising]! So yeah, I got a lot of McDonald's. And Foodora."

Child, Stockholm



2.3.3 Social media content influencing children's food choices

The children felt that the advertising influenced their food choices. Discounts and contests attracted purchases, while colours and effects captured their interest and made the advertisement memorable.

"Yes exactly, they [Hemmakväll, a candy store] have a lot of discounts all the time, so then I buy a lot of candy that I wouldn't otherwise have bought, because they have a lot of discounts on it and it's cheap."

Child, Stockholm

"Yes, the same with like Foodora or like Wolt. It's like this, if there's discount codes then you use them and buy, and then you buy food that you wouldn't really buy otherwise. To kind of take the chance."

Child, Stockholm

The discussion also revealed that new flavours and limited editions made children want to buy more of the products. Children also followed specific companies to keep up to date on new flavours that were launched. Several children followed companies to participate in contests that gave out discounts and free products. Companies mentioned in the discussion included Nocco, Pepsi, McDonald's, Max, Prime and KFC (in random order).

"Especially when it's limited edition, because then you kind of want to buy a lot of it. If it tastes good, because you know it won't come back."

Child, Stockholm

"Like Clean Drink or Nocco, they usually hold contests and then you have to follow them to be part of it. Then I often do."

Child, Stockholm

In addition to advertising from companies, the children also highlighted trends on social media that influenced their choices. Recommendations and food videos from influencers made several of the children long for specific products. Additionally, recommendations from friends were highly valued.

"Recently I saw an influencer, I can't remember who it was, testing dates with candy flavour, and it looked delicious, and I've already bought two bags this past week."

Child, Uppsala

Some felt that reviews from influencers felt more credible than from companies while others also found it difficult to trust influencers.

"It also feels like if it's influencers who post it feels like, I become like, I'd rather buy it then than if it's advertising [comparing to companies]. Because then it's also like, then it's more a person, and then it's a bit more like you get someone else's perspective on what it's like. And it feels more real as well."

Child, Stockholm

However, not all children felt influenced by the advertising. They instead tried to ignore the advertising as much as possible.

"I feel that because you get so much information all the time, you kind of block it out."

Child, Uppsala

2.3.4 Mixed reactions to advertising on social media

From the discussions, it emerged that some of the children experienced the advertisements as a good thing. They appreciated the discounts from the advertising and felt inspired to try new products.

"It's a good way to promote stuff and it's actually a good thing in itself to use, you kind of renew yourself in a good way."

Child, Uppsala

"You experience new flavours, if they are new and they're advertising it. Because if you go into the store, you might not pay much attention to it because you're walking, for example if it's a candy, so you pick up your favourite bag of candy and you go and pay. But then with the advertising, you kind of have it on your mind, oh but maybe they have the new candy bag so maybe you take it instead and taste and experience new flavours."

Child, Stockholm

However, attitudes to the advertisements weren't all positive. Some children expressed finding the advertising somewhat disturbing and annoying. Several of the children also thought that some advertisements were dishonest. They felt that the products often appeared better-looking in the advertising than in reality and that the products were marketed as healthier than they actually were.

"Like the lettuce on the burger in the videos is bright green and at the actual store it's just dead."

Child, Stockholm

"Fast food is still unhealthy, but then you talk a lot about this kind of Swedish meat and a lot of vegetarian options and things like that. And then it's very fresh in their advertising often, so then it feels like it's healthier than it actually is."

Child, Stockholm

Although the desire for less advertising was raised in the discussions, some of the children also expressed hopelessness about removing advertising, as well as the risk that everything would become paid apps if the advertising disappeared.

"Advertising is advertising. They will always want to sell stuff, so it won't matter."

Child, Stockholm

"Yes, you can imagine that if it weren't for advertising, perhaps most apps would cost money instead. Or I mean they have to get money somehow. Those showing these ads."

Child, Stockholm

2.4 ANALYSIS OF THE MOST FREQUENTLY FEATURED BRANDS

The purpose of the product-specific analysis is to understand, based on children's lived experiences, how the most popular products are presented and marketed to them and their potential effects.

2.4.1 Analysis methods

For the product-specific analysis, all screenshots of food and beverage advertisements that were submitted were analysed again with a new annotation scheme by the research team. In the new scheme, all product names were recorded (e.g. Marabou milk chocolate, Coca Cola Zero, Santa Maria Taco Seasoning Original). A list was then created where all products were ranked based on the number of times they appeared in the dataset. Two additional ranking lists were created with the most marketed products to boys and girls, respectively.

For this analysis, the top three products (by frequency of adverts) in the following categories were reviewed by UNICEF's global Social and Behaviour Change Specialist for Nutrition.

- Sweet snacks
- Beverages
- Savory meals

Additionally, high-selling snack, confectionery, and soft drink products in the Swedish market were identified and assessed. In total, 175 social media screenshots were analysed, alongside a review of the product brands' official websites.

2.4.2 Key areas explored

1. Target audience:

- Examined age representation within advertisements, identifying whether marketing was tailored to target children, adolescents, or adults.
- Analysed the inclusion of cultural symbols or associations with topical issues, such as environmental sustainability or social causes, which could appeal to young people.

2. Language use:

- Looked for the use of exaggerated claims, such as "the best" or "healthy," and whether these statements might create misleading perceptions.
- Analysed the tone, complexity, and framing of messaging.

3. Imagery use:

- Explored the type of images used, including the type of scene (passive vs. active) and colours used.

4. Pricing strategies:

- Reviewed the use of time-limited offers, promotions, and competitions designed to create urgency or exclusivity, potentially driving impulsive purchases.

5. Celebrity endorsements and influencers:

- Investigated the involvement of celebrities or social media influencers in promoting the brands and products.
- Explored any links to 'healthy activities' such as sports.

6. Psychological and emotional triggers:

- Analysed the use of emotional appeals, such as invoking feelings of happiness, belonging, or fear of missing out (FOMO), and linking products to popular social trends to influence consumer decisions.
- Explored how visual elements such as colour and imagery were used to evoke specific emotions or associations, such as health, indulgence, friendship, or luxury.

7. Product development:

- Examined how new products were introduced, including limited editions or seasonal variations, and whether they were marketed as 'healthier' or novel to attract new consumers.

8. Appeal strategies:

- Assessed the balance between emotional versus logical appeals in advertising, exploring whether products were promoted more through emotional triggers or rational arguments (e.g. convenience or value for money).

2.4.3 Findings and conclusions

In conclusion, this analysis highlights the multi-faceted strategies used by food brands to engage teenage audiences in Sweden, which are very much tailored to the audience. Brands craft campaigns that leverage a mix of various known marketing strategies to create narratives that are appealing to teenagers and young adults. New products are tapping into current trends and seasons, often using limited-time availability to create a sense of exclusivity and urgency, which appeals to young consumers' desire for novel experiences.

The ads presented in young people's feeds rarely focus on factual product information. Instead, they promote emotions such as friendship, fun, and indulgence that help position these products as essential to an enjoyable, socially connected lifestyle. These strategies tap into the emotions and desires for social acceptance, exclusivity, and self-expression, which are all powerful drivers during adolescence – a critical stage of identity formation when young people have a heightened susceptibility to social and peer influences.



Target audience

Many of the adverts ($n=43$) featured young adults aged approximately 16 to 25, compared to just six adverts featuring younger teenagers and tweens, and nine adverts that depicted adults/parents. These brands clearly target the teen and young adult demographic. This reflects age segmentation, where brands tailor content to resonate with the life stage and interests of their target segments.

This situational marketing takes advantage of specific times of the year with many adverts capitalising on the start of the summer season (41). Brands had also quickly adapted to reflect Sweden's poor summer weather at the time of data collection. For instance, an ice cream brand extended a half-price promotion due to the delayed arrival of summer, while a sweet snack brand featured teenagers eating a picnic under an umbrella.

Younger consumers tend to favour brands that demonstrate social responsibility, which aligns with their values around sustainability. (42) (43) Environmental messaging was seen in nine of the analysed adverts, where brands promoted "green" products or offered discounts for recycling. This reflects the increasing appeal of cause marketing.

Language use

Positive, affirming language such as "the tastiest" and "This year's most refreshing" were frequently used, emphasising popularity and social affirmation. For example, an ice cream brand claimed, "one tester dared to say this was one of the best ice creams they'd ever eaten." Such claims played on bandwagon effects and social proof – appealing to consumers' desire to follow what's popular or best. (44) (45)

Other notable language themes used include:

- Words such as "incredible," "luxurious," "bigger," and "sophisticated" were frequently used to describe the products.
- Brands personalised their messages, invoking emotional appeals like "elevate your mood" or "you are the force."
- A mix of Swedish and English words was common, especially in flavour descriptions, giving products an international feel.

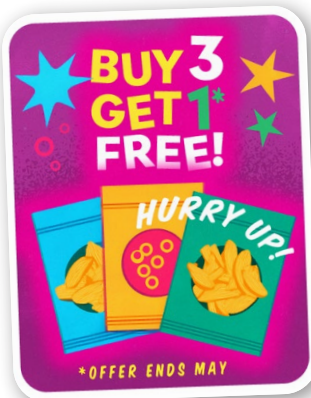


Fear of missing out (FOMO) (46) (47) was also frequently employed. For example, a soft drink brand asked, “Did you miss out?” and reassured consumers that an upcoming event provided another chance to take part in their gaming experience. The use of scarcity marketing, where time-limited offers or the perception of exclusivity increases perceived value and urgency to purchase, is a commonly used tactic. (48)

Image use

Young people (late teens to early 20s) were prominently featured in the images. They were typically shown engaging in lifestyle activities such as sunbathing, playing video games, travelling, and attending festivals. These activities appeal to the desire that most teenagers have for freedom and life-expression. This use of life-style marketing creates a halo effect, where positive emotions from these activities are transferred onto the product (64).

Heart emojis were commonly used to symbolise love for the product. Emojis with sunglasses or hearts-for-eyes were frequent, reinforcing youthful, carefree themes. The use of these images links to emotional priming (a subconscious reaction to stimuli) (49) (50), which helps generate immediate positive reactions and strengthens consumer attachment to the product.



Pricing strategies

Discounts were highlighted in 16 of the adverts, with brands often showing how consumers could save money by buying in bulk or taking advantage of special promotions. This type of approach creates a sense of urgency and is linked to the psychological principle that people fear losing out on a deal more than they value gaining something – referred to as loss aversion. (51) For example, a brand offering half price ice creams encourages buyers to try all varieties or buy in bulk for their freezer.

Competitions were a key feature of 13 adverts, often offering tickets to sporting events, concerts, or movie passes as incentives. These competitions appeal to operant conditioning (52), where consumers are rewarded for engagement (entering a contest (53)) and, in turn, are more likely to feel positively toward the brand and make future purchases.

Product development

New products were featured in 44 of the adverts, with many brands emphasising limited-time availability to create urgency and exclusivity. This tactic is again linked to scarcity marketing (46) (47). Limited availability also increases perceived value, pushing consumers to act quickly. The new products often focused on seasonal ingredients.

To appeal to a wider audience, brands created joint products to combine strengths and attract a wider audience and different segments. By co-branding or creating limited-edition offerings, companies can generate excitement and novelty value, appealing to consumers of both brands and enhancing cross-promotional opportunities.





Celebrity endorsements and influencers

Celebrities and influencers, especially from social media, were prominent in 29 of the adverts. Two brands linked their messaging to football, supporting international football competitions and championships.

Influencers came from various backgrounds, including fashion, music and lifestyle, lending credibility to the products through their established fan bases. The use of such influencers creates social proof by showing these figures using or supporting the products. The use of influencers also utilises the authority principle, focused on the fact that people trust endorsements from figures they admire or see as experts in their field. (54) (55)

Psychological and emotional triggers

Products were often framed in various contexts to appeal to different emotional states. For instance, one product was featured in a suitcase to suggest it was perfect for holidays, as well as a perfect picnic food and something to enjoy whilst watching television. This creates contextual congruence – where products are linked to specific occasions or environments, making them more relatable to the consumer's everyday life. Bright colours were used frequently on packaging and advertising. This finding aligns with the evidence that bright colours are used to communicate lightness, festivity, relaxation, and joy. (56)

Most brands did not emphasise ingredients, except when featuring specific seasonal flavours. However, to appeal to health-conscious consumers, they often highlighted elements like “sugar-free”, and one brand promoted its product as a “vitamin boost.” Visual cues for health were shown in 14 of the adverts, often through the inclusion of fruit or vegetable imagery.



Appeal strategies

Emotional benefits, such as indulgence and luxury, were far more prominent than logical appeals such as affordability or convenience. Most brands positioned their products as indulgent treats or must-have items for social occasions, linking them to personal enjoyment or bonding with friends. By framing products as indulgent treats, brands appeal to hedonic consumption, where consumers seek out experiences that bring pleasure and gratification. (57) This is also linked to social learning theory (58), where people model the behaviours of others enjoying these products in social contexts (59).

The product was also associated with specific foods. For instance, a popular soft drink was shown being consumed alongside a variety of dishes, emphasising its versatility. This encourages the viewer to see the products as a natural complement to commonly enjoyed foods and different situations. Consumers may not consciously decide why they want the drink with certain meals but start to reach for it out of habit due to repeated exposure to this pairing in advertisements. This can form a new habit, where the cue (eating food) triggers the routine (consuming the soft drink) and leads to a reward (satisfaction) known as habit loop formation (65).

PART 3: CONCLUSIONS

3.1. CHILDREN NEED HEALTHY FOOD ENVIRONMENTS

Children's digital food environment mirrors their physical environment in promoting and incentivising unhealthy food and beverages.

These messages contribute to shaping children's preferences, desires, and behaviours. The influence of unhealthy food environments on children today – both online and offline, obstructs Sweden's national public health objectives and undermines children's rights to nutritious and healthy food, to development, and to the best attainable health.

The influence of unhealthy food environments on children today – both online and offline, obstructs Sweden's national public health objectives and undermines children's rights to nutritious and healthy food, to development, and to the best attainable health.

Teenagers in particular are not only exposed to fast-paced, targeted online ads; they are also frequently targeted through marketing techniques that tap into their vulnerabilities and desires as they undergo a critical developmental phase.

Although parents and legal guardians have the primary responsibility of caring for and supporting children into adulthood, many lack the knowledge, ability, or capacity to shield them from the harmful impacts of marketing activities. These challenges are amplified in digital space, where children act more independently without technical or legal protection. While children's digital presence offers many opportunities and enjoyable experiences, their right to participate in digital environments should not come at the cost of exposure to unhealthy foods and beverages or monetisation of their personal data.

Given the present and future impact of unhealthy dietary habits on the health of children and young people, measures to improve the food environment must be a top priority. Our food environment must shift from promoting unhealthy dietary habits to encouraging healthy ones. If society fails to achieve this, the current trends are likely to continue, leading to significant suffering for individuals and substantial costs for society in the form of diseases such as cardiovascular disease, cancer, and Type 2 diabetes.

By strengthening and further enforcing current legislation to regulate marketing practices that target children and adolescents, including in digital environments, Sweden can foster a healthy population and a future where nutritional decisions are based on informed choices.

3.2. CLOSE THE GAPS IN PROTECTING CHILDREN FROM THE MARKETING OF UNHEALTHY FOOD

Although Sweden has national laws concerning marketing to children, such as The Marketing Act, The Radio and Television Act, and special regulations concerning marketing of alcohol and tobacco, as well as self-regulatory codes and frameworks by the International Chamber of Commerce (ICC), there is no law that specifically regulates the marketing of unhealthy foods to children. Additionally, there is a clear gap in terms of current scope of the implementation and enforcement of the Convention on the Rights of the Child, CRC. Despite the incorporation of the CRC into Swedish national law in 2020, it has to our knowledge never been applied by the Swedish courts in its assessment of marketing activities, let alone marketing of food and beverages. (60) This, despite the strong links between unhealthy diets and health-related diseases.

Current Swedish legislation is not fully equipped to address the rapidly-evolving marketing techniques and emerging digital channels that are accessible to – and increasingly target – children and adolescents. As a result, and judging from children’s documentation of their food environments, existing legislations and systems in Sweden is failing to protect them from the harmful effects of unhealthy food marketing.

There is a clear gap in terms of current scope of the implementation and enforcement of the Convention on the Rights of the Child, CRC.

The recent EU Digital Services Act (DSA) has the potential to strengthen the protection of children from commercial exploitation, as it will prohibit large digital platforms from applying targeted advertising based on profiling (e.g. based on personal data or online activity) if they with reasonable certainty are aware that the user is under the age of 18 (Article 28). The DSA also expands the potential ability for Sweden to address digital marketing directed at children from outside Sweden. But this will not be enough.

Given the growing prevalence of food-related health issues among children and young people, alongside mounting evidence of the role marketing plays in these trends, there is an urgent need for stronger regulatory and legislative measures and enforcement to protect children’s health and wellbeing.

There is an urgent need for stronger regulatory and legislative measures and enforcement to protect children's health and wellbeing.

There are currently several proposals from organisations and authorities, both internationally and nationally, on how to address the marketing of unhealthy food that children and teenagers are exposed to.

The World Health Organization (WHO) has suggested implementing policies to restrict the marketing of foods that are high in saturated fatty acids, trans-fatty acids, free sugars and/or salt to children. It has also recommended that such policies: are mandatory, protect children of all ages, and are sufficiently comprehensive to minimise the risk of migration of marketing to other media, to other spaces within the same medium or to other age groups. (61)

In January 2025, the Public Health Agency of Sweden and the Swedish Food Agency, on behalf of the Swedish government, presented proposals outlining goals and indicators for

monitoring efforts to promote sustainable and healthy dietary habits among children and adolescents. One of the key measures proposed by the Public Health Agency of Sweden and the National Food Agency is for the government to investigate the conditions for restricting the marketing of unhealthy foods that children and young people are exposed to across all media channels. (62)

Building on our study's findings and the recommendation above, limiting children's exposure to unhealthy food marketing is a crucial step to improving their diets and reducing diet-related diseases.

3.3. A CHILD RIGHTS-BASED APPROACH TO FOOD ENVIRONMENTS

To fulfil its statutory duty to respect, protect, and fulfil the rights of every child under the CRC, the government should, in actions concerning children, integrate the best interests of the child into existing marketing legislation. To this end, the government should explicitly explain how children's interests have been considered and balanced against other priorities.

Parents and young people should be empowered with adequate knowledge, but more critically, through the creation of health-enabling food environments that support the growth and well-being of children. In today's digital era, children are entitled to fully enjoy their rights online under the CRC, including protection, information, privacy, and participation. This must not come at the cost of exposure to harmful content that negatively affects their health and wellbeing.

In today's digital era, children are entitled to fully enjoy their rights online under the CRC, including protection, information, privacy, and participation. This must not come at the cost of exposure to harmful content that negatively affects their health and wellbeing.

Preventing children from accessing digital media is not a viable solution, as the occurrence of food marketing spans across various domains. Digital environments should be designed and deployed to protect children from undue influence and from the impact of advertising that push them towards diets that are detrimental to their health.

While governments are best placed to effectively implement policies and measures that restrict children's exposure to unhealthy food marketing, the private sector also has an important role to play.

To fulfil their corporate responsibility of respecting children's rights and meeting the new sustainability demands, companies need to give special consideration to children's vulnerabilities to commercial activities. This involves assessing and managing risks, opportunities, and impacts on children, ensuring transparency in communicating progress. They should also invest in products and innovations that support children and young people's access to nutritious, affordable and healthy food.

Similarly, actors within the advertising or the digital marketing ecosystem – such as advertising agencies, marketing professionals and digital platforms – can leverage their influence, expertise and platforms to have a positive influence on children's and young people's diets and health.

Finally, all actors shaping children's physical and digital food environments must actively involve children and young people. By listening to their voices and lived experiences, and giving them a seat at the table, we can collaboratively develop solutions and create food environments that give children access to nutritious and healthy food.

PART 4: THE PATH FORWARD

Calls to action from UNICEF Sweden and Swedish Heart Lung Foundation

GOVERNMENT AND GOVERNMENT AGENCIES

- ⊙ Adopt national targets and an action plan to prevent and reduce the prevalence of obesity amongst children and young people.
- ⊙ Investigate the conditions for restricting the marketing of unhealthy foods that children and young people are exposed to across physical and digital environments, with the aim of reducing exposure and consumption. Particular consideration should be given to certain marketing techniques and content that target or that attract children and teenagers, such as characters from popular cultures, influencer marketing, limited edition sales etc.
- ⊙ Secure robust implementation of the DSA to uphold the protection of children in relation to targeted marketing based on profiling, and to ensure that platforms put in place appropriate measures to ensure a high level of privacy, safety and security to children.
- ⊙ The Swedish Consumer Agency should examine and evaluate how the current marketing practices of unhealthy foods and beverages impact children and their rights, apply existing laws in line with the CRC, and contribute to the development of Swedish case law in this area.

BUSINESSES AND THE PRIVATE SECTOR

- ⊙ Food and beverage companies should commit to respecting children's rights and integrate their rights into robust human rights due diligence processes. They should assess the impact of products and marketing on children's health and diets, take measures to ensure children are not exposed to marketing of unhealthy food and beverages, and communicate transparently about their practices and impacts in this regard. They should also set targets to promote healthier diets for children.
- ⊙ Digital platform companies are also urged to adopt processes and measures to ensure children are protected from the marketing of unhealthy food and beverages.
- ⊙ This includes to ensure children's data are processed in a legal and responsible way, refrain from targeting children with marketing of unhealthy food and beverage and be transparent about design and data processing to enable research to better protect children from harmful marketing practices online.

RESEARCH COMMUNITY AND RESEARCH FUNDERS:

- ⊙ Invest more in research and new methods, such as through user-generated data, to better understand children and young people's exposure to unhealthy foods and to identify solutions to better protect them from negative effects of such exposure.
- ⊙ Develop and test innovative interventions that promote healthier eating habits, integrating socio-behavioural approaches into children's daily routines and food environments.

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