UNIVERSITY OF AGDER

The association between parental education, living arrangements and dietary habits among overweight and obese Norwegian children aged 6-10 years.

"Frisklivsstudien barn"

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This master's thesis is carried out as a part of the education at the University of Agder and is therefore approved as a part of this education. However, this does not imply that the University answers for the methods that are used or the conclusions that are drawn.

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This year have taught me to not give up and to stay focused and targeted to finish what I have started. The journey has not been all positive and fun, but I got through it, and I am grateful.
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Thea Christiansen
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Sammendrag

Barns kostholds vaner har endret deg de siste tiårene. Barn er mer overvektige og fete, og sosial ulikhet relatert til dette tema er diskutert i de fleste samfunn.

Hensikten med denne masteroppgaven er å utforske sammenhengen mellom de sosio-demografiske faktorene bosituasjon og foreldres utdannelse og tilgjengelighet og inntak av utvalgte matvarer og totalt energi og makronæringsstoff inntak blant overvektig/fete norske barn i alderen 6-10 år. Sammenbindingen er en utdypning av den teorien som ligger til grunn i vedlagt artikkel. Sammenbindingen starter med en introduksjon, videre følger en utdypning av forekomst og ulike målemetoder av overvekt og fedme, årsaker til – og helsekonsekvenser av overvekt og fedme hos barn og forebyggende tiltak. Deretter følger målet med masteroppgaven, og beskrivelse av metodevalg og studiedesign, utvalg og rekruttering, datainnsamling og statistisk analyse. Videre er et utvalg resultater presentert, og en diskusjon av metodologi. Etter sammenbindingen følger en artikkel med hovedfunnene presentert. Artikkelen er planlagt innlevert til tidsskriftet Scandinavian Journal of Public Health. Etter artikkelen er det vedlagt frekvens spørreskjema, samtykkeerklæringer og godkjenning fra Regional Etisk komité (REK) og Norsk samfunnsvitenskapelig Datatjeneste AS (NSD).

Nøkkelord: Barn, overvekt, foreldres utdannelse, bosituasjon, kostholdsvaner, tilgjengelighet av matvarer

Abstract

Children´s dietary patterns have changed the passed decades. Children are more overweight and obese, and social inequalities related to this topic are discussed among all societies.

The purpose of the master thesis was to explore the association between the socio-demographic factors parental education and living arrangements and the availability and intake of selected food items and total energy intake and macronutrient intake among overweight and obese Norwegian children aged 6-10 years. The thesis is an extension of the theory that is used in the article. This thesis begins with an introduction, which further expands to the elaboration of childhood overweight and obesity occurrence, the causes of the childhood epidemic and further the consequences of childhood overweight and obesity and preventive actions. Further, the objective and description of method applied, the study population, recruitment process, data collection and statistical analysis is explained. Selected results will be presented in the first part of the thesis. Following this, a discussion of the selected results and the used methodology is presented. Further, the article is attached presenting more results. The article is scheduled to be submitted to the Scandinavian Journal of Public Health,

Following the article, is attached the frequency questionnaire, request forms, consent forms and research protocol approval from the Regional Commite for Ethics and the ethical approval and research clearance from the Norwegian Social Science Data Service.

Keywords: Children, overweight, parental education, living arrangements, dietary habits, food availability

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1.0 Introduction

The prevalence of overweight has increased globally since 1980 to 2013 (Ng et al., 2014). And obesity and overweight among children and adolescents is increasing in economically underprivileged countries (Lobstein et al., 2015). Premature overweight and obesity is commonly observed in several developing countries, and the prevalence in low – and middle - income countries is rising rapidly (Gupta, Goel, Shah, & Misra, 2012). All though the frequency is generally high, the prevalence of overweight and obesity might have reached a plateau in some developed countries (Bass & Eneli, 2015).

Nationally, the childhood overweight and obesity epidemic seems to have leveled off, where a stabile prevalence is observed from 2012 - 2016 (Hovengen, Bøhler, & Biehl, 2016).

Childhood overweight and obesity increases the risk of diseases and represent a major public health concern (Lobstein, Baur, & Uauy, 2004). This is because premature overweight and obesity if observed to persist in to adulthood (Reilly & Kelly, 2011; Singh, Mulder, Twisk, Van Mechelen, & Chinapaw, 2008). Type 2 diabetes, hypertension, dyslipidaemia, metabolic syndrome and obstructive sleep apnea are observed consequences of overweight and obesity in children (Reilly et al., 2003). Long-term consequences of premature overweight and obesity are associated with heart disease, cancer and adult diabetes in addition to musculoskeletal changes and psychosocial diseases (Ebbeling, Pawlak, & Ludwig, 2002; Reilly et al., 2005).

Thus, the short and long- term consequences pose a financial burden on the healthcare systems (Trasande & Elbel, 2012). A systematic review of western European countries estimated the obesity-related healthcare burdens absolute cost to be 10.4 billion euros (Müller-Riemenschneider, Reinhold, Berghöfer, & Willich, 2008).

To effectively address this public health challenge, it is essential to detect important and modifiable risk factors contributing to childhood overweight and obesity.

1.1 Study objectives

1. The main objective of the research paper was to examine the association between the socio-demographic factors living arrangements and parental education and availability and intake of selected food items and beverages among overweight and obese 6-10 year old Norwegian children.

2. To perform a test-retest study to assess the reliability of selected questions of the frequency questionnaire used in the quasi-controlled intervention study “Frisklivsstudien Barn” (FSB).

2.0 Theory

2.1 Prevalence of childhood overweight and obesity

Globally, the prevalence of childhood overweight and obesity has increased to an alarming level in the past few decades (Ebbeling et al., 2002). It is estimated that nearly 42 million children are overweight and obese (De Onis, Blössner, & Borghi, 2010). Ng et al., (2014) reported substantial increases in prevalence among children and adolescents in developed countries, with 24% of boys and 23% of girls being either overweight or obese in 2013 compared to 17% of boys and 16% of girls in 1980. In developing countries, the prevalence increased from 8 % in 1980 to 13% in 2013 for boys and girls (Ng et al., 2014).

In eight different European countries, children with overweight and obesity have an estimated prevalence of 19.3-49.0% in boys and 18.4-42.5% in girls, respectively. Across Europe, countries in middle, northern and eastern Europe report the lowest prevalence of overweight among pre – school children, while the Mediterranean region and the British islands report the highest rates (Cattaneo et al., 2010). A study of Ortega et al., (2014) reported that southern Europe had a higher prevalence of overweight and obesity in adolescents compared to central-northern Europe (31 vs 21%) respectively.
According to a recently published national study among Norwegian children, a total of 13% boys and 17% girls were overweight and obesity frequency were 2.3% for boys and 3% for girls (Hovengen et al., 2016).

The prevalence of childhood overweight and obesity varies within countries and regions (Low, Chin, & Deurenberg-Yap, 2009). Significant differences between regions of the world has been identified; approximately 50% or more of the population are overweight or obese in America (61%), Europe (55%) and Eastern Mediterranean (46%), while a much lower prevalence is observed in Africa (27%), South - East Asia (14%) and Western Pacific (25%) (Yatsuya et al., 2014).

2.2 Different measuring methods to define childhood overweight and obesity

There are several measuring methods one can use to assess childhood overweight and obesity. Body Mass Index (BMI) is measured as the ratio of bodyweight in kilograms to the square of the height in meters (kg/m^2), and is the most commonly used method of determining overweight and obesity status (World Health Organization., 1995). BMI has also been recognized as an indicator of total body fat (Lahti-Koski & Gill, 2004). The Norwegian national clinical guideline for weighing and measuring children (Helsedirektoratet, 2010) has recommended the World Health Organization (WHO) reference (de Onis, 2006) to identify overweight and obesity in children from birth to 5 years of age, whereas the BMI charts developed for Norwegian children (Juliusson´s curves) has been recommended as a standard measure for identifying overweight and obesity in children aged 6 – 19 years (Helsedirektoratet, 2010). Another anthropometric measure is waist circumference and weight to height ratio, which is important in detecting abdominal obesity, and the risk factors associated to this measure and to discriminate higher - risk individuals (Bastien, Poirier, Lemieux, & Després, 2014; Cornier et al., 2011). Among US children aged 2-18 years, reference values are provided (Fernández, Redden, Pietrobelli, & Allison, 2004). Additionally, direct methods such as underwater weighing and dual energy X-ray absorptiometry (DEXA) provides a more accurate estimation of body fat distribution, these however are not suitable for large scale use because of costs and limited availability (Lobstein et al., 2004).

2.2.1 Definitions of overweight and obesity based on BMI

IOTF/ Cole´s Index

Internationally acceptable cut off levels for BMI of overweight and obese children aged 2 -18 years is provided by International Obesity Task Force (IOTF), also called Cole´s Index (T. J. Cole, Bellizzi, Flegal, & Dietz, 2000). IOTF`s classification system is based on cross - sectional data from 6 different countries on BMI levels by sex and age, which serves the purpose of representing the normal population (T. J. Cole & Lobstein, 2012). From the study, age and sex specific reference values (iso – KMI) were provided according to children´s

growth and development, and to somewhat consider gender inequalities (T. J. Cole et al., 2000).

WHO growth standards

The publication of the WHO child growth standards, which uses age and sex-specific BMI centiles or standard deviation (SD) scores to define cut offs, have provided another tool for assessing prevalence of overweight and obesity in infancy and early childhood (de Onis, Onyango, Van den Broeck, & Chumlea, 2004). The WHO standards were developed based on results from the WHO Multicentre Growth Reference Study (MGRS) which examined the growth of healthy infants living in good hygienic conditions in six different countries (Brazil, Ghana, India, Norway, Oman and the US). The MGRS, conducted between 1997 and 2003, included a longitudinal component studying infants (n=882) from birth to 24 month, and a cross-sectional component focusing on children, 18-71 months old (n=6669 (Bhan & Norum, 2004). Although the intention behind developing the WHO child growth standards was to show optimal growth of all children in this age range, the MGRS only included children from high social class (except Norway and USA, where social class was not an inclusion criteria), living under conditions where mothers engaged in fundamental health promoting practices, such as breastfeeding and non – smoking environment (de Onis, 2006).

2.2.2 Waist circumference and waist – hip ratio

Abdominal obesity or visceral fat is adipose tissue located within the abdominal cavity and around the visceral organs and has been identified as an important risk factor of cardiovascular disease (CVD) (Bastien et al., 2014). Waist to hip ratio (WHR) and waist circumference (WC) are indirect measurements used to assess body fat distribution, especially abdominal adiposity (Amato, Guarnotta, & Giordano, 2013). If the WC (cm) is over half the height (cm) (WHTR = 0.5), studies have described an increased health risk due to abdominal obesity, regardless of age and gender (Ashwell & Hsieh, 2005; McCarthy & Ashwell, 2006) WC on children has shown to correlate with levels of lipids and insulin in children, which might also be the case for WHR (Freedman, Serdula, Srinivasan, & Berenson, 1999; Maffeis et al., 2008).

2.2.3 Challenges/limitations with the different measuring methods

It is suggested that some countries and world regions should have different BMI cut offs (Inoue et al., 2000). World Health Organization have reported that the relationship between

BMI and percentage of body fat depends on sex, age and varies across ethical groups, with special regard to Asian population (World Health Organization, 2004) It is also challenging to collect and compare prevalence of overweight and obesity between different countries when traditionally used methods and weight references varies (Cattaneo et al., 2010; Wang & Lobstein, 2006).

In Norway and Belgium, children compared to the WHO reference were more similar to the national growth reference, than the WHO standards (Júlíusson, Roelants, Hoppenbrouwers, Hauspie, & Bjerknes, 2011). WHO growth standards are valuable and presents an international comparison of growth, however, it might be a matter of debate whether they can replace the national reference for growth when it comes to the individual child (Hui et al., 2008; Ziegler & Nelson, 2012). Furthermore, for the use in prevalence-studies, the European Childhood Obesity Group recommends that the WHO growth charts and the IOTF´s-definition should be used so that comparisons between epidemiological studies can be performed (Rolland-Cachera, 2011). De Lorenzo et al., (2013) concluded that measuring total body fat % would be a better measure than BMI to assess occurrence of overweight and obesity. BMI does not consider the location of adiposity (Hall & Cole, 2006), and it can therefore become a risk of underestimating children with overweight and obesity (Javed et al., 2015).

2.3 Causes of the childhood overweight and obesity epidemic

The rising prevalence of overweight and obesity is complex and is a result of genetic factors, energy-balance, and social-demographic factors (Bass & Eneli, 2015; Han, Lawlor, & Kimm, 2010; Karnik & Kanekar, 2015). Family and school environment is part of a larger society (community and social environments), where the risk factors for being overweight is not only influenced by sedentary behaviour, unfavourable dietary habits, and decreased physical activity (Davison & Birch, 2001). The latter mentioned authors further concludes that the development of childhood overweight involves a complex set of factors from multiple contexts that interact with each other to place a child at risk of overweight Using Ecological Systems Theory (EST) to highlight the importance of the contexts the children is placed in, may further by explained by figure 1.

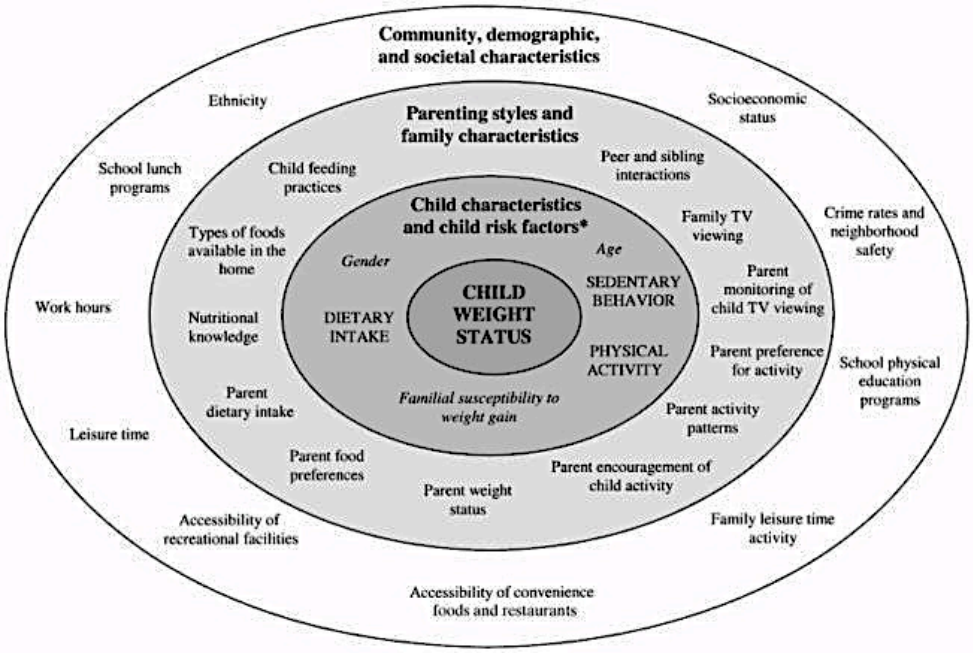

Figure 1: Ecological model of predictors of childhood overweight (Davison & Birch, 2001).

2.3.1 Socio-demographic and family factors

Social inequalities in health

Social inequalities, which is often measured by occupational- and educational attainment, income, employment status and by where you live, have major effects on public health, living conditions, quality of life and welfare and it is an economic burden to the state as (Dahl, Bergsli, & Van der Wel, 2014).

It is well documented that there is socio-economic disparities in health (James, Nelson, Ralph, & Leather, 1997; Mackenbach et al., 2008; Monteiro, Moura, Conde, & Popkin, 2004), and it has become a commonly discussed topic in societies worldwide (Marmot & Bell, 2012). Studies have shown that indicators of SES, such as education- and occupational level and income might affect the dietary quality and food consumption (Darmon & Drewnowski, 2008; Galobardes, Lynch, & Smith, 2007), and that dietary factors may explain some of the observed inequalities in health (Pampel, Krueger, & Denney, 2010)
An European-wide systematic review concluded that the social gradient in health and developmental observed throughout the remaining life course may be explained by gradients initiated in early childhood (Pillas et al., 2014). These latter mentioned results emphasize the

importance of an early prevention approach to tackle the observed social inequalities in health.

A review reported an inverse association between parental education and adiposity in children, and considered parental education a better determinant than parental income in developed countries (Shrewsbury & Wardle, 2008). Studies have reported healthier dietary habits and lower prevalence of overweight among groups with higher income, education or occupational level compared to those with lower income, education or occupational level (Darmon & Drewnowski, 2008; Drewnowski & Darmon, 2005). Unlike many western countries, a higher percentage of obesity has been observed in children from high income families living in low and middle - income countries (Dinsa, Goryakin, Fumagalli, & Suhrcke, 2012; Mistry & Puthussery, 2015).

Family structure

Single parent household, small size families and rural setting are also socio-demographic factors that have been associated with the risk of childhood overweight and obesity (Parsons, Power, & Logan, 1999; Shrewsbury & Wardle, 2008).

Since the 1960´s, families have changed structure, function, and culture (Omran, 1971). The number of divorces have increased, and remained at a high level in Norway (Statistisk Sentralbyrå, 2015). Parental divorce is commonly accepted these days, but it is found to have negative effect on children´s health (P. R. Amato & Keith, 1991; Thomas & Högnäs, 2015). The nationally representative Norwegian Child Growth Study reported that children of divorced parents had a 54% higher prevalence of general overweight (including obesity) and 89% higher prevalence of abdominal obesity compared to children of married parents (Biehl et al., 2014).

Studies have also reported a lower participation among children in organized sport among children living in single parent households compared to those living in two parent households (Gorely, Atkin, Biddle, & Marshall, 2009; McMillan, McIsaac, & Janssen, 2016). Furthermore, children living in single-mother families seems to have a higher risk of being overweight compared to those living in households with both parents (Gibson et al., 2007; Strauss & Knight, 1999). Additionally, studies have shown that children with siblings are less likely to be obese compared to those with no siblings (Chen & Escarce, 2010; Haugaard, Ajslev, Zimmermann, Ängquist, & Sørensen, 2013). A Norwegian cross-sectional study have also shown a higher prevalence of overweight and high WC among families living in rural

areas or in municipalities with low population density than those living in more urban areas (Biehl et al., 2013; Heyerdahl, Aamodt, Nordhagen, & Hovengen, 2012) .

2.3.2 Dietary factors

There has been an increase in the consumption of energy dense-foods and portion size over the past 20 years (Nielsen, Siega-Riz, & Popkin, 2002). Several studies have suggested that large portion size meals and energy dense snack may be one of the environmental influences associated to excess energy intake (Hollands et al., 2015; Rolls, Roe, Kral, Meengs, & Wall, 2004). In general, few research studies have shown clear nutrient- or food based determinant of overweight and obesity. The strongest evidence of increased risk of obesity are diets with a high dietary fat or low fiber content (Jebb, 2007). A prospective cohort study over 12 years among 74 091 US female nurses free of known cardiovascular disease, cancer and diabetes at baseline, showed that those with the greatest increase in intake of dietary fiber gained an average 1.52 kg less than did those with the smallest increase in intake of dietary fiber, independent of bodyweight at baseline (Liu et al., 2003). Furthermore, women in the highest quintile of dietary fiber intake had a 49% lower risk of major weight gain than did women in the highest quintile (Liu et al., 2003). A systematic review estimated that free availability of energy dense food in combination with intake of 14 g/day fiber for >2 days was associated with a 10% decrease in energy intake and body weight loss of 1.9 kg over 3.8 months (Howarth et al, 2001). The authors concluded that obese individuals may exhibit a greater suppression of energy intake and body weigh loss compared to lean individuals (Howarth, Saltzman, & Roberts, 2001). Thus, the Nordic Nutrition Recommendations efforts to increase dietary fiber in individuals consuming >25 g/day may contribute to decrease the high prevalence of obesity (Nordic Council of Ministers, 2014).

World Health Organization states that there is convinced evidence that fruit and vegetables decrease the risk of obesity (World Health Organization, 2012). Therefore, WHO/FAO consultation report recommends a mean intake of 400 gram fruit and vegetables per day to prevent chronic diseases including obesity (World Health Organization, 2003). However, a systematic review and meta-analysis reported that studies do not support that recommendations to increase vegetables will cause weigh loss (Kaiser et al., 2014). A

A European cross-sectional study reported that adolescents in 9 European countries had a mean energy intake of 1609 kj/day from beverages, where 30.4% comes from sugar

sweetened beverages, 20.7% from sweetened milk and 18.1% from fruit juice (Duffey et al., 2012). The extensive prospective cohort studies, the Nurses´ Health Study I and II and the Health Professionals Follow up- study showed that replacement of 1 serving per day of sugar sweetened beverages by 1 cup per day of water was associated with 0.49 kg less weight gain over each 4 year period, and the replacement of fruit juices by water was 0.35 kg (Pan et al., 2013).

Several studies from Europe have demonstrated that children and adolescents diet is influenced by parental intake and the availability of unhealthy foods and soft drinks in the household (Gruber & Haldeman, 2009; Van Lippevelde et al., 2013; Vereecken, Haerens, De Bourdeaudhuij, & Maes, 2010). Home availability might be influenced by educational attainment, and a study from seven different European countries showed that soft drinks at home was more frequently available for children aged 6-8 years with low educated mothers, compared to those with high educated mothers (Mantziki et al., 2015). Several studies have reported that home availability/accessibility of fruit and vegetables were positively associated to the intake (Baranowski, Cullen, & Baranowski, 1999; Rasmussen et al., 2006). The impact of food availability, however, is not only through home-environment, but also children and adolescent's social environment contributes to their choice of dietary intake (Briefel, Crepinsek, Cabili, Wilson, & Gleason, 2009; Rahman, Cushing, & Jackson, 2011).

2.3.3 Sedentary behaviour and physical activity

Physical activity is defined as any bodily movement produced by skeletal muscles that results in energy expenditure (Caspersen, Powell, & Christenson, 1985).

Physical activity has a significant health benefit, and reduces the risk of developing non-communicable diseases (NCD), such as coronary heart diseases, insulin -resistance and being overweight (Sattelmair et al., 2011). In transitioning from childhood to adolescent the physical activity levels is observed to decline, and the decline is greater among girls, compared to boys (Brodersen, Steptoe, Boniface, & Wardle, 2007; Nader, Bradley, Houts, McRitchie, & O'Brien, 2008; Riddoch et al., 2004). Globally, four out of five adolescents do not meet the criteria of 60 minute physical activity per day (Hallal et al., 2012). Several studies have demonstrated that daily TV watching is associated with reduced physical activity levels (Marshall, Biddle, Gorely, Cameron, & Murdey, 2004; Stettler, Signer, & Suter, 2004). Furthermore, encouraging children to spend time outdoor may be effective in increasing the

physical activity level (Cleland et al., 2008). In addressing the obesity epidemic, schools may play a central role in promoting healthy living habits (Kaphingst, French, & Story, 2006). A meta-analysis reviewing 43 studies on school-based interventions reported that interventions with a physical activity component isolated and combined with healthier dietary habits was associated with reduced BMI (Miller, 2011).

2.4 Consequences of overweight and obesity

2.4.1 Physical consequences

Childhood obesity raises the risk of diseases, preconditions and complications relative to cardiovascular, musculoskeletal, renal and gastrointestinal systems (Ebbeling et al., 2002). Overweight and obesity are associated with a number of cardiovascular risk factors in children and adolescents and further studies have shown that overweight and obesity increases the risk of developing type 2 diabetes, hypertension, dyslipidaemia, metabolic syndrome and obstructive sleep apnoea (Daniels et al., 2005). Furthermore, high blood glucose levels, hypertension and abnormal blood lipid levels can result in premature heart disease, cancer and adult diabetes (Llewellyn, Simmonds, Owen, & Woolacott, 2016).

2.4.2 Psychological consequences

Psychological consequences of obesity are well documented. Obesity in children is associated with lower self-esteem, and 34% of girls have reported lower self-esteem compared to their non-obese peers (Strauss, 2000). A review study have described an inverse association between BMI was reported and paediatric health related quality of life (HRQoL) and impaired social and physical functioning (Fonseca, Matos, Guerra, & Gomes Pedro, 2009).

2.5 Preventive actions in reducing childhood overweight and obesity

To address the high frequency of childhood obesity, a demand for preventive efforts and interventions among overweight and obese children is needed. There are few previously conducted programs that have been successful in the prevention of childhood obesity (Kunnskapssenteret, 2012).

Due to the high rates of overweight and obesity the American Academy of Pediatrics, World Health Organization (WHO) and the Center for Disease Control (CDC), have recommended

global screening by paediatricians for all children for the risk of overweight and obesity to prevent disease (Krebs et al., 2007). In Norway, a reform in the national health care system places more responsibility regarding early prevention and interventions in the course of diseases on municipal health care institutions (Sosial- og helsedepartementet, 2009). Public health nurses have been provided guidelines on measuring school – aged children´s height and weight, in order to screen and monitor their BMI (Helsedirektoratet, 2010).

3.0 Objective

The main objective of the family based quasi- controlled intervention study was to increase physical activity level, decrease sitting-time, promote healthier dietary habits and a favourable sleeping pattern. Secondarily objective was stabilisation in bodyweight.
In this master thesis, the main objective is to examine the association between the socio-demographic factors living arrangements and parental education and the availability and intake of selected food items and total energy intake and macronutrient intake, using the baseline data from the family based quasi- controlled intervention study.

4.0 Method

4.1 Study design

The Norwegian Directory of Health provided new guidelines in 2010 (Helsedirektoratet, 2010). Placing more responsibility on the municipalities to establish "Healthy Living Centres" (HLCs) to facilitate the adoption of healthy living among all age groups, and to cooperate with universities for professional development and research (Helsedirektoratet., 2013). Following this, this cross – sectional study is part of the on-going intervention study "Frisklivsstudien barn" (FSB) to further explore the main objective of this study.

4.2 Recruitment and study population

According to the national clinical guideline, public health nurses are instructed to measure height and weight of all preschool children and children in 3rd and 8th grade (Helsedirektoratet, 2010). The participating overweight and obese children, aged 6-10 years have been recruited through the standardized measurement periods that are initialized in 1st and 3rd grade. BMI was calculated from height and weight measures according to IOTF´s age and gender specific cut-off points (T. J. Cole et al., 2000). Parents to children with iso-BMI

≥25kg/m^2 received both oral and written information on the FSB study from school nurses during the recruitment process.

A total of 151 children aged 6-10 years from west, east-and south Norway are included in this study. Healthy Life Centres (HLCs) and Public Health Clinics (PHCs) in the municipalities Bergen, Sola, Sandnes, Stavanger, Søgne, Kristiansand (three districts) and Oslo (two different districts) have participated in the study, and data has been collected by trained health professionals at the participating HLCs and PHCs

4.3 Data collection methods

Data was collected over a period from September to October 2015, April to May 2016, and September to October 2016. Data collection was conducted in that time period to avoid possible seasonal variations in dietary intake. When parental consent was given for the child to participate, the parents of the children included in the FSB study filled out a web-based frequency questionnaire (appendix 1) providing information on children´s physical activity and dietary habits. Participants were given a personal identification-number that was used during all parts of the data collection period. Baseline data from all the participants have been used in this master thesis, providing information on their children´s lifestyle behaviours as well as basic demographic and socio-economic variables (e.g. sex, age, living arrangement and educational attainment).

4.3.1 Questionnaire

Only a selection of the questions from FSB´s frequency questionnaire was used for analysis in this master thesis.

Information regarding intake of food items and beverage was assessed with the question: *How often does your child consume the selected food item?* Seven response alternatives were given; *never, 1–3 times per month, once a week, 2–3 times per week, 4–6 times per week, once or more times a day*. And for the consumption of beverages the intervals range were *never, 1–3 glasses per month, 1 glass per week, 2–6 glasses per week, 1 glass per day, 2–3 glasses per day and more than 3 glasses per day.* Based on registered frequency of food and beverage intake, the intake (gram/day) of selected food groups was calculated. Further, it was calculated total energy intake and the intake of energy from macronutrient (E%) using

FoodCalc and the Norwegian food composition table (Øverby, Johannesen, Jensen, Skjaevesland, & Haugen, 2014).

Parental education level was assessed with the question: *What level of education do you have, answer for yourself and your partner.* The question had six response alternatives, each for *yourself* and *your* partner; *(1) elementary school <7 years, (2) elementary school 7 – 10 years, (3) vocational school or high school <3 years, (4) high school – 3 years, (5) 3 years of high school, (6) college or university ≤4 years, (7) colleges or university ≥4 years.* These response alternatives were then dichotomized into low degree of education (3 years of high school or less) and high degree of education (college or university ≥4 years).

Information regarding living arrangement was assessed with the question: *Which adults does your child live with?* Seven response alternatives was given; *(1) both mother and father all the time, (2) with the mother, (3) with the father, (4) with the mother and her new partner, (5) with the father and his new partner, (6) grandparents, (7) others.* The response alternatives were then dichotomized into one parent household or two- parent household.

4.4 Statistical analysis

In this part of the master thesis descriptive statistics was used to determine the percentage of overweight and obese children participating in the study, and to determine the percentage of children living in single and dual parent households. Further, statistical analysis were performed with independent sample t-test of the two independent groups, assessing children´s total energy intake, and nutrient macronutrient intake (E%) relative to high or low parental education and children living in single or dual-parent household. Furthermore, independent sample t-test was used to compare means of the variables intake and availability of selected food items and beverages. For all analysis p-values <0.05 was considered as statistically significant. Data collected from the frequency questionnaire was transmitted to Survey Exact. All statistical analyses were carried out using the statistical software IBM SPSS version 22 (IBM Corp, 2013).

4.4.1 Variables

BMI categories

Height, weight and BMI and iso-BMI are variables used in this study. Trained public health nurses measured height and weight of all participants in the study, and the children were weighted wearing light clothing. The BMI (kg/m^2) of each child was calculated on the basis

of the height and weight measured, and the child´s BMI were further calculated using International Obesity Task Force sex and age-specific cut-off points (T. J. Cole et al., 2000).

4.5 Test retest

4.5.1 Study design

In addition to examining the association between dietary habits and socioeconomic factors in this master thesis, a reliability- test, intra- class correlation (ICC) was performed. This questions availability of selected food items and beverages, parental education and living arrangements was reliability tested. ICC accounts for the variation in and between the individual answer to the different questions, and is an appropriate test for examining the stability between test and retest with regard to intake of selected food items (Wong, Parnell, Black, & Skidmore, 2012).

4.5.2 Recruitment and study population

Leading school nurses in six municipalities (centred in east of Norway) received a mail, providing information of the test-retest study, following a phone call and additional written information about the study. Two municipalities agreed to participate, resulting in 5 participating schools. The main reason why leading school nurses did not want to participate was lack of recourses and too many assigned tasks. Multiple municipalities were already participating in other local research programs, and did not want to involve parents, children and school nurses into further studies. The school nurse recruited 41 children aged 6-10 years from the standardized measurement periods. Parents were given oral and written information about the study, and written consent was obtained from the parents prior to participation in the present test-retest study.

4.5.3 Data collection methods

The test-retest questionnaire contained 11 items derived from the FSB questionnaire (appendix 2), and the data collection took place in 2014/2015. When parental consent was given, the parents of the children received a mail with a link to the web-based frequency questionnaire, with 14 days between each test. The school nurse measured height and weight of the children and coded them with the same identification numbers they were given in the questionnaire. In total, written consent to participate was given for 98 children. 34 did not fill out the questionnaire and 14 participants only finished the first test. Amongst the 14, 5

reported having trouble with the second test and withdrew from the study and 9 participants did not completely fill out test 1 or 2.

4.5.4 Questionnaire

To test the reliability of the questions used in this study, a test-retest was performed, including questions relative to socioeconomic factors and the availability of food items and beverages. The questions regarding intake of selected food items and beverages have been validated prior to this study (N. C. Øverby et al., 2014). Information regarding availability of candy, salty snack, diet-soda, sugar-sweetened soda and fruits was assessed with the question: *How often are the selected food item/beverage available?* Ten response alternatives was given; *never, less than once a month, less than once a week, once a week, two times a week.. seven days a week.* In the statistical analysis they were scored 0, 0.1, 0.5, 1, 2, 3 .. 7 every day. The response alternatives were then dichotomized into every day (7 days a week) or not every day. Further, the questions regarding socioeconomic factors are described in *3.3.1*.

4.5.5 Statistical analysis

A to-way intraclass-correlation coefficient (ICC) was performed to test the correlation between the individual questions used in the frequency questionnaire. To test the for statistic significance 95% confidence interval was used. ICC is classified as very good (>0.81), good (0.61-0.80), moderate (0.41-0.60) and poor (<0.40).

5.0 Results

5.1 "Frisklivsstudien barn"

A total of 151 children, 85 girls and 66 boys, were included in this study. Mean iso-BMI amongst the children was 23.7, where 33.7% are classified overweight (n=51) and 66.3% (n=100) are classified obese. 57.0 % of the children lived in dual-parent households with both parents, 17,4 % lived with their mothers, 9.0% with their mother and her new partner, 0.6% with their father and his new partner and 16.0% of the children lived part time with both parents.

Differences in total energy intake and percentage contribution of energy from macronutrients in the diet of children with high-educated parents compared with those with low-educated parents were not significant (table 1 and 2).

Table 1: Nutrient intake energy-per cent (E%/day) according to parental education.

	Education mother			Education father		
	Low (n=81)	High (n=52)	p-value*	Low (n=57)	High (n= 37)	p-value*
Fat (E%/day)	31 (30-32)	30 (29-32)	0.285	30 (29-32)	30 (29-32)	0.774
Carbohydrate (E%/day)	50 (48-51)	50 (49-52)	0.360	51 (49-52)	50 (48-52)	0.615
Added sugar (E%/day)	11 (10-12)	12 (11-13)	0.288	11 (10-12)	11 (10-13)	0.973
Dietary fibre (E%/day)	2.3 (2.2-2.4)	2.3 (2.2-2.4)	0.852	2.3 (2.2-2.4)	2.5 (2.3-2.7)	0.160
Protein (E%/day)	17 (16-17)	17 (16-18)	0.973	17 (16-17)	17 (17-18)	0.101
Total energy (kcal)	2159 (2002-2315)	1964 (1801-2127)	0.100	2067 (1893-2241)	2158 (1925-2391)	0.524

* Comparison between groups were performed by Independent - samples T Test

Table 2: Nutrient intake in energy – per cent (E%/day) according to children´s living arrangement.

	1 parent (n=42)	2 parents (n=97)	p-value*
Fat (E%/day)	31 (30-32)	31 (30-32)	0.565
Carbohydrate (E%/day)	49 (48-50)	50 (49-51)	0.414
Added sugar (E%/day)	12 (11-13)	11 (10-12)	0.392
Dietary fibre (E%/day)	2.3 (2.1-2.5)	2.4 (2.3-2.5)	0.435
Protein (E%/day)	17 (17-18)	17 (16-17)	0.355
Total energy (kcal)	2028 (1826-2230)	2080 (1944-2216)	0.673

* Comparison between groups were performed by Independent - samples T Test

5.2 Test – retest

A total of 12 girls (63%) normal weight, and 7 (37%) overweight/obese girls and 19 boys (86%) normal weight and 3 (14%) overweight/obese boys were included in the test-retest study.

A very good correlation was found in nine of the ten questions in the test-rest (0.91-0.99). However, the question regarding *"how often are there sugar-sweetened soft drinks available?"*- the ICC showed good correlation (0.68) (table 7).

Table 3. Intra-class Correlation (ICC) and Confidence Interval (CI) a test-retest of the frequency questionnaire among children 6-10 years (n=41)

	ICC	95% CI
What is the child´s age?	0.96*	0.93-0.98
What is your highest level of education?	0.99*	0.97-0.99
What is your partner's highest level of education?	0.96*	0.97-0.98
With whom of the parents do your child live with?	1.0	-
How often are sugar-sweetened soft drinks available?	0.68*	0.40-0.83
How often are diet soft drinks available?	0.91*	0.84-0.95
How often are there candies available?	0.94*	0.89-0.97
How often are there salty snacks available?	0.99*	0.97-0.99
How often are there fruits and vegetables available?	0.98*	0.95-0.99

Intra-class Correlation (ICC) was used to analyse differences between test-retest,

* p= <0.001

6.0 Discussion

6.1 "Frisklivsstudien barn"

The results from the present study showed no difference in energy intake between those with high and low educated parents and between those living with one or two parent's household. To our knowledge, no other studies have examined the energy intake of overweight and obese children according to parental education and living arrangements. One longitudinal study, however, found dietary inequalities related to maternal educational attainment that may influence inequalities found in obesity development (Emmett & Jones, 2015). In addition, low educational attainment have ben associated with higher scores on processed energy dense patterns in both parents and children regardless of weight status (Emmett, Jones & Northstone, 2015). A study by Shrewsbury & Wardle (2008) has shown that low SES children have an increased risk of overweight and obesity in addition to having poorer dietary habits. This is consistent with other observation reported in Norway (Øverby, Stea, Vik, Klepp, & Bere, 2011). However, no significant difference was found between the groups, which may highlight the need for future interventions focusing on overweight and obese children´s dietary habits in relation to their living arrangements and parental education.

The majority of the overweight and obese children in this study lived in dual parent household. This is contrary to other findings, where children living in single-mother families have been found to have a greater risk of being overweight compared to those living in households with both parents (Gibson et al., 2007; Strauss & Knight, 1999). The findings in the present study suggests that childhood overweight and obesity does not vary between single-parent households and dual-parent household in major parts of Norway, with respect to the overweight and obese children. This might further be explained with the minor difference between high and low SES in Norway.

The present study has both strengths and limitations. First, trained public health nurses have been responsible for the measuring of height and weight of the children, and the BMI categorization is performed following IOTF´s criteria (T. J. Cole et al., 2000). This is a major strength in this cross-sectional study. Further, the distribution of girls and boys are relatively

equal distributed and age differences are minimal, which in the present study gives a good comparative basis. Data is collected in west, east and south regions of Norway and the recruitment process has been conducted to cover a major part of the country. In addition, the data was collected during a short time period, September-October, April- May, which is assumed to minimize possible seasonal variations in dietary intake (Ma et al., 2006).
This study has limitations. First, the study population consists only of relatively low number overweight of and obese children, which limited the possibilities of statistical analysis. Another limitation is the use of self-reported questionnaire. The use of self-reported data may represent response bias when reporting dietary intake- and habits (Bandini et al., 2003). Under-reporting of energy- and food intake is a well-established bias in both normal-weight and overweight individuals (Bandini, Schoeller, Cyr, & Dietz, 1990; Lobstein et al., 2004). Also, over-reporting is common in overweight and normal weight individuals, where subjects report healthier dietary habits (Johansson, Solvoll, Bjørneboe, & Drevon, 1998). The lack of information of parental BMI is a further limitation in this study. The risk of becoming overweight or obese during childhood increases with parental overweight or obesity (Danielzik, Langnäse, Mast, Spethmann, & Müller, 2002). It is therefore important to highlight this as the results may be confounded by parental weight status.
Finally, the present study has a cross-sectional design, which does not allow or causal inference. Therefore, the results from this study cannot illuminate the mechanisms that link parental education level and living arrangements and the availability and intake of selected food items. However, cross- sectional studies are time saving and more cost efficient than longitudinal studies, and may therefore also contribute with valuable information.

6.2 Test – retest

The frequency questionnaire containing question relative to intake of selected food items and beverages was validated prior to the study (Øverby et al., 2014), however, questions regarding the socioeconomic factors living arrangements and parental education, and question regarding the home availability of selected food items and beverages were not. Thus, these questions were reliability tested, and the results showed good/very good test-retest reliability. This is indeed positive with regard to the questions used from the FSB questionnaire, and a major strength in this cross-sectional study.
Further, the distribution of participants is geographically spread and represents both rural and urban settings. Trained public health nurses have measured the children´s height and weight,

and the categorization of BMI is performed following international BMI cut-offs (T. J. Cole et al., 2000). Another strength is the 14 days interval between the questionnaires. This gives the participants limited time to change dietary habits (Metcalf et al., 2003) and minimizes recall bias (Cook & Beckman, 2006). Test-retest is often used to measure reliability of self-reported questionnaires (Cook & Beckman, 2006), and it is a cost efficient way to secure the quality of the questionnaire (Wong et al., 2012).
However, a limitation is that the total sample participating in the test-retest is a relatively small (n=41), and consisted of both normal weight and overweight/obese children.

7.0 Ethnical Considerations

The children´s parents have filled out the frequency questionnaire, and therefore provided this master thesis with valuable data. The parents are responsible for accepting to participate on behalf of their child, and the participants were informed that they could drop out of the study at any time. Regional Committee of Ethics approves the interventions study and informed written consent is obtained from the parents of the children. It is also obtained written consent from the participants in the test-retest study, and Regional Committee of Ethics approved the questions used in the test-retest questionnaire prior to the test-retest study.

8.0 Conclusion

In order to work on preventive strategies addressing overweight and obesity among children, detecting all the determinants and more research and effective interventions are needed in tackling inequalities in health. It is therefore necessary to strengthen the knowledge about the prevalence of adiposity and its distribution among children.
Different methodological approaches in research are important to document individual as well as social causes of obesity (Oellingrath, Hersleth, & Svendsen, 2013).

9.0 References

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10.0 Appendix

Appendix 1: Frequency questionnaire “Friskllivsstudien barn”

Appendix 2: Frequency questionnaire used in test-retest

Appendix 3: Requests to participate in “Friskllivsstudien barn” and letter of consent

Appendix 4: Requests to participate in test-retest and letter of consent

Appendix 5: Approval from REK

Appendix 6: Approval from NSD

The association between parental education, living arrangements and dietary habits among overweight and obese Norwegian children aged 6-10 years.

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Abstract

Aims: To examine the association between parental education, living arrangement and the availability and intake of selected food and beverages among overweight and obese Norwegian children, 6-10 years old.

Methods: This cross-sectional study included 151 participants. A web-based frequency questionnaire was used to assess dietary habits, parental education and living arrangements. Weight and height were measured by public health nurses.

Results: The results showed higher availability of sugar-sweetened soft drinks amongst children with low educated mothers (2.5 times/week (95% CI, 1.9-3.0)) compared to those with high educated mothers (1.0 times/week (0.6-1.4)). Children with low educated mothers had also a higher intake of white bread (21.4 g/day (11.2-31.5) vs 4.4 g/day (2.9-6.0)), nut/chocolate topping (5.3 g/day (3.0-7.6) vs 1.8 g/day (1.0-2.7)) and candy (6.3 g/day (5.4-7.2) vs 4.6 g/day (4.0-5.2)). Mean availability of fruit and vegetables was higher amongst children living in dual parent households (6.0 times/week (5.7-6.4)) compared to those living in single parent households (5.4 times/week (4.7-6-0)). Finally, a higher intake of vegetables was shown in children living in single parent households (30.6 g/day (20.9-40.2)) compared to those living in dual parents households (20.4 g/day (16.5-24.4)).

Conclusion: This study found a higher intake and availability of unhealthy food and beverages among children with low educated mothers compared to those with high educated mothers. In addition, the results showed a higher availability of fruit and vegetables, but a lower intake of vegetables among children living in dual parent households compared to those living in single parent households.

Keywords: Children, overweight, parental education, living arrangements, dietary habits, food availability

Background

During the past decades, the prevalence of childhood overweight and obesity has increased worldwide (1-4). Despite the evidence suggesting a levelling off in the prevalence of overweight and obesity in developing countries (5-7), a Norwegian study amongst 3rd graders has shown that 16% of the children are overweight and 4% are obese (8). Childhood overweight and obesity often persists into adulthood, and may lead to increased risk of developing chronic disorders during early adulthood (9-11). Type 2 diabetes, hypertension, dyslipidaemia, metabolic syndrome and obstructive sleep apnea are adverse health outcomes associated with overweight in children and adolescents (12). These risk factors can result in premature heart disease, cancer and adult diabetes (13). The link between overweight/obesity and reduced health among children is complex with genetic, biological, behavioural, social, cultural and environmental influences (14, 15). One of the main postulated explanations for the childhood obesity epidemic is increased sedentary behaviour and reduced physical activity in addition to unfavourable dietary habits (16). However, these factors cannot alone be responsible for the obesity epidemic.

In the western world, a lower prevalence of overweight and obesity has been found among groups from higher social strata (17). A systematic review reported an inverse association between parental education level and adiposity in children (18). In contrast, other review studies have reported higher prevalence of overweight and obesity amongst those with a higher social status living in economically unprivileged countries (19, 20). Other socio-demographic factors, such as single-parent household and family size have also been associated with paediatric overweight (18).

Since the 1960´s, families have changed structure, function, and culture (21). The number of divorces has increased, and remained at a high level in Norway (22). It is reported that children from divorced families have reduced health status and lower levels of well-being than children from intact families (24, 25). And further research have shown that children living in single-mother families have increased risk of overweight compared to those living in two parent households (26, 27).

The purpose of this study is to explore the association between parental education level and living arrangements with the availability and intake of selected food items in overweight and obese children.

Methods

Study design and participants

This cross-sectional study is part of an on-going quasi-controlled intervention study, "Frisklivsstudien barn" (FSB), which aims to promote healthy lifestyle habits in overweight and obese children and their families. Data from the cross-sectional study was collected in September to October 2014, April to May 2015 and September to October 2015.

Healthy Life Centres (HLCs) and Public Health Clinics (PHCs) in the municipalities Bergen, Sola, Sandnes, Stavanger, Søgne, Kristiansand (three districts) and Oslo (two different districts) have participated in the study, and data has been collected by trained health professionals at the participating HLCs and PHCs. Overweight and obese children (iso-BMI $\geq 25 kg/m^2$) and their families are recruited to participate in the present study as a result of routine screening of weight and height by public health nurses in preschool and 3rd grade. Prior to participation in the present study, the parents of the overweight and obese children received both oral and written information on the FSB study. Those who agreed to participate signed a written consent before filling out a web-based frequency questionnaire providing information on their children´s lifestyle behaviours as well as basic demographic and socio-demographic variables (e.g. sex, age, living arrangement and educational attainment).

Questionnaire

In the present study, a selection of the questions from FSB´s frequency questionnaire was used. Participants were given a personal identification-number that was used during all parts of the data collection period. The questions regarding intake of selected food items and beverages have been validated prior to this study (28).

To test the reliability of the questions regarding the availability of food items and beverages, and the socioeconomic factors; living arrangement and parental education, a test-retest was performed, including a small sample of 41 children aged between 6-10 years.

Information regarding intake of food items and beverages was assessed with the question: *How often does your child consume the selected food item?* Seven response alternatives were given; *never, 1–3 times per month, once a week, 2–3 times per week, 4–6 times per week, once or more times a day*. And for the consumption of beverages the intervals range were *never, 1–3 glasses per month, 1 glass per week, 2–6 glasses per week, 1 glass per day, 2–3 glasses per day and more than 3 glasses per day.*

Parental education level was assessed with the question: *What level of education do you have, answer for yourself and your partner.* The question had six response alternatives, each for *yourself* and *your* partner; *(1) elementary school <7 years, (2) elementary school 7 – 10 years, (3) vocational school or high school <3 years, (4) high school – 3 years, (5) 3 years of high school, (6) college or university ≤4 years, (7) colleges or university ≥4 years.* These response alternatives were then dichotomized into low degree of education (3 years of high school or less) and high degree of education (college or university ≥4 years).
Information regarding living arrangement was assessed with the question: *Which adults does your child live with?* Seven response alternatives was given; *(1) both mother and father all the time, (2) with the mother, (3) with the father, (4) with the mother and her new partner, (5) with the father and his new partner, (6) grandparents, (7) others.* The response alternatives were then dichotomized into one parent household or two- parent household.
Information regarding availability of candy, salty snack, diet-soda, sugar-sweetened soda and fruits was assessed with the question: *How often are the selected food item/beverage available?* Ten response alternatives was given; *never, less than once a month, less than once a week, once a week, two times a week.. seven days a week.* In the statistical analysis they were scored 0, 0.1, 0.5, 1, 2, 3 .. 7 every day. The response alternatives were then dichotomized into every day (7 days a week) or not every day.

BMI categories

BMI (kg/m^2) was calculated from height and weight measured by public health nurses. All children were weighted wearing light clothing and without shoes. Normal weight (<25kg/m2), overweight (≥ 25kg/m2), obesity (≥30kg/m2) is defined according to the International Obesity Task Force (IOTF) age and gender specific cut- off points (29).

Data analysis

Descriptive statistics were used to determine the percentage of overweight and obese children. Further, statistical analysis were performed with independent sample t-test of the two groups, assessing children´s availability and dietary intake relative to high or low parental education, and availability and dietary intake between children living in single or dual-parent household. Furthermore, independent sample t-test was used to compare means of the variables intake and availability of selected food items and beverages. For all analysis p-values <0.05 was considered as statistically significant. Data collected from the frequency questionnaire was

transmitted to Survey Exact. All statistical analyses were carried out using the statistical software IBM SPSS version 22 (30).

Results

Mean iso-BMI amongst the children was 23.7, and 33.7% of the children participating in the present study were classified overweight (n=51) and 66.3% (n=100) were classified obese. Table 1 presents the availability of food items relative to parental education. The results showed higher availability of sugar - sweetened soft drinks amongst children with low – educated mothers (mean intake, 2.5 times/week; 95% CI, 1.9-3.0) compared to those with high-educated mothers (1.0 times/week 95% CI 0.6-1.4) (p= 0.001), respectively. The results showed no further differences in availability of the other selected food items and beverages between children with low-educated parents compared to those with high-educated parents. Comparing the intake of selected food groups between children with low- and high educated mothers showed a higher intake of white bread (21.4 g/day (95% CI 11.2-31.5) vs 4.4 g/day (95% CI 2.9-6.0), (p=0.009)), nut/chocolate topping (5.3 g/day (95% CI 3.0-7.6) vs 1.8 g/day (95% CI 1.0-2.7), (p=0.021)) and candy (6.3 g/day (95% CI 5.4-7.2) vs 4.6 g/day (95% CI 4.0-5.2), (p= 0.009)) among those with low-educated mothers (Table 2).

Table 4 presents the availability of food items relative to living arrangements, demonstrating that the mean availability of fruit and vegetables was higher amongst children living with two parents (6.0 times/week; 95% CI, 5.7-6.4) compared to those living with one parent in the household (5.4 times/week; 95% CI, 4.7-6-0) (p= 0.034). No difference in availability of other selected food items and beverages was found between children living with one or two parents in the household, respectively.

Finally, the results demonstrated a higher vegetable intake 30.6 g/day (95% CI 20.9-40.2) among children living with one parent in the household compared to those living with two parents in the household 20.4 g/day (95% CI 16.5-24.4) (p=0.021) (Table 5). No difference in intake of other selected food items and beverages was found between children living with one or two parents in the household, respectively.

Discussion

Results from this cross-sectional study showed that the availability of sugar-sweetened soft drinks was higher among overweight and obese children with low-educated mothers than those with high-educated mothers. This is consistent to findings in a study from seven different European countries, where the availability of soft drinks at home was more frequent

for the children aged 6-8 years with low educated mothers, compared to those with high educated mothers, however, this study did not focus in the child´s weight status (31). Furthermore, the present study showed that children with low educated mothers had a higher intake of unhealthy food compared to those with high educated mothers. These results are also consistent with previous research among 10 year old overweight/obese and normal weight children, suggesting that children with high educated mothers were more likely to make healthier food choices than those with low educated mothers (32). Furthermore, the results from the present study revealed differences in the intake of selected food items, where children with low educated mothers had a greater intake of white bread, nut/chocolate topping and candy compared to those with low educated mothers. This result is in line with another Norwegian study, which showed that low maternal education was associated with poorer dietary habits, and girls with the least educated mothers were found to have a greater intake of candy and consumption of soft drinks compared to girls from the most educated mothers (33). Previous studies have reported an inverse association between maternal educational level and overweight and obesity among children (8, 34), indicating that a sugar-rich diet may lead to positive increments in bodyweight.

When examining the association between living arrangement and dietary factors, the results in the present study showed that children living in dual-parent households reported a higher availability of fruit and vegetables compared to single-parent households. Another study among Norwegian children aged 10-12 years indicates that increased accessibility increases the intake of fruit and vegetables (35). Further, a review study reported that the child´s perceived availability of vegetables was positively associated with vegetable intake (36). Baranowski and colleges found similar associations, where a higher intake of fruit and vegetables was reported when these food items were not only available, but also provided in accessible location (37). However, the highest intake of vegetables in the present study was reported amongst children living in single-parent households. Contrary to the findings in this study, it has been reported that adolescents from single-parent families are less likely to eat vegetables compared to those living in dual-parent families (38). Furthermore, a study among Norwegian 6th and 7th grade children found that unhealthy dietary habits was more prevalent among children living in single-parent families than those living in two-parent families (39). Another study has shown that children aged 6-11 years living in single-parent households reports a higher intake of fat and a higher total energy intake compared to those living in dual parent households, and that overweight and obesity was more prevalent among children in single parent households compared to children in dual parent household (40).

The present study, however, only represent children classified as overweight and obese. There is a lack of studies exploring availability and intake of selected food items among overweight/obese children respective to the child´s living arrangements and parental education. However, a selection of studies explore the association between maternal education and single parent families and the risk of unhealthy dietary habits relative to the age group in the present study, but does not exclusively focus on overweight and obese children. Previous research on family food environment are related to socio-economic inequalities and focuses on energy balance related behaviors and prevention of childhood obesity and are limited to compare overweight and normal weight children (31).
Few previous studies have examined the association between home availability of food and living arrangements, and results from the present study substantiates that future intervention studies should focus on overweight/obese children living in single parent household. There is a need of nutritional education for communities, school management, parents, as well as children and adolescents to promote healthy living habits (41, 42). Home availability is studied to have influence on the child´s eating habits (43), and parent´s nutritional knowledge and health attitudes may impact what type of food the parents make available at home (44, 45).

The present study has both strengths and limitations. First, a major strength of this study is the measuring of children´s height and weight performed by public health nurses and categorization into BMI categories was performed following IOTF´s criteria (29). The study population includes individuals from west, south and east of Norway, and the recruitment process has been conducted so to cover a major part of Norway. However, this study cannot rule out the possibility of selection bias, as participants declining to participate are not controlled for. Further, a validity and reproducibility study have been conducted on Norwegian adolescents for variables in the questionnaire regarding intake of selected food items and beverages prior to this study, and showed good test-retest reliability (28). Also, the inter-rated reliability was assessed for the other variables regarding SES, and home availability of selected food items and beverages in this study, which showed a medium to good reliability score.
This study has several limitations. First, the use of self-reported data may represent response-bias when reporting dietary habits (46). Under-reporting energy- and unhealthy food is widely reported, and particularly in overweight individuals (47, 48). Also, over-reporting healthier dietary habits are common in both overweight and normal weight individuals (49). Further,

the availability of fruit and vegetables was significantly lower in children living in single vs dual parent households, but the intake was higher. However, when exploring the child´s *intake* of selected food items, *fruit* and *vegetables* are distributed in separate groups, and may therefore be unevenly distributed compared to the availability of *fruit and vegetable* group. Finally, the present study had a cross-sectional design, which does not allow or causal inference. Therefore, the results from this study cannot illuminate the mechanisms that link parental education level and living arrangements and the availability and intake of selected food items.

Conclusion

This study found that children with low educated mothers had a higher availability of sugar-sweetened soft drinks and they had a higher intake of white bread, nut/chocolate topping and candy compared to those from high educated mothers. The present study did also find a higher availability of fruit and vegetables among children living in dual parent families, but the highest intake of vegetables was found among children living in single parent households.

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Conflict of interest

None decalred

Table 1: Availability of selected food items and beverages according to parental education.

	Education mother			Education father		
	Low (n=86)	High (n=51)	p-value*	Low (n=57)	High (n=39)	p-value*
Sugar-sweetened soft drinks (times per week)	2.5 (1.9-3.0)	1.0 (0.6-1.4)	**<0.001**	1.8 (1.2-2.5)	1.6 (1.0-2.3)	0.696
Diet soft drinks (times per week)	2.2 (1.6-2.7)	2.9 (2.2-3.7)	0.116	2.3 (1.6-3.0)	2.2 (1.4-3.1)	0.865
Candy (times per week)	3.4 (2.8-3.9)	2.7 (2.1-3.3)	0.097	3.3 (2.6-3.9)	2.6 (1.8-3.3)	0.169
Salty snacks (times per week)	2.5 (2.0-3.0)	2.1 (1.5-2.7)	0.319	2.4 (1.8-3.0)	1.9 (1.2-2.6)	0.323
Fruit and vegetables (times per week)	5.5 (5.1-6.0)	6.1 (5.6-6.6)	0.085	6.1 (5.7-6.6)	5.8 (5.1-6.4)	0.382

* Comparison between groups were performed by Independent - samples T Test

Table 2: Consumption of selected food items and beverages according to parental education.

	Education mother			Education father		
	Low (n=81)	High (n=52)	p-value*	Low (n=57)	High(n=37)	p-value*
White bread (g/day)	21.4 (11.2-31.5)	4.4 (2.9-6.0)	**0.009**	13.1 (4.7-21.5)	9.1 (0.3-17.9)	0.526
Whole wheat bread (g/day)	118.5 (101.8-135.2)	126.3 (108.2-144.4)	0.540	123.2 (104.3-142.1)	145.4 (122.9-167.9)	0.136
Butter (g/day)	5.3(3.7-6.8)	3.7 (2.0-5.4)	0.193	4.6 (2.8-6.4)	4.6 (2.3-6.9)	0.983
Nut/chocolate-topping (g/day)	5.3 (3.0-7.6)	1.8 (1.0-2.7)	**0.021**	4.4 (1.8-7.0)	4.3 (1.1-7.5)	0.971
Juice (g/day)	139.0(97.2-180.9)	111.1 (50.2-172.0)	0.436	148.7 (96.0-201.4)	142.7 (55.6-229.9)	0.901
Diet soft drinks (g/day)	24.1(16.1-32.1)	38.3 (18.9-57.7)	0.125	30.6 (16.8-44.3)	40.5 (16.5-64.6)	0.436
Sugar -sweetened soft drinks (g/day)	146.4 (103.0-189.8)	187.4 (121.5-253.4)	0.281	174.1 (115.6-232.6)	214.9 (128.9-300.8)	0.415
Fish (g/day)	6.9 (51.1-8.7)	6.0 (4.7-7.4)	0.500	4.9 (3.8-6.0)	7.4 (5.8-9.0)	0.010
Fruit (g/day)	163.0 (139.2-186.7)	138.0 (115.1-160.8)	0.155	146.9 (120.9-172.9)	162.0 (137.3-186.7)	0.425
Vegetables (g/day)	25.6 (20.4-30.9)	19.6 (13.2-25.9)	0.144	19.4 (13.8-25.1)	23.7 (15.3-32.0)	0.382
Candy (g/day)	6.3 (5,4-7.2)	4.6 (4.0-5.2)	**0.009**	5.4 (4.3-6.4)	5.3 (4.2-6.5)	0.953
Salty snacks (g/day)	19.3 (16.7-21.8)	16.6 (13.1-20.1)	0.212	17.7 (14.9-20.5)	18.5 (13.5-23.5)	0.773

* Comparison between groups were performed by Independent - samples T Test

Table 3: Availability of selected food items and beverages according to children´s living arrangements.

	1 parent (n=48)	2 parents (n=99)	p-value*
Sugar - sweetened soft drinks (times per week)	2.2 (1.5-2.9)	1.7 (1.3-2.2)	0.261
Diet soft drinks (times per week)	2.7 (1.9-3.5)	2.5 (1.9-3.0)	0.497
Candy (times per week)	3.3 (2.6-3.9)	3.0 (2.5-3.6)	0.563
Salty snacks (times per week)	2.4 (1.8-3.1)	2.3 (1.9-2.8)	0.798
Fruit and vegetables (times per week)	5.4 (4.7-6.0)	6.0 (5.7-6.4)	**0.034**

* Comparison between groups were performed by Independent - samples T Test

Table 4: Consumption of selected food items and beverages according to living arrangements.

	1 parent (n=42)	2 parents (n=97)	p-value*
White bread (g/day)	17.2 (3.8-30.7)	13.0 (6.3-19.6)	0.524
Whole wheat bread (g/day)	117.3 (94.7-139.9)	125.2(110.6-139.8)	0.559
Butter (g/day)	4.0 (2.0-6.0)	4.9 (3.6-6.3)	0.458
Nut /chocolate topping (g/day)	2.8 (1.2-4.4)	4.3 (2.4-6.2)	0.339
Juice (g/day)	88.3 (51.9-124.6)	142.0 (97.2-186.8)	0.142
Diet soft drinks (g/day)	24.2 (11.0-37.4)	33.6 (21.5-45.7)	0.359
Sugar - sweetened soft drinks (g/day)	125.3 (72.9-177.7)	176.9 (130.4-223.3)	0.193
Fish (g/day)	7.3 (4.1-10.6)	6.2 (5.3-7.1)	0.385
Fruit (g/day)	143.1 (108.8-177.4)	151.6 (133.7-169.5)	0.632
Vegetables (g/day)	30.6 (20.9-40.2)	20.4 (16.5-24.4)	**0.021**
Candy (g/day)	4.8 (3.9-5.7)	5,7 (5.0-6.5)	0.136
Salty snacks (g/day)	16.5 (13.8-19.4)	18.5 (16.0-21.1)	0.362

* Comparison between groups were performed by Independent - samples T Test

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Appendix 1

Hei!

Takk for at du vil være med på denne undersøkelsen!

Din og ditt barns deltagelse er viktig for oss, og det er veldig fint hvis du kan fylle ut dette spørreskjemaet nøyaktig.

Til å begynne med stiller vi et par spørsmål om deg.

Etter det vil vi gjerne at du tenker tilbake på de siste 4 ukene og vi vil spørre deg om følgende:

- Hvor aktivt barnet ditt har vært de siste 4 ukene
- Hva har barnet ditt spist og drukket de siste 4 ukene
- Måltidsvaner

Du skal sette kryss ved det svaret som passer best for ditt barn. Det er viktig at du leser spørsmålet og svaralternativene nøye og at du husker å bare sette ETT KRYSS for hvert spørsmål.

Dersom det er noe du lurer på kan du spørre en av våre medarbeidere om hjelp.

Husk dette før du setter i gang: Vær ærlig! Det er ingen svar som er mer riktige enn andre, og ingen får vite hva du har svart.

Lykke til med skjemaet!

Hva er ditt ID nummer?

_____

Dato for utfylling av spørreskjema:

____

VI VIL GJERNE VITE NOE OM DEG OG DITT BARN

Spørreskjemaet besvares av

(1) ❑ Mor

(2) ❑ Stemor

(3) ❑ Far

(4) ❑ Stefar

(5) ❑ Annen

Hvilken utdanning er den høyeste du har fullført (vennligst svar for både deg og din ektefelle/partner)

	Jeg	Ektefelle/partner	Har ikke ektefelle/partner
Mindre enn 7 år grunnskole	(1) ❑	(2) ❑	(3) ❑
Grunnskole, 7-10 år	(1) ❑	(2) ❑	(3) ❑
Yrkesskole, 1-2 årig videregående skole	(1) ❑	(2) ❑	(3) ❑
3 årig Videregående skole	(1) ❑	(2) ❑	(3) ❑
Høgskole/universitet, mindre enn 4 år	(1) ❑	(2) ❑	(3) ❑
Høgskole/universitet, 4 år eller mer	(1) ❑	(2) ❑	(3) ❑

Hva er din hovedaktivitet (vennligst svar for både deg og din ektefelle/partner)

	Jeg	Ektefelle/partner	Jeg har ikke ektefelle/partner
Yrkesaktiv heltid	(1) ❑	(2) ❑	(3) ❑
Yrkesaktiv deltid	(1) ❑	(2) ❑	(3) ❑
Arbeidsledig	(1) ❑	(2) ❑	(3) ❑
Hjemmeværende	(1) ❑	(2) ❑	(3) ❑
Pensjonist/trygdet	(1) ❑	(2) ❑	(3) ❑
Student	(1) ❑	(2) ❑	(3) ❑

Hvor høy var husholdningens samlede bruttoinntekt siste år (Ta med alle inntekter fra arbeid, trygder, sosialhjelp og lignende)

(1) ❑ Under 125.000 kr
(2) ❑ 125.000-200.000
(3) ❑ 201.000-300.000
(4) ❑ 301.000-400.000
(5) ❑ 401.000-550.000
(6) ❑ 551.000-700.000
(7) ❑ 701.000-850.000
(8) ❑ Over 850.000
(9) ❑ Ønsker ikke svare

Er ditt barn?

(1) ❑ Jente
(2) ❑ Gutt

Hva er alderen til ditt barn?

(år)

—

Hvilke voksne bor barnet ditt sammen med?

(1) ❑ Både sin mor og far hele tiden
(8) ❑ Omtrent like mye hos sin mor og far
(2) ❑ Bare sin mor
(3) ❑ Bare sin far
(4) ❑ Sin mor og hennes nye partner
(5) ❑ Sin far og hans nye partner
(6) ❑ Besteforeldre
(7) ❑ Andre voksne

De neste spørsmålene dreier seg om fysisk aktivitet som barnet ditt gjør på FRITIDEN (for eksempel i helgene, på ettermiddag/kveld og i ferier), IKKE når barnet ditt er på skolen.

Har ditt barn drevet med organisert idrett på fritiden de siste 4 ukene?

(1) ❑ Ja
(2) ❑ Nei

Hvor mange timer i uken?

(1) ❑ 1/2 time
(2) ❑ 1 time
(3) ❑ 2 timer
(4) ❑ Mer enn 3 timer

Sykler eller går ditt barn til og fra skolen og/eller fritidsaktiviteter?

(1) ❑ Ja
(2) ❑ Nei

Hvor mange timer per dag?

(1) ❑ Mindre enn 1/2 time
(2) ❑ 1/2 time - 1 time
(3) ❑ Mer enn 1 time

VI VIL GJERNE VITE HVA DITT BARN HAR SPIST OG DRUKKET DE SISTE 4 UKENE

DRIKKEVARER

Hvor ofte drikker ditt barn følgende typer melk? 1 glass= 2dl

Huk at "drikker ikke" på alle alternativene om du ikke drikker melk

	Drikker ikke	1-3 glass per måned	1 glass per uke	2-6 glass per uke	1 glass per dag	2-3 glass per dag	Mer enn 3 glass per dag
Helmelk (søt/sur, f.eks Kefir)	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Lettmelk	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Ekstra lettmelk	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Skummet melk	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Soyamelk, rismelk eller	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

	Drikker ikke	1-3 glass per måned	1 glass per uke	2-6 glass per uke	1 glass per dag	2-3 glass per dag	Mer enn 3 glass per dag
annen type melk							
Cultura, Biola	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Sjokolademelk	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

Hvor ofte har ditt barn drukket følgende?

Vann fra springen, flaskevann eller mineralvann (1 glass= 2 dl)

(1) ❑ Aldri
(2) ❑ 1-3 glass i måneden
(3) ❑ 1 glass i uken
(4) ❑ 2-6 glass i uken
(5) ❑ 1 glass om dagen
(6) ❑ 2-3 glass om dagen
(7) ❑ Mer enn 3 glass om dagen

Saft (1 glass= 2dl)

F.eks solbærsaft, Fun, Gøy, husholdsningssaft

(1) ❑ Aldri
(2) ❑ 1-3 glass per måned
(3) ❑ 1 glass per uke
(4) ❑ 2-6 glass per uke
(5) ❑ 1 glass per dag
(6) ❑ 2-3 glass per dag
(7) ❑ Mer enn 3 glass per dag

Appelsinjuice (1 glass= 2dl)

(1) ❑ Aldri
(2) ❑ 1-3 glass per måned
(3) ❑ 1 glass per uke
(4) ❑ 2-6 glass per uke
(5) ❑ 1 glass per dag
(6) ❑ 2-3 glass per dag
(7) ❑ Mer enn 3 glass per dag

Eplejuice (1 glass= 2dl)

(1) ❑ Aldri
(2) ❑ 1-3 glass per måned
(3) ❑ 1 glass per uke
(4) ❑ 2-6 glass per uke
(5) ❑ 1 glass per dag
(6) ❑ 2-3 glass per dag
(7) ❑ Mer enn 3 glass per dag

Annen juice og nektar (1 glass= 2dl)

F.eks tropisk juice, eplemost, frokostjuice

(1) ❑ Aldri
(2) ❑ 1-3 glass per måned
(3) ❑ 1 glass per uke
(4) ❑ 2-6 glass per uke
(5) ❑ 1 glass per dag
(6) ❑ 2-3 glass per dag
(7) ❑ Mer enn 3 glass per dag

Brus med sukker (1 flaske= 0,5 liter)

F.eks Coca Cola, Fanta, Solo eller Sprite

(1) ❑ Aldri
(2) ❑ 1-3 flasker per måned
(3) ❑ 1 fasker per uke
(4) ❑ 2-6 flasker per uke
(5) ❑ 1 flaske per dag
(6) ❑ 2-3 flasker per dag
(7) ❑ Mer enn 3 flasker per dag

Brus uten tilsatt sukker (1 flaske= 0,5 liter)

F.eks Pepsi Max, Sprite Zero, Coca Cola light

(1) ❑ Aldri
(2) ❑ 1-3 flasker per måned
(3) ❑ 1 flaske per uke
(4) ❑ 2-6 flasker per uke
(5) ❑ 1 flaske per dag
(6) ❑ 2-3 flasker per dag

(7) ❑ Mer enn 3 flasker per dag

Sportsdrikke (1 flaske= 0,5 liter)

F.eks Powerade, Gatorade, Yt

(1) ❑ Aldri
(2) ❑ 1-3 flasker per måned
(3) ❑ 1-4 flasker per uke
(4) ❑ 5-6 flasker per uke
(5) ❑ 1 flaske eller mer per dag

Energidrikke

F.eks Red Bull, Battery, Pure Rush, Cult eller Burn

(1) ❑ Aldri
(2) ❑ 1-3 bokser per måned
(3) ❑ 1-4 bokser per uke
(4) ❑ 5-6 bokser per uke
(5) ❑ 1 boks eller mer per dag

Cider (1 boks= 0,5 liter)

F.eks Somersby, eplecider eller pærecider

(1) ❑ Aldri
(2) ❑ 1-3 flasker/bokser per måned
(3) ❑ 1-4 flasker/bokser per uke
(4) ❑ 5-6 flasker/bokser per uke
(5) ❑ 1 flaske/boks eller flere per dag

Kaffe, svart

(1) ❑ Aldri
(2) ❑ 1-3 kopper per måneden
(3) ❑ 1-2 kopper per uke
(4) ❑ 3-6 kopper per uke
(5) ❑ 1 kopp eller flere per dag

Kaffe med melk

F.eks Cafe latte, Cappuccino

(1) ❑ Aldri
(2) ❑ 1-3 kopper per måned
(3) ❑ 1-2 kopper per uke
(4) ❑ 3-6 kopper per uke

(5) ❑ 1 kopp eller flere per dag

Te

(1) ❑ Aldri
(2) ❑ 1-3 kopper per måned
(3) ❑ 1-2 kopper per uke
(4) ❑ 3-6 kopper per uke
(5) ❑ 1 kopp eller flere per dag

Hvor mange teskjeer med sukker tilsetter ditt barn kaffe/te hver dag?

F.eks i kaffe og/eller te

(1) ❑ Ingen
(2) ❑ 1-3 teskjeer per måned
(3) ❑ 1 teskje per uke
(4) ❑ 2-3 teskjeer per uke
(5) ❑ 4-6 teskjeer per uke
(6) ❑ 1 teskje eller flere per dag

YOGHURT

Hvor ofte har ditt barn spist?

Yoghurt naturell

F.eks Tine yoghurt naturell

(1) ❑ Aldri
(2) ❑ 1-3 beger per måned
(3) ❑ 1 beger per uke
(4) ❑ 2-3 beger per dag
(5) ❑ 4-6 beger per dag
(6) ❑ 1 beger per dag
(7) ❑ Flere enn 1 beger per dag

Fruktyoghurt, drikkeyoghurt

F.eks jordbær, melon, pære/banan, Skyr, Yoggi

(1) ❑ Aldri
(2) ❑ 1-3 glass/beger per måned
(3) ❑ 1 glass/beger per uke
(4) ❑ 2-3 glass/beger per uke
(5) ❑ 4-6 glass/beger per uke
(6) ❑ 1 glass/beger per dag
(7) ❑ Flere enn 1 glass/beger per dag

Biola, Activia, Actimel

(1) ❑ Aldri
(2) ❑ 1-3 beger per måned
(3) ❑ 1 beger per uke
(4) ❑ 2-3 beger per uke
(5) ❑ 4-6 beger per uke
(6) ❑ 1 beger per dag
(7) ❑ Flere enn 1 beger per uke

Go-morgen yoghurt

(1) ❑ Aldri
(2) ❑ 1-3 beger per måned
(3) ❑ 1 beger per uke
(4) ❑ 2-3 beger per uke
(5) ❑ 4-6 beger per uke
(6) ❑ 1 beger per dag
(7) ❑ Flere enn 1 beger per dag

BRØD OG KORNPRODUKTER

Hvor ofte har ditt barn spist?

Cornflakes, Havrefras, Special-K, Havreloops o.l.

(1) ❑ Aldri
(2) ❑ 1-3 boller per måned
(3) ❑ 1 bolle per uke
(4) ❑ 2-4 boller per uke
(5) ❑ 5-7 boller per uke
(6) ❑ Mer enn 1 bolle per dag

Coco pops, Honnikorn, Weetos, Frosties o.l.

(1) ❑ Aldri
(2) ❑ 1-3 boller per måned
(3) ❑ 1 bolle per uke
(4) ❑ 2-4 boller per uke
(5) ❑ 5-7 boller per uke
(6) ❑ Mer enn 1 bolle per dag

Havregryn

F. eks Bjørns havregryn

(1) ❑ Aldri
(2) ❑ 1-3 boller per måned
(3) ❑ 1 bolle per uke
(4) ❑ 2-4 boller per uke
(5) ❑ 5-7 boller per uke
(6) ❑ Mer enn 1 bolle per dag

Müsli

F.eks AXA Go'dag

(1) ❑ Aldri
(2) ❑ 1-3 boller i måneden
(3) ❑ 1 bolle per uke
(4) ❑ 2-4 boller per uke
(5) ❑ 5-7 boller per uke
(6) ❑ Mer enn 1 bolle per dag

Grøt

F.eks. havregrøt

(1) ❑ Aldri

(2) ❑ 1-3 boller per måned

(3) ❑ 1 bolle per uke

(4) ❑ 2-4 boller per uke

(5) ❑ 5-7 boller per uke

(6) ❑ Mer enn 1 bolle per dag

Kneipbrød

(1) ❑ Aldri
(2) ❑ 1 skive per uke
(3) ❑ 2-4 skiver per uke
(4) ❑ 5-7 skiver per uke
(5) ❑ 2-3 skiver per dag
(6) ❑ Mer enn 3 skiver per dag

Grovbrød

F.eks. grovbrød, fiberbrød, grove rundstykker

(1) ❑ Aldri
(2) ❑ 1 skive per uke
(3) ❑ 2-4 skiver per uke
(4) ❑ 5-7 skiver per uke
(5) ❑ 2-3 skiver per dag
(6) ❑ Mer enn 3 skiver per dag

Loff

F.eks. baguette, pitabrød, spiralloff, fine rundstykker

(1) ❑ Aldri
(2) ❑ 1 skive per uke
(3) ❑ 2-4 skiver per uke
(4) ❑ 5-7 skiver per uke
(5) ❑ 2-3 skiver per dag
(6) ❑ Mer enn 3 skiver per dag

Knekkebrød

(1) ❑ Aldri
(2) ❑ 1 stykk per måned
(3) ❑ 2-4 stykk per uke
(4) ❑ 5-7 stykk per uke
(5) ❑ 2-3 stykk per dag
(6) ❑ Mer enn 3 stykk per dag

Hvor ofte har ditt barn brukt smør eller tilsvarende på brødskiven?

F.eks. Tine Smør, Bremykt

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 gang per dag
(7) ❑ 2-4 ganger per dag
(8) ❑ Mer enn 4 ganger per dag

Hvor ofte har ditt barn brukt margarin eller tilsvarende på brødskiven?

F.eks Vita, Soft Flora, Brelett

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 gang per dag
(7) ❑ 2-4 ganger per dag
(8) ❑ Mer enn 4 ganger per dag

PÅLEGG

På hvor mange brødskiver har ditt barn spist?

Gulost

F.eks Norvegia, Synnøve Finden Gulost, Gräddeost

(1) ❑ 0
(2) ❑ 1 brødskive per uke
(3) ❑ 2-3 brødskiver per uke

(4) ❑ 4-6 brødskiver per uke

(5) ❑ 1 brødskive per dag

(6) ❑ 2-3 brødskiver per dag

(7) ❑ Mer enn 3 brødskiver per dag

Brunost og prim

F.eks. Gudbrandsdalsost, Synnøve Finden brunost, Fløtemysost, Tine Prim

(1) ❑ 0

(2) ❑ 1 brødskive per uke

(3) ❑ 2-3 brødskiver per uke

(4) ❑ 4-6 brødskiver per uke

(5) ❑ 1 brødskive per dag

(6) ❑ 2-3 brødskiver per dag

(7) ❑ Mer enn 3 brødskiver per dag

Smøreost

F.eks. Skinkeost, Philadelphia, ost på tube, Tine kremost, Snøfrisk

(1) ❑ 0

(2) ❑ 1 brødskive per uke

(3) ❑ 2-3 brødskiver per uke

(4) ❑ 4-6 brødskiver per uke

(5) ❑ 1 brødskive per dag

(6) ❑ 2-3 brødskiver per dag

(7) ❑ Mer enn 3 brødskiver per dag

Skinke, roastbeef, hamburgerrygg

(1) ❑ 0

(2) ❑ 1 brødskive per uke

(3) ❑ 2-3 brødskiver per uke

(4) ❑ 4-6 brødskiver per uke

(5) ❑ 1 brødskive per dag

(6) ❑ 2-3 brødskiver per dag

(7) ❑ Mer enn 3 brødskiver per dag

Leverpostei

F.eks ovsnbakt leverpostei, baconpostei, kyllingleverpostei

(1) ❑ 0

(2) ❑ 1 brødskive per uke

(3) ❑ 2-3 brødskiver per uke

(4) ❑ 4-6 brødskiver per uke

(5) ❑ 1 brødskive per dag

(6) ❑ 2-3 brødskiver per dag

(7) ❑ Mer enn 3 brødskiver per dag

Salami, servelat o.l.

(1) ❑ 0

(2) ❑ 1 brødskive per uke

(3) ❑ 2-3 brødskiver per uke

(4) ❑ 4-6 brødskiver per uke

(5) ❑ 1 brødskive per dag

(6) ❑ 2-3 brødskiver per dag

(7) ❑ Mer enn 3 brødskiver per dag

Kylling- eller kalkunpålegg

(1) ❑ 0
(2) ❑ 1 brødskive per uke
(3) ❑ 2-3 brødskiver per uke
(4) ❑ 4-6 brødskiver per uke
(5) ❑ 1 brødskive per uke
(6) ❑ 2-3 brødskiver per dag
(7) ❑ Mer enn 3 brødskiver per dag

Majonessalat: Italiensk salat eller rekesalat o.l.

(1) ❑ 0
(2) ❑ 1 brødskive per uke
(3) ❑ 2-3 brødskiver per uke
(4) ❑ 4-6 brødskiver per uke
(5) ❑ 1 brødskive per dag
(6) ❑ 2-3 brødskiver per dag
(7) ❑ Mer enn 3 brødskiver per dag

Egg på brødskive

Kokt, stekt, speilegg, eggerøre

(1) ❑ 0
(2) ❑ 1 brødskive per uke
(3) ❑ 2-3 brødskiver per uke
(4) ❑ 4-6 brødskiver per uke
(5) ❑ 1 brødskive per dag
(6) ❑ 2-3 brødskiver per dag
(7) ❑ Mer enn 3 brødskiver per dag

Kaviar

F.eks. Mills kaviar, Stabbur-kaviar

(1) ❑ 0
(2) ❑ 1 brødskive per uke
(3) ❑ 2-3 brødskiver per uke
(4) ❑ 4-6 brødskiver per uke
(5) ❑ 1 brødskive per dag
(6) ❑ 2-3 brødskiver per dag
(7) ❑ Mer enn 3 brødskiver per dag

Fiskepålegg

F.eks. makrell i tomat, tunfisk, sild

(1) ❑ 0
(2) ❑ 1 brødskive per uke
(3) ❑ 2-3 brødskiver per uke
(4) ❑ 4-6 brødskiver per uke
(5) ❑ 1 brødskive per dag
(6) ❑ 2-3 brødskiver per dag
(7) ❑ Mer enn 3 brødskiver per dag

Sjokoladepålegg eller nøttepålegg

F.eks. Nugatti, Sjokonøtt, Milky-Way

(1) ❑ 0
(2) ❑ 1 brødskive per uke
(3) ❑ 2-3 brødskiver per uke
(4) ❑ 4-6 brødskiver per uke
(5) ❑ 1 brødskive per dag
(6) ❑ 2-3 brødskiver per dag
(7) ❑ Mer enn 3 brødskiver per dag

Hapå, Banos

(1) ❑ 0
(2) ❑ 1 brødskive per uke
(3) ❑ 2-3 brødskiver per uke
(4) ❑ 4-6 brødskiver per uke
(5) ❑ 1 brødskive per dag
(6) ❑ 2-3 brødskiver per dag
(7) ❑ Mer enn 3 brødskiver per dag

Syltetøy

(1) ❑ 0
(2) ❑ 1 brødskive per uke
(3) ❑ 2-3 brødskiver per uke
(4) ❑ 4-6 brødskiver per uke
(5) ❑ 1 brødskive per dag
(6) ❑ 2-3 brødskiver per dag
(7) ❑ Mer enn 3 brødskiver per dag

Honning

(1) ❑ 0

(2) ❑ 1 brødskive per uke

(3) ❑ 2-3 brødskiver per uke

(4) ❑ 4-6 brødskiver per uke

(5) ❑ 1 brødskive per dag

(6) ❑ 2-3 brødskiver per dag

(7) ❑ Mer enn 3 brødskiver per dag

Peanøttsmør

(1) ❑ 0
(2) ❑ 1 brødskive per uke
(3) ❑ 2-3 brødskiver per uke
(4) ❑ 4-6 brødskiver per uke
(5) ❑ 1 brødskive per uke
(6) ❑ 2-3 brødskiver per dag
(7) ❑ Mer enn 3 brødskiver per dag

HOVEDRETTER- MIDDAG

Hvor ofte har ditt barn spist?

Kjøttkaker/karbonader

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Pølser

F.eks. Wienerpølser, grillpølser, ostepølse

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Svinekjøtt, oksekjøtt, lammekjøtt

F.eks kotelett, stek, biff

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Taco (tacoskjell eller wraps med kjøttdeig)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Hamburgere

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Pizza

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Gryteretter

F.eks. risotto, lapskaus, gryterett med kjøtt

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Pastaretter med kjøtt

F.eks. lasagne, spaghetti med kjøttsaus

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Kylling eller kalkun

F.eks grillet, filét, kyllinglår

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Kyllingnuggets

F.eks. Prior Nuggets

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Kyllingburger

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Egg, stekt, speilegg eller omelett

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Pai med kjøtt eller grønnsaker

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned

(3) ❑ 1 gang per uke

(4) ❑ 2-4 ganger per uke

(5) ❑ Mer enn 4 ganger per uke

Fet fisk

F.eks laks, ørret, makrell (både kokt eller stekt)

(1) ❑ Aldri

(2) ❑ 1-3 ganger per måned

(3) ❑ 1 gang per uke

(4) ❑ 2-4 ganger per uke

(5) ❑ Mer enn 4 ganger per uke

Mager fisk

F.eks torsk, sei (både kokt eller stekt)

(1) ❑ Aldri

(2) ❑ 1-3 ganger per måned

(3) ❑ 1 gang per uke

(4) ❑ 2-4 ganger per uke

(5) ❑ Mer enn 4 ganger per uke

Fiskeprodukter

F.eks fiskeboller, fiskekaker, fiskepudding, fiskepinner

(1) ❑ Aldri

(2) ❑ 1-3 ganger per måned

(3) ❑ 1 gang per uke

(4) ❑ 2-4 ganger per uke

(5) ❑ Mer enn 4 ganger per uke

Retter med bønner, linser eller erter

F.eks falafell, hummus, bønnegryte, linsesuppe

(1) ❑ Aldri

(2) ❑ 1-3 ganger per måned

(3) ❑ 1 gang per uke

(4) ❑ 2-4 ganger per uke

(5) ❑ Mer enn 4 ganger per uke

Suppe

F.eks tomatsuppe, grønnsakssuppe

(1) ❑ Aldri

(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Pannekaker

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Risensynsgrøt

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

TILBEHØR TIL MIDDAG

Hvor ofte har ditt barn spist?

Poteter, kokt, most

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Pommes frites

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-4 ganger per uke
(5) ❑ Mer enn 4 ganger per uke

Potetsalat eller gratinerte poteter

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke

(4) ❑ 2-4 ganger per uke

(5) ❑ Mer enn 4 ganger per uke

Stekte poteter

(1) ❑ Aldri

(2) ❑ 1-3 ganger per måned

(3) ❑ 1 gang per uke

(4) ❑ 2-4 ganger per uke

(5) ❑ Mer enn 4 ganger per uke

Ris

(1) ❑ Aldri

(2) ❑ 1-3 ganger per måned

(3) ❑ 1 gang per uke uke

(4) ❑ 2-4 ganger per uke

(5) ❑ Mer enn 4 ganger per uke

Nudler/pasta/spaghetti

(1) ❑ Aldri

(2) ❑ 1-3 ganger per måned

(3) ❑ 1 gang per uke

(4) ❑ 2-4 ganger per uke

(5) ❑ Mer enn 4 ganger per uke

Saus

F.eks brun saus, hvit saus, bernaisesaus

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Rømme eller creme fraiche

F.eks dip

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Dressing

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Ketchup

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Sennep

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Majones eller remulade

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Hvor mange teskjeer med sukker tilsetter du i grøt/pannekaker?

(1) ❑ Ingen
(2) ❑ 1-3 teskjeer per måned
(3) ❑ 1 teskje per uke
(4) ❑ 2-3 teskjeer per uke
(5) ❑ 4-6 teskjeer per uke
(6) ❑ 1 teskje eller flere per dag

Hvor ofte salter du maten?

F.eks. tilsatt ekstra salt selv til middag

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

FRUKT OG GRØNNSAKER

Hvor ofte har ditt barn spist?

Epler (1 eple)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Pære (1 pære)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Banan (1 banan)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Appelsin, mandarin, grapefrukt (1/2- 1 appelsin/madarin/grapefrukt)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Nektarin, fersken eller plomme (1 nektarin/fersken/plomme)

(1) ❑ Aldri

(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Melon (1 skive)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Kiwi (1 kiwi)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Ananas (1 skive)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Bær, friske eller frosne (1 bolle)

F.eks jordbær, blåbær, solbær, bringebær

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Druer (1 neve)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Rosiner (1/2 neve)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Tørket frukt (1/2 neve)

F.eks aprikos, svisker, dadler

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Brokkoli (2 buketter)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Blomkål (2 buketter)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Løk, hvitløk eller purre (1 spiseskje)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Avokado (1/2 avokado)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Mais (1/2 kolbe= 2 spiseskjeer)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Sopp (1 spiseskje)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Erter (1 spiseskje)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Blandet salat (1 porsjon)

F.eks isbergsalat/hjertesalat/rosso-salat med tomat og agurk

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Spinat (2 spiseskjeer)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Grønn, gul, orange eller rød paprika (1 ring)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Gulrøtter (1 gulrot)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Agurk (ca.4-5 cm)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Tomat (1 tomat)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Andre grønnsaker

Skriv under hva slags grønnsak

(1) ❑ Hva: _____
(3) ❑ 1-3 ganger per måned
(4) ❑ 1 gang per uke
(5) ❑ 2-3 ganger per uke
(6) ❑ 4-6 ganger per uke
(7) ❑ 1 eller flere ganger per dag

DESSERT OG KAKER

Hvor ofte har ditt barn spist?

Fløteis (1 kule eller pinne)

F.eks vanilje, krokan, jordbær

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Saftis (1 pinne)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Pudding og fromasj (1 beger)

F.eks sjokoladepudding, mandelpudding, karamellpudding, sitronfromasj

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned

(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Rislunsj og riskrem (1 beger)

F.eks rislunsj, risifrutti, pianodessert

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Hvor ofte har ditt barn spist?

Gelé (1 porsjon)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Hermetisk frukt (1 porsjon)

F.eks hermetiske aprikoser, pærer, ananas, cocktailblanding

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Pai (1 stykke)

F.eks eplepai, blåbærpai, sjokoladepai

(1) ❑ Aldri

(2) ❑ 1-3 ganger per måned

(3) ❑ 1 gang per uke

(4) ❑ 2-3 ganger per uke

(5) ❑ 4-6 ganger per uke

(6) ❑ 1 eller flere ganger per dag

Fløte, krem (1/2 kopp)

F.eks som tilbehør til jordbær, til kake, varm sjokolade

(1) ❑ Aldri

(2) ❑ 1-3 ganger per måned

(3) ❑ 1 gang per uke

(4) ❑ 2-3 ganger per uke

(5) ❑ 4-6 ganger per uke

(6) ❑ 1 eller flere ganger per dag

Vaniljesaus (1/2 kopp)

F.eks som tilbehør til sjokoladepudding, varme bær

(1) ❑ Aldri

(2) ❑ 1-3 ganger per måned

(3) ❑ 1 gang per uke

(4) ❑ 2-3 ganger per uke

(5) ❑ 4-6 ganger per uke

(6) ❑ 1 eller flere ganger per dag

Wienerbrød (1 stykke)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Kake (1 stykke)

F.eks bløtekake, brownie eller sjokoladekake

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Småkaker (1 kjeks)

F.eks cookies

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

SNACKS

Hvor ofte har ditt barn spist?

Chips, potetgull (1 liten pose)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Tortilla chips (1/2 pose)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Popcorn (1/2 pose)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Nøtter (1 neve)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Saltstenger (1 neve)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Blandet godteri, smågodt (1 neve)

F.eks vingummi, sukkertøy, lakris, karameller

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Kokosboller (1 stykk)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Sjokolade

1 liten plate á 43 g (f.eks Freia Ego) eller plate á 100g (f.eks Freia melkesjokolade, firkløver)

	Plate på 43 g	**Plate på 100g**
Aldri	(1) ❑	(2) ❑
1-3 ganger per måned	(1) ❑	(2) ❑
1 gang per uke	(1) ❑	(2) ❑
2-3 ganger per uke	(1) ❑	(2) ❑
4-6 ganger per uke	(1) ❑	(2) ❑
1 eller flere ganger per uke	(1) ❑	(2) ❑

Sjokoladebar (1 stykk)

F.eks Mars, Snickers, Japp

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Mørk sjokolade (1/4 plate)

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

MÅLTIDSVANER

Hvor mange ganger i uken spiser ditt barn frokost, lunsj, middag og kveldsmat

(hverdager og helg)

	Aldri eller nesten aldri	1-2 ganger per uke	3-4 ganger per uke	5-6 ganger per uke	Hver dag
Frokost	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Lunsj	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Middag	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Kveldsmat	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑

Hvor ofte spiser ditt barn følgende måltider mens han/hun ser på skjerm, f.eks TV, nettbrett, mobil osv. (kryss av for ett felt i hver linje)

	Aldri	1-2 ganger per uke	3-4 ganger per uke	5-6 ganger per uke	Hver dag
Frokost	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Lunsj	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Middag	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Kveldsmat	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑

Hvor ofte spiser ditt barn frokost eller middag sammen med familien?

(1) ❑ Aldri eller nesten aldri

(2) ❑ 1-2 ganger hver uke

(3) ❑ 3-4 ganger hver uke

(4) ❑ 5-6 ganger hver uke

(5) ❑ Hver dag

Hvor får ditt barn sin lunsj fra på skoledager?

(1) ❑ Tar matpakke med hjemmefra

(2) ❑ Kjøper på skolen

(3) ❑ Kjøper utenfor skolen

(4) ❑ Spiser ikke lunsj

Hvor ofte spiser ditt barn noe fra en "take away" restaurant?

F.eks pizzeria

(1) ❑ Aldri

(2) ❑ 1-3 ganger per måned

(3) ❑ 1 gang per uke

(4) ❑ 2-3 ganger per uke

(5) ❑ 4-6 ganger per uke

(6) ❑ 1 eller flere ganger per dag

Hvor ofte spiser ditt barn noe fra en fast food restaurant?

F.eks Mc Donalds, Burger King, bensinstasjon

(1) ❑ Aldri
(2) ❑ 1-3 ganger per måned
(3) ❑ 1 gang per uke
(4) ❑ 2-3 ganger per uke
(5) ❑ 4-6 ganger per uke
(6) ❑ 1 eller flere ganger per dag

Hvor ofte har ditt barn tatt følgende?

	Aldri	1-2 ganger per måned	3-5 ganger per måned	1-2 ganger per uke	3 eller flere ganger per uke
Tran eller andre flytende omega-3 tilskudd (1 spiseskje)	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Tran- eller fiskeoljekapsler	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Multivitamintilskudd (eks. Nycoplus, Sana Sol, vitaminbjørner)	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Multivitaminer med mineraler	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Jerntabletter	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Vitamin C	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Vitamin D	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑

Annet

Har ditt barn tatt noe annet kosttilskudd enn det som står nevnt overfor? Hvis ja: hva og hvor ofte?

_____
_____
_____
_____
_____

Har ditt barn noen former for matvareallergi?

(1) ❑ Ja
(2) ❑ Nei

Hvilken?

(1) ❑ Melk
(2) ❑ Egg
(3) ❑ Nøtter
(4) ❑ Skalldyr
(5) ❑ Annet _____

Er det noe barnet ditt unngår å spise?
Hvis ja, hva og hvorfor

(1) ❑ Ja _____
(2) ❑ Nei

Er den siste måneden typisk for hva ditt barn pleier å spise til vanlig? Hvis nei, hvorfor?

(1) ❑ Ja
(2) ❑ Nei _____

De neste spørsmålene dreier seg om tilgjengelighet av enkelte matvarer i hjemmet (der barnet bor det meste av tiden)

Hvor ofte finnes det brus MED sukker tilgjengelig i hjemmet?

(1) ❑ Aldri
(2) ❑ Sjeldnere enn 1 dag i måneden
(3) ❑ Sjeldnere enn 1 dag i uken
(4) ❑ 1 dag i uken
(5) ❑ 2 dager i uken
(6) ❑ 3 dager i uken
(7) ❑ 4 dager i uken
(8) ❑ 5 dager i uken
(9) ❑ 6 dager i uken
(10) ❑ Alltid/hver dag

Hvor ofte finnes det brus UTEN sukker tilgjengelig i hjemmet?

(1) ❑ Aldri
(2) ❑ Sjeldnere enn 1 dag i måneden
(3) ❑ Sjeldnere enn 1 dag i uken
(4) ❑ 1 dag i uken
(5) ❑ 2 dager i uken
(6) ❑ 3 dager i uken

(7) ❑ 4 dager i uken
(8) ❑ 5 dager i uken
(9) ❑ 6 dager i uken
(10) ❑ Alltid/hver dag

Hvor ofte finnes det søt snacks tilgjengelig i hjemmet? (godteri, iskrem, kaker, kjeks, boller, osv.)

(1) ❑ Aldri
(2) ❑ Sjeldnere enn 1 dag i måneden
(3) ❑ Sjeldnere enn 1 dag i uken
(4) ❑ 1 dag i uken
(5) ❑ 2 dager i uken
(6) ❑ 3 dager i uken
(7) ❑ 4 dager i uken
(8) ❑ 5 dager i uken
(9) ❑ 6 dager i uken
(10) ❑ Alltid/hver dag

Hvor ofte finnes det salt snacks tilgjengelig i hjemmet? (potetgull, maischips/doritos, ostepop, osv.)

(1) ❑ Aldri
(2) ❑ Sjeldnere enn 1 dag i måneden
(3) ❑ Sjeldnere enn 1 dag i uken
(4) ❑ 1 dag i uken
(5) ❑ 2 dager i uken
(6) ❑ 3 dager i uken
(7) ❑ 4 dager i uken
(8) ❑ 5 dager i uken
(9) ❑ 6 dager i uken
(10) ❑ Alltid/hver dag

Hvor ofte finnes det frukt eller grønnsaker tilgjengelig i hjemmet?

(1) ❑ Aldri
(2) ❑ Sjeldnere enn 1 dag i måneden
(3) ❑ Sjeldnere enn 1 dag i uken
(4) ❑ 1 dag i uken
(5) ❑ 2 dager i uken
(6) ❑ 3 dager i uken
(7) ❑ 4 dager i uken
(8) ❑ 5 dager i uken
(9) ❑ 6 dager i uken
(10) ❑ Alltid/hver dag

De neste spørsmålene dreier seg om årsaker til at du og din familie vil endre levevaner.

Det er forskjellige grunner til at mennesker gjør som de gjør. Følgende påstander handler om grunner for deg og din familie til å begynne å endre levevaner (for eksempel spise sunt, være mer fysisk aktiv) eller fastholde endrede levevaner over tid. Kryss av fra 1-7 for disse påstandene.

Grunner til at meg og min familie ønsker å endre eller fastholde endrede levevaner er:

	1 Stemmer aldri	2	3	4 Stemmer av og til	5	6	7 Stemmer alltid
Jeg ønsker å ta ansvaret for min families helse	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Jeg ville føle skyld eller skam hvis vi ikke hadde sunne levevaner	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Jeg personlig tror det er det beste for helsen til familien min	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Fordi andre vil bli skuffet over meg hvis jeg ikke gjør det	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

	1 Stemmer aldri	2	3	4 Stemmer av og til	5	6	7 Stemmer alltid
Jeg tenker ikke så mye på det	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Fordi jeg har tenkt grundig gjennom det og tror det er viktig for mange sider ved livet mitt	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Fordi jeg ville få dårlig samvittighet hvis vi ikke levde sunt	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Fordi det er et viktig valg jeg ønsker å ta	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Fordi jeg føler meg presset av andre til å gjøre det	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Fordi det er lettere å gjøre som jeg blir fortalt enn å finne det ut selv	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Fordi det passer med mine mål her i livet	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Fordi jeg ønsker å bli godtatt av andre	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Fordi det er veldig viktig for meg at familien lever så sunt som mulig	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Fordi jeg ønsker at andre skal se at vi greier det	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑
Jeg vet ikke hvorfor jeg gjør det	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑	(6) ❑	(7) ❑

TUSEN TAKK FOR AT DU DELTOK! :)

Appendix 2

Hei!

Takk for at du vil være med på denne undersøkelsen!

Din og ditt barns deltagelse er viktig for oss, og det er veldig fint hvis du kan fylle ut dette spørreskjemaet nøyaktig.

Til å begynne med stiller vi et par spørsmål om deg.

Etter det vil vi gjerne at du tenker tilbake på de siste 4 ukene og vi vil spørre deg om følgende:

- Hvor aktivt barnet ditt har vært de siste 4 ukene
- Hva har barnet ditt spist og drukket de siste 4 ukene
- Måltidsvaner

Du skal sette kryss ved det svaret som passer best for ditt barn. Det er viktig at du leser spørsmålet og svaralternativene nøye og at du husker å bare sette ETT KRYSS for hvert spørsmål.

Dersom det er noe du lurer på kan du spørre en av våre medarbeidere om hjelp.

Husk dette før du setter i gang: Vær ærlig! Det er ingen svar som er mer riktige enn andre, og ingen får vite hva du har svart.

Lykke til med skjemaet!

Hva er ditt ID nummer?

_____

Dato for utfylling av spørreskjema:

_____

VI VIL GJERNE VITE NOE OM DEG OG DITT BARN

Spørreskjemaet besvares av

(1) ❑ Mor
(2) ❑ Stemor
(3) ❑ Far
(4) ❑ Stefar
(5) ❑ Annen

Hvilken utdanning er den høyeste du har fullført (vennligst svar for både deg og din ektefelle/partner)

	Jeg	Ektefelle/partner	Har ikke ektefelle/partner
Mindre enn 7 år grunnskole	(1) ❑	(2) ❑	(3) ❑
Grunnskole, 7-10 år	(1) ❑	(2) ❑	(3) ❑
Yrkesskole, 1-2 årig videregående skole	(1) ❑	(2) ❑	(3) ❑
3 årig Videregående skole	(1) ❑	(2) ❑	(3) ❑
Høgskole/universitet, mindre enn 4 år	(1) ❑	(2) ❑	(3) ❑
Høgskole/universitet, 4 år eller mer	(1) ❑	(2) ❑	(3) ❑

Hva er din hovedaktivitet (vennligst svar for både deg og din ektefelle/partner)

	Jeg	Ektefelle/partner	Jeg har ikke ektefelle/partner
Yrkesaktiv heltid	(1) ❑	(2) ❑	(3) ❑
Yrkesaktiv deltid	(1) ❑	(2) ❑	(3) ❑
Arbeidsledig	(1) ❑	(2) ❑	(3) ❑
Hjemmeværende	(1) ❑	(2) ❑	(3) ❑
Pensjonist/trygdet	(1) ❑	(2) ❑	(3) ❑
Student	(1) ❑	(2) ❑	(3) ❑

Er ditt barn?

(1) ❑ Jente

(2) ❑ Gutt

Hva er alderen til ditt barn?

(år)

—

Hvilke voksne bor barnet ditt sammen med?

(1) ❑ Både sin mor og far hele tiden

(8) ❑ Omtrent like mye hos sin mor og far

(2) ❑ Bare sin mor

(3) ❑ Bare sin far

(4) ❑ Sin mor og hennes nye partner

(5) ❑ Sin far og hans nye partner

(6) ❑ Besteforeldre

(7) ❑ Andre voksne

De neste spørsmålene dreier seg om tilgjengelighet av enkelte matvarer i hjemmet (der barnet bor det meste av tiden)

Hvor ofte finnes det brus MED sukker tilgjengelig i hjemmet?

(1) ❑ Aldri

(2) ❑ Sjeldnere enn 1 dag i måneden

(3) ❑ Sjeldnere enn 1 dag i uken

(4) ❑ 1 dag i uken

(5) ❑ 2 dager i uken

(6) ❑ 3 dager i uken

(7) ❑ 4 dager i uken

(8) ❑ 5 dager i uken
(9) ❑ 6 dager i uken
(10) ❑ Alltid/hver dag

Hvor ofte finnes det brus UTEN sukker tilgjengelig i hjemmet?

(1) ❑ Aldri
(2) ❑ Sjeldnere enn 1 dag i måneden
(3) ❑ Sjeldnere enn 1 dag i uken
(4) ❑ 1 dag i uken
(5) ❑ 2 dager i uken
(6) ❑ 3 dager i uken
(7) ❑ 4 dager i uken
(8) ❑ 5 dager i uken
(9) ❑ 6 dager i uken
(10) ❑ Alltid/hver dag

Hvor ofte finnes det søt snacks tilgjengelig i hjemmet? (godteri, iskrem, kaker, kjeks, boller, osv.)

(1) ❑ Aldri
(2) ❑ Sjeldnere enn 1 dag i måneden
(3) ❑ Sjeldnere enn 1 dag i uken
(4) ❑ 1 dag i uken
(5) ❑ 2 dager i uken
(6) ❑ 3 dager i uken
(7) ❑ 4 dager i uken
(8) ❑ 5 dager i uken
(9) ❑ 6 dager i uken
(10) ❑ Alltid/hver dag

Hvor ofte finnes det salt snacks tilgjengelig i hjemmet? (potetgull, maischips/doritos, ostepop, osv.)

(1) ❑ Aldri
(2) ❑ Sjeldnere enn 1 dag i måneden
(3) ❑ Sjeldnere enn 1 dag i uken
(4) ❑ 1 dag i uken
(5) ❑ 2 dager i uken
(6) ❑ 3 dager i uken
(7) ❑ 4 dager i uken
(8) ❑ 5 dager i uken

(9) ❑ 6 dager i uken

(10) ❑ Alltid/hver dag

Hvor ofte finnes det frukt eller grønnsaker tilgjengelig i hjemmet?

(1) ❑ Aldri

(2) ❑ Sjeldnere enn 1 dag i måneden

(3) ❑ Sjeldnere enn 1 dag i uken

(4) ❑ 1 dag i uken

(5) ❑ 2 dager i uken

(6) ❑ 3 dager i uken

(7) ❑ 4 dager i uken

(8) ❑ 5 dager i uken

(9) ❑ 6 dager i uken

(10) ❑ Alltid/hver dag

TUSEN TAKK FOR AT DU DELTOK! :)

Appendix 3

Forespørsel om deltakelse i et forskningsprosjekt

”Helsefremming ved Frisklivssentralene – virker det, hvordan virker det og hvorfor?”

Bakgrunn og hensikt

Dette er et spørsmål til deg som foresatt til et barn som deltar i kommunens gruppetilbud til barn med begynnende overvekt der det er ønskelig å endre levevaner. Dette gruppetilbudet er del av et forskningsprosjekt der vi ønsker å undersøke nytten av tiltaket. Universitetet i Bergen som er ansvarlig for forskningsprosjektet, samarbeider med Universitetet i Agder, Haukeland Universitetssykehus og flere Frisklivssentraler om undersøkelsen.

Hva innebærer studien?

Som deltaker i forskningsprosjektet ber vi deg om å delta på et intervju sammen med en helsearbeider, at barnet ditt svarer på noen enkle spørsmål og gjennomfører noen enkle fysiske tester og at du som foresatt besvarer et spørreskjema som kartlegger deres levevaner før prosjektstart, og etter henholdsvis 6, 12 og 24 måneder for å kunne gi dere et best mulig oppfølging underveis og etter avslutning av prosjektet. En del av kartleggingen innebærer at barnet deres vil bære en aktivitetsmåler rundt armen i én uke, og resten av familien inviteres også til å bære dette samtidig. Denne aktivitetsmåleren skal ikke skape ubehag eller være synlig under vanlige klær. Spørreskjemaet tar ca. 20-30 minutter å besvare, og kan fylles ut via internett hjemme.

Hva skjer med informasjonen om barnet?

Informasjonen som registreres om deg og ditt barn skal dere få tilbakemelding på av en helsearbeider i prosjektet, og informasjonen skal også kunne brukes som grunnlag for å skreddersy veiledningen til deres familie. Alle opplysninger blir behandlet uten navn og

fødselsnummer eller andre direkte gjenkjennende opplysninger. En kode knytter ditt barn til opplysninger og tester gjennom en navneliste. Det er kun autorisert personell knyttet til prosjektet som har adgang til navnelisten og som kan finne tilbake til barnet. All informasjon vil bli slettet når undersøkelsen er ferdig. Det vil ikke være mulig å identifisere barnet når resultatene av studien publiseres.

Frivillig deltakelse

Det er frivillig å delta i studien. Du kan når som helst og uten å oppgi noen grunn trekke samtykke til at ditt barn deltar. Dette vil ikke få konsekvenser for barnets videre behandling. Dersom du ønsker at ditt barn skal delta, undertegner du samtykkeerklæringen på neste side. Om du nå sier ja til at barnet deltar, kan du seinere trekke tilbake samtykke uten at det påvirker barnets øvrige tilbud. Dersom du senere ønsker å trekke barnet eller har spørsmål til studien, kan du kontakte Eirik Abildsnes på telefon 90744480 eller Tonje Holte Stea på telefon 41102641.

Samtykke til deltakelse i studien

Jeg er villig til å delta i studien.

(Signert av foresatte til barnet, dato)

Jeg bekrefter å ha gitt informasjon om studien til foresatte.

(Signert, forskningsprosjektmedarbeider, dato)

Appendix 4

Forespørsel om deltagelse i et forskningsprosjekt.

Spørreskjema om levevaner.

Bakgrunn og hensikt

Dette er en henvendelse til foresatte til barn 6-12 år i Søgne.

Bakgrunn for denne spørreundersøkelsen er å kvalitetssikre spørsmål knyttet til fysisk aktivitet, måltidsrutiner og inntak av mat og drikke som vi planlegger å benytte for å vurdere effekten av et forskningsprosjekt med målsetning om å fremme sunne levevaner blant barn, 6-12 år.

Hva innebærer det å svare på spørreskjemaet?

Spørsmålene vil bli sendt på mail og du besvarer spørsmålene på data. Etter 14. dager vil du motta en ny mail, der du på nytt vil bli bedt om å svare på de samme spørsmålene. Det vil ta ca. 10 minutter å svare på spørsmålene hver gang.

Dersom dere takker ja til deltagelse vil helsesøster ved ditt barns skole gi meg din mailadresse slik at jeg kan oversende aktuelle spørreskjema, samt at hun vil veie og måle barnet. Opplysningene om barnet knyttes opp mot spørreskjema ved hjelp av en kode for å sikre anonymitet.

Hva skjer med informasjonen?

Alle opplysninger blir behandlet uten navn og fødselsnummer eller andre direkte gjenkjennende opplysninger. En kode knytter ditt barn til opplysningene gjennom en navneliste. Det er kun autorisert personell knyttet til prosjektet som har tilgang til opplysningene.

Opplysningene vil kun brukes i dette studiet og all informasjon vil bli slettet når undersøkelsen er ferdig. Det vil ikke være mulig å identifisere deg eller barnet når resultatene av studien publiseres.

Frivillig deltagelse

Det er frivillig å delta i studien. Du kan når som helst og uten begrunnelse trekke deg fra deltagelsen. Dersom du ønsker og delta i denne spørreundersøkelsen, samt at helsesøster veier og måler ditt barn, undertegner du samtykkeerklæringen på baksiden av arket og returnerer denne til helsesøster.

Tonje Holte Stea
Førsteamanuensis, Universitetet i Agder
E-post: tonje.h.stea@uia.no

Samtykke til å delta i studien

Jeg er villig til å delta i studien.

(Signert av foresatte til barnet, dato)

Jeg bekrefter at jeg har gitt informasjon om studien til foresatte.

(Signert, helsesøster, dato)

Appendix 5

REK
REGIONALE KOMITEER FOR MEDISINSK OG HELSEFAGLIG FORSKNINGSETIKK

Region:	Saksbehandler:	Telefon:	Vår dato:	Vår referanse:
REK vest	Anne Berit Kolmannskog	55978496	04.09.2013	2013/1291/REK vest
			Deres dato:	**Deres referanse:**
			25.06.2013	

Vår referanse må oppgis ved alle henvendelser

Eivind Meland
Universitetet i Bergen

2013/1291 Helsefremmende arbeid i Frisklivssentraler - virker det, hvordan virker det og hvorfor?

Forskningsansvarlig: Universitetet i Bergen
Prosjektleder: Eivind Meland

Vi viser til søknad om forhåndsgodkjenning av ovennevnte forskningsprosjekt. Søknaden ble behandlet av Regional komité for medisinsk og helsefaglig forskningsetikk (REK vest) i møtet 15.08.2013. Vurderingen er gjort med hjemmel i helseforskningsloven (hfl.) § 10, jf. forskningsetikklovens § 4.

Prosjektomtale
Helsedirektoratet anbefaler etablering av frisklivssentraler i alle landets kommuner og beskriver frisklivssentralenes rolle slik: «- Skal primært gi tilbud om hjelp til endring av levevaner – hvordan få til dette i praksis og skape mestringsopplevelser». Formålet med denne studien er å undersøke hvilken nytte deltakerne har av disse tilbudene og om de endrer sine levevaner over tid, for eksempel spiser sunnere eller er mer fysisk aktiv. Studien ser nærmere på tilbudet som gis til overvektige barn og deres familier og til overvektige voksne med tilleggsrisikofaktorer. Universitetet i Bergen er ansvarlig for studien og samarbeider med Universitetet i Agder, Haukeland Universitetssykehus og flere Frisklivssentraler. Studien har fire delprosjekt som i søknaden er beskrevet slik:
1. En randomisert klinisk kontrollert studie av voksne deltagere som får kostholdsopplæring og deltar i fysisk aktivitet som deltagere i en av flere samarbeidende frisklivssentraler. Deltagerne randomiseres til en gruppe som må vente ett halvt år på tilbudet og en gruppe som får tilbudet umiddelbart.
2. En klyngerandomisert kontrollert studie blant barn og foreldre/ pårørende der bevegelse, deltagelse og kost er kjerneelementer i intervensjonen.
3. Kvalitative intervjustudier blant deltagere i frisklivstilbudet og ansatte i frisklivssentralene. Intervensjonene bygger på en økologisk helseforståelse som fordrer dialog og endring lokalt ved sentralene. De kvalitative studiene inngår i utviklingen av tjenestetilbudet.
4. Lokale kvalitetsfremmende studier basert på anonymiserte rutinedata ved de forskjellige frisklivssentralene. Slike data vil ansatte lokalt kunne bruke til dokumentasjon, kvalitetssikring og kvalitetsforbedring.

Vurdering
På oppfordring fra Helsedirektoratet er det etablert frisklivsentraler mange steder i Norge. Kunnskap om hvordan disse tilbudene oppleves og virker er viktig for den fremtidige driften. Siden disse tilbudene er i en etableringsfase vil mye av kunnskapsgrunnlaget endres over tid. Komiteen mener likevel de fire delstudiene er forsvarlig lagt opp og har ingen innvendinger til den fremlagte protokollen.

Barn under 16 år
Delstudie 2 inkluderer barn mellom seks og åtte år. For denne aldersgruppen skal foresatte samtykke til

Besøksadresse:
Haukeland Universitetssykehus, Sentralblokken, 2. etg, Rom 4617

Telefon: 55975000
E-post: rek-vest@uib.no
Web: http://helseforskning.etikkom.no/

deltakelse på barnets vegne. I søknaden er det opplyst at deltakelse vil innebærer noen «enkle fysiske tester som kartlegger situasjonen ved start, etter tilbudets avslutning og etter 12 og 24 måneder». Ingen av prosedyrene som benyttes involverer risiko eller ubehag for barnet, men komiteen vil likevel minne om at barna skal respekteres dersom de viser motvilje mot å delta i disse testene.

Rekruttering og samtykke
Studien er samtykkebasert og informasjonsskrivet gir en nøytral og oversiktlig beskrivelse av prosjektet. Rekruteringsprosedyrene synes forsvarlig lagt opp.

Informasjonssikkerhet
Forskningsdata skal lagres i samsvar med Universitetet i Bergen sine interne retningslinjer for sikker datalagring. Personidentifiserbare forskningsdata skal slettes eller anonymiseres straks det ikke lenger er behov for dem og senest ved prosjektslutt. Ved eventuelt behov for lengre oppbevaring, må det sendes en velbegrunnet endringssøknad til REK. Denne prosjektgodkjenningen gjelder til prosjektslutt satt til 31.12.2017.

Vedtak
REK Vest godkjenner prosjektet i samsvar med forelagt søknad.

Sluttmelding og søknad om prosjektendring
Prosjektleder skal sende sluttmelding til REK vest på eget skjema senest 30.06.2018, jf. hfl. § 12. Prosjektleder skal sende søknad om prosjektendring til REK vest dersom det skal gjøres vesentlige endringer i forhold til de opplysninger som er gitt i søknaden, jf. hfl. § 11.

Klageadgang
Du kan klage på komiteens vedtak, jf. forvaltningslovens § 28 flg. Klagen sendes til REK vest. Klagefristen er tre uker fra du mottar dette brevet. Dersom vedtaket opprettholdes av REK vest, sendes klagen videre til Den nasjonale forskningsetiske komité for medisin og helsefag for endelig vurdering.

Med vennlig hilsen

Ansgar Berg
Komitéleder

Anne Berit Kolmannskog
sekretariatsleder

Kopi til: postmottak@uib.no

Appendix 6

Norsk samfunnsvitenskapelig datatjeneste AS
NORWEGIAN SOCIAL SCIENCE DATA SERVICES

Harald Hårfagres gate 29
N-5007 Bergen
Norway
Tel: +47-55 58 21 17
Fax: +47-55 58 96 50
nsd@nsd.uib.no
www.nsd.uib.no
Org.nr. 985 321 884

Eivind Meland
Institutt for global helse og samfunnsmedisin
Universitetet i Bergen
Postboks 6165
5892 BERGEN

Vår dato: 29.04.2013 Vår ref:34154 / 3 / LMR Deres dato: Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 09.04.2013. Meldingen gjelder prosjektet:

34154	*Promoting health in Healthy Living Centres – does it work, how does it work, and why?*
Behandlingsansvarlig	*Universitetet i Bergen, ved institusjonens øverste leder*
Daglig ansvarlig	*Eivind Meland*

Personvernombudet har vurdert prosjektet, og finner at behandlingen av personopplysninger vil være regulert av § 7-27 i personopplysningsforskriften. Personvernombudet tilrår at prosjektet gjennomføres.

Personvernombudets tilråding forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, http://www.nsd.uib.no/personvern/meldeplikt/skjema.html. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, http://pvo.nsd.no/prosjekt.

Personvernombudet vil ved prosjektets avslutning, 01.01.2016, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Vigdis Namtvedt Kvalheim

Linn-Merethe Rød

Kontaktperson: Linn-Merethe Rød tlf: 55 58 89 11
Vedlegg: Prosjektvurdering

Personvernombudet for forskning

Prosjektvurdering - Kommentar

Prosjektnr: 34154

Prosjektet gjennomføres i samarbeid med flere institusjoner. Universitetet i Bergen er behandlingsansvarlig institusjon. Personvernombudet forutsetter at behandlings-/ansvarsfordelingen formelt er avklart mellom institusjonene. Vi anbefaler at det utarbeides en avtale som omfatter ansvarsfordeling, ansvarsstruktur, hvem som initierer prosjektet, bruk av data og eventuelt eierskap.

Ifølge prosjektmeldingen skal det innhentes samtykke basert på muntlig og skriftlig informasjon om prosjektet og behandling av personopplysninger. Personvernombudet finner informasjonsskrivet tilfredsstillende utformet i henhold til personopplysningslovens vilkår, forutsatt at dato for prosjektslutt og anonymisering av opplysningene tas med. I tillegg må det tas med at prosjektet er tilrådd av Personvernombudet ved NSD, fremfor godkjent av REK, som det nå står.

Prosjektet skal avsluttes 01.01.2016 og innsamlede opplysninger skal da anonymiseres og lydopptak slettes. Anonymisering innebærer at direkte personidentifiserende opplysninger som navn/koblingsnøkkel slettes, og at indirekte personidentifiserende opplysninger (sammenstilling av bakgrunnsopplysninger som f.eks. yrke, alder, kjønn) fjernes eller grovkategoriseres slik at ingen enkeltpersoner kan gjenkjennes i materialet.