Trends in infant feeding practices in Norway

- *data from three national dietary surveys*

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Abstract

Introduction: The first year of life is a time where adequate and sufficient nutrition is essential to support growth and development. Breastmilk is associated with many advantages for the infant, such as reduced risk of infections, overweight and type 2 diabetes. For the mother, breastfeeding has been associated with reduced risk of breast cancer, ovarian cancer, endometriosis and type 2 diabetes, prolonged lactational amenorrhea and lower BMI, and a protective effect on cardiovascular risk factors. As dietary habits in infancy are associated with so many health-related outcomes, knowledge about infant feeding practices is important when planning public health strategies. In Norway, two national dietary surveys among infants at the age of 6 months have previously been conducted; the first one in 1998-99 (Spedkost 1) and the second one in 2006-07 (Spedkost 2). The third survey was conducted in 2018-2019 (Spedkost 3), and will reveal how development within breastfeeding and dietary intake has progressed over 20 years. The aim of this master thesis was to assess how the trends in exclusive breastfeeding, breastfeeding, introduction to complementary foods and introduction to dietary supplementation have developed between the three Spedkost surveys. Trends in infant feeding practices within subpopulations of the sample stratified by infant gender, maternal age, maternal education and maternal tobacco habits were also explored.

Methods: The three Spedkost surveys, assessing dietary intake at 6 months of age, were the basis for this master thesis. In each survey 3000 mothers and infants were invited to participate. Participation rates were 79% (2383 participants) in Spedkost 1, 66% (1986 participants) in Spedkost 2 and 73% (2180 participants) in Spedkost 3. Invitations were sent out by regular mail asking the child's mother, father or other caretaker to answer a semi-quantitative food frequency questionnaire (SFFQ), and in Spedkost 1 and Spedkost 2 the paper-based SFFQ was included in the invitation. In Spedkost 3 the participants were invited to answer the SFFQ online. The SFFQ aimed to assess infant feeding practices retrospectively during the first half year of life, and included questions about breastfeeding, infant formula, introduction to solid foods, drinks and dietary supplements. The SFFQ also contained background questions about the infant, mother and father. Dietary data was described and compared across the three Spedkost surveys.

Results: Exclusive breastfeeding and breastfeeding rates the first weeks of life were high in all three Spedkost surveys. The proportions of exclusively breastfed infants between the age of 2.5 months and 3.5 months were higher in Spedkost 3 compared to Spedkost 2. Apart from

this, proportions of exclusive breastfed infants were generally higher Spedkost 1 and Spedkost 2, than in Spedkost 3. For all three surveys, the proportion of exclusively breastfed infants decreased considerably between the age of 3.5 months and 4 months. The rates of exclusive breastfeeding at 5.5 months of age decreased from Spedkost 1 to Spedkost 3. The proportions of breastfed infants through the first half year of life were relatively high and stable across surveys, and approximately 80% were breastfed at 6 months of age. Introduction to solid foods before the age of 4 months decreased from Spedkost 1 to Spedkost 3, and more infants were introduced to solid foods at 4-5 months of age in Spedkost 3 compared to Spedkost 1 and Spedkost 2. The proportion of infants that were introduced to vitamin D supplements the first weeks of life and during the first half year of life increased across the three Spedkost surveys. The general trend in infants feeding practices described above was observed for both boys and girls and for both categories of maternal tobacco habits. However, maternal non-users of tobacco reported consistently higher compliance to infant dietary recommendations compared to maternal users of tobacco. The differences previously observed in Spedkost 1 and Spedkost 2 between mothers with lower education and higher education, and between the different categories of maternal age, were smaller in Spedkost 3.

Conclusion: The trends in infant feeding practices across the three Spedkost surveys showed that most infants were fed according to the present Norwegian infant dietary recommendations during their first half year of life. The general trend showed that the proportion of infants breastfed throughout the first half year of life was high and stable across surveys, however many infants were introduced to solid foods at 4-5 months of age, consequently terminating exclusive breastfeeding. Further research is needed to better understand the consequences of this development and to investigate reasons for why exclusive breastfeeding is ended earlier than desired. Moreover, understanding reasons for differences in infant feeding practices tied to to social and cultural factors may be important to improve infant dietary habits. In order to evaluate interventions aiming at improving infant dietary habits and how the trends are developing according to the aims stated in the Norwegian Action Plan for a Healthier Diet, further assessment of infant feeding practices is also needed.

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Content

List of tables

List of figures

List of Appendices

Abbreviations

WHO	World Health Organization
SACN	Scientific Advisory Committee on Nutrition
EFSA	European Food Safety Authority
BFI	Baby-Friendly Initiative
MoBa	The Norwegian Mother and Child Cohort
FFQ	Food Frequency Questionnaire
SFFQ	Semi-quantitative Food Frequency Questionnaire
OR	Odds ratio
CI	Confidence interval

1 Introduction

1.1 Breastmilk

The first year of life is a vulnerable period, where sufficient and adequate nutrition is essential for optimal growth and development. The diet primarily consists of breastmilk and/or infant formula the first half year of life, and breastmilk has a unique composition, which is designed to meet the needs of the infant (1, 2). It contains appropriate amounts of several important nutrients, for instance, carbohydrates, protein, fatty acids, vitamins (except for vitamin D) and minerals (1, 3, 4). Breastmilk also contains other biologically active substances, such as immune factors that provide the infant with passive immunity as the infant's own immune system develops and matures (3-5). Breastmilk is consequently an important contributor to the infant's health and has been associated with both short- and long-term health related outcomes both in the infant and in the mother (6-9).

The current recommendations in Norway regarding exclusive breastfeeding state that "it is safe and beneficial to exclusively breastfeed through the first half year of life if the mother and child are satisfied with this" (10). Furthermore, it is recommended to continue breastfeeding throughout the entire first year of life, and preferably as long as possible (10). Infant formula is the only adequate option the first 4 months of life in cases where there is a need for other foods than breastmilk, for instance when there are continued breastfeeding problems or when the child is showing signs which indicate that breastmilk alone is not adequate. Even though the infant is given infant formula, it is still important to continue breastfeeding if possible (10). The Norwegian recommendations are in line with the recommendations from the World Health Organization (WHO), except for that WHO recommend to breastfeed until 2 years of age (11).

Breastmilk has been associated with reduced frequency of overall infections, gastrointestinal and respiratory infections, and middle ear infection in infants (6, 12). Longer duration of both exclusive breastfeeding and breastfeeding as an infant have also been associated with reduced odds of becoming overweight and obese later in childhood (6, 9), and any breastfeeding has been associated with reduced risk of developing type 2 diabetes in adulthood (6, 9). Slightly, but statistically significant lower blood pressure and serum cholesterol in adults who have

been breastfed as infants have been reported (6). Even small reductions in risk factors can be important to reduce the burden of cardiovascular disease on a population level (13).

With regards to prevention of atopic diseases and allergies, results from studies looking at the role of breastfeeding and introduction of solid foods are inconclusive (6). However, a recent meta-analysis found that the timing of introduction of some allergenic foods can influence the risk of allergies (14). However, the Scientific Advisory Committee on Nutrition (SACN) state in in their report from 2018 that there was insufficient evidence regarding the benefits of introducing allergenic foods (e.g. peanuts, fish, hen's egg) before 6 months of age (15), but it was suggested that introduction to allergenic foods around 6 months of age can be beneficial to reduce the risk of allergy (15). Concerning celiac disease, the newest recommendations from The European Society for Paediatric Gastroenterology state that gluten can be introduced any time between the age of 4 months and 12 months, and that the risk of developing celiac disease is not influenced by at which age within this range the child is introduced to gluten (16).

For the mother, breastfeeding has been shown to prolong lactational amenorrhea (7, 12) and reduce the risk for breast and ovarian cancer (2, 7). Both exclusive and any breastfeeding have been associated with reduced risk of endometriosis (17). A protective effect of breastfeeding for the mother has been suggested for type 2 diabetes (2) and cardiovascular risk factors (18). A more rapid maternal weight loss post-delivery has been observed for women who exclusively breastfeed for 5.5 months compared to only 3 or 4 months (12). There is insufficient evidence for the effect of breastfeeding on depression and osteoporosis in the mother (2). However, it has been suggested that the loss of maternal bone mineral through transfer of calcium in the breastmilk is reversed after cessation of breastfeeding (19).

1.2 Trends in breastfeeding

As dietary habits in infancy can affect the risk of several health-related outcomes both on short- and long-term (2, 7), knowledge about the trends in infant feeding practices is essential when working with public health. Breastfeeding data collected from birth records from 1860 to 1984 at three Norwegian maternity hospitals showed that breastfeeding prevalence reached its lowest point in 1967 (20), as the proportion of infants that were breastfed through the first half year of life decreased from approximately 60% in 1920 down to about 15% in 1967 (20). A similar development was also observed in Sweden, where there was a remarkable decrease

in breastfeeding rates until the 1970s when trends turned (21). These decreases in breastfeeding rates were caused by various complex processes in society. For example, improvement in the infant formula in terms of both content and hygiene and increased welfare after World War II caused many parents to choose formula over breastfeeding (20). Moreover, as the populations urbanized, people moved to bigger cities from larger households where breastfeeding knowledge usually had been passed on through generations (20). The changing role of women in society meant that many desired to seek independence through education, career and politics, and breastfeeding became an obstacle in the struggle for equal rights and independence (21). Hospital deliveries became more common, and strict hospital routines and unnecessary supplementation were also factors contributing to decreasing breastfeeding prevalence in the period from the 1920s throughout the 1960s (20). In the 1970s routines and practices slowly changed in order to promote breastfeeding, such as allowing more contact between mother and infant (20).

From the end of the 1990s several national dietary surveys among infants have been conducted in Norway. The Spedkost surveys are longitudinal surveys including assessment of infant feeding practices both at 6 months of age and 12 months of age (22, 23), and have provided important information about infant feeding practices in Norway "Spedkost 1" was conducted in 1998-99 (22) and "Spedkost 2" was conducted in 2006-07 (23), while the third survey, "Spedkost 3", was carried out in 2018-19 (unpublished data). Spedkost 3 will reveal how the development within breastfeeding and dietary intake has developed over the last 20 years. The term "Spedkost" will hereinafter refer to the survey of 6 months old infants. Another recent nationally representative breastfeeding survey in Norway was conducted in 2013, where status in infant feeding practices was assessed retrospectively from birth until 12 months of age (24). Infant feeding practices have also been assessed in the Norwegian Mother and Child Cohort (MoBa), which is a cohort including pregnant women that was conducted from 1999 to 2008 (25) and investigates several exposures in relation to outcomes in both children and parents, including dietary assessment of both children and parents at several time points (26).

These surveys have shown that the rates for initiation of exclusive breastfeeding (i.e. exclusive breastfeeding at 1 week of age) have been high in Norway (91% in 2006) (23), compared to other Western countries like Sweden (76% in 2016) (27) and the UK (69% in 2010) (28). The rates of exclusive breastfeeding at 4 months of age have been found to be higher in Nordic countries like Norway (46%) (23), Sweden (51%) (27) and Denmark (61%)

(29), than for instance in the UK (12%) (28). Exclusive breastfeeding at 5.5 months of age is used to describe exclusive breastfeeding through the first half year of life in Norway, and this rate was 12% in 2006 (23), increasing to 17% in 2013 (24). This is similar to the rates in other Nordic countries, as 14% were exclusively breastfed at 6 months of age in Sweden (27) and 12% were exclusively breastfed at 6.5 months of age in Denmark (29). Compared to other Western countries, the rate of exclusive breastfeeding through the first half year of life (i.e. at 6 months of age) were higher in the US (25% in 2015) (30), but lower in the UK (1%) (28). Comparisons of exclusive breastfeeding across countries can be challenging if different definitions of exclusive breastfeeding have been used, or if difference in methods for collection of breastfeeding data make the results incomparable.

Regarding any breastfeeding, the rates for initiation (i.e. breastfeeding the first week of life) have also been high in Northern countries like Sweden (95% in 2016) (27), Denmark (99% in 2016) (29) and Norway (98% in 2006) (23), compared to rates in for instance the US (70% in 2015) (30) and the UK (81% in 2010) (28). At 4 months of age breastfeeding rates were still higher in Norway (85%) (23) and in Sweden (74%) (27), compared to the UK (55%) (28). Breastfeeding rates at 6 months of age were also higher in Norway at 80% (23), compared to the UK (45%) (28), the US (58%) (30) and Sweden (64%) (27).

1.3 Complementary feeding

In Norway introduction of complementary foods is recommended from 6 months of age to cover the increased nutritional requirements of the infant, preferably in combination with breastmilk (10). Exclusively breastfed infants showing inadequate growth or seeming hungry in spite of frequent breastfeeding before the age of 6 months, might be in need of more food than breastmilk or infant formula alone and introduction to solid foods is then recommended (10).

Internationally, the appropriate age for introduction of complementary feeding has been debated for many years. In the draft (per April of 2019) for the “Scientific Opinion for the appropriate age for introduction of complementary feeding into an infant’s diet” the European Food Safety Authority (EFSA) concluded that there were no disadvantages associated with introducing complementary food between 4 and 6 months of age for infants in Europe (31). Both energy and nutrient requirements and physiological development are all individual characteristics of the infant, and therefore EFSA suggested in 2009 that there is no defined

age at which introduction to complementary food is appropriate (31). SACN concluded in their report from 2018 that exclusively breastfeeding the first half year of life and delaying introduction to solid foods until 6 months of age is associated with reduced risk of gastrointestinal infections (15). Moreover, delaying introduction to solid foods until 6 months of age did not compromise food acceptance in infants later in life, but SACN suggested that when solid foods are introduced, a variety in types of introduced foods can increase acceptance of new foods (15).

Early introduction to solid foods (i.e. < 4 months of age) has decreased the past twenty years in Norway. Twenty-four percent of the infants were introduced to solid foods before the age of 4 months in Spedkost 1, but in Spedkost 2 and in 2013 this rate had decreased to 11% and 7% respectively (23, 24). In the ABIS-study which included infants from the south-east of Sweden born between 1997 and 1999, 27% of the infants were introduced to solid foods before the age of 4 months (32). In Spedkost 1 43% of the infants were introduced to solid foods at 4/4.5 months of age (22), compared to 39% in Spedkost 2 (23), and 42% in the breastfeeding survey in 2013 (24).

1.4 Supplementation

In Norway, vitamin D is the only supplement recommended for infants unless there are medical conditions indicating otherwise (10). The Norwegian recommendations state that supplementation of vitamin D should be initiated when the infant is at 4 weeks of age, preferably as cod liver oil, but vitamin D drops can also be used (10). Parents can begin supplementation with half a teaspoon cod liver oil (5 µg vitamin D) and gradually increase up to one 1 teaspoon (10 µg vitamin D). Breastmilk does not contain enough vitamin D to cover the daily needs of the infant and sun exposure in Northern countries does not provide adequate amounts in the winter months (33), especially when sun exposure should be limited in infancy. Vitamin D stores will quickly deplete after birth if a vitamin D supplement is not given, but supplementation of 7.5 µg vitamin D a day has been shown to be sufficient for prevention of nutritional rickets in Norwegian infants (33). The Norwegian recommendation of 1 teaspoon cod liver oil daily will provide the infant with vitamin D, but also vitamin A and essential long chain fatty acids (10). Infant formula contains about 1 µg vitamin D per 100 mL, and depending on the amount of infant formula given per day, supplementation can be reduced thereafter (10).

Spedkost 2 showed an increase from Spedkost 1 in vitamin D supplementation before the age of 2 months from 55% to 61% (22, 23). In both surveys, 80% of the infants were supplemented with vitamin D at 6 months of age (22, 23). Vitamin D drops were the most common method of vitamin D supplementation in 2006 (23). In 1998 cod liver oil and multivitamins containing vitamin D were more common, though this is due to the fact that vitamin D drops did not exist on the market in 1998 (22). In the MoBa cohort, the proportions of infants born at term that were given cod liver oil, vitamin D drops and multivitamins daily or occasionally during the first half year of life were 54%, 29% and 8% respectively (34).

1.5 Background characteristics associated with infant feeding practices

Internationally, several background characteristics have been associated with infant feeding practices, in terms of exclusive breastfeeding (35-37), initiation of breastfeeding (38), continuation or duration of breastfeeding (7, 38, 39), introduction to solid foods (40) and introduction to vitamin D supplements (41).

In Spedkost 2, lower maternal education and maternal smoking were negatively associated with breastfeeding at 6 months of age (42). In Western countries, exclusive breastfeeding at 6 months of age has been negatively associated with lower maternal age and parental smoking (36, 37), which also corresponds with results from Spedkost 2 (42). A recent meta-analysis found low maternal education and maternal smoking to be negatively associated with both breastfeeding initiation and breastfeeding continuation (38). Race, maternal age, educational level, maternal smoking and parity has also been pointed out as some of the factors associated with duration of any breastfeeding (39).

In a sample of European infants, early introduction to solid foods (i.e. at 3 months or 4 months of age) was significantly positively associated with low maternal age, low maternal educational level and maternal smoking (40). Both lower maternal age and low maternal educational level have been associated with earlier introduction to solid foods in US infants (43). Introduction to solid foods at 4 months of age or later was significantly positively associated with higher maternal age, high maternal education and not smoking when the infant was 6 months of age in Spedkost 2 (42). Higher maternal age and high maternal education have been positively associated with vitamin D supplementation at 6 months of age in other Western countries (41). Higher maternal age and higher maternal education were also

positively associated with supplementation of vitamin D at 6 months of age in Spedkost 1 (44).

1.6 Factors important for healthy infant feeding practices

In Norway, a policy that entitles the mother to a relatively long maternity leave and the right to time off work to breastfeed has been important to maintain high breastfeeding rates (45, 46). Goals to increase exclusive breastfeeding and breastfeeding rates have also been included in The Norwegian Action Plan for a Healthier Diet (2017-2021), and the goals are to increase exclusive breastfeeding rates at 4 months at 5.5 months of age to 60% and 40% respectively, and breastfeeding rates at 12 months of age to 50% (47). As shown above, the rate of exclusive breastfeeding in the two previous Spedkost surveys are lower than the aims stated in the Norwegian Action Plan for a Healthier Diet (2017-2021) (47).

WHO and UNICEF launched the Baby-Friendly Initiative (BFI) in 1991, which is a global effort to promote and support breastfeeding (48). In 2005 the BFI was expanded to include community health centers in Norway (49), and certification involves quality assurance of procedures related to breastfeeding counselling (49). When compared to routine care it has been proven to be effective in increasing the prevalence of exclusive breastfeeding at 6 months of age in a quasi-randomized controlled trial (50). As of February 2019, only 123 of 428 municipalities in Norway have one or more BFI community health center (49). Certification of more community health centers is required to offer the mothers necessary breastfeeding support and counselling, especially when the length of hospital stay after giving birth has been reduced in Norway. This may result in mothers being discharged before they feel able to adequately manage to breastfeed (51).

In the MoBa cohort 12.9% of the mothers have reported that they have experienced breastfeeding problems the first month of the infant’s life, and this was associated with cessation of breastfeeding during the first month (25). If the mothers managed to continue breastfeeding throughout the first month despite these problems, there was no increased risk of breastfeeding cessation (25). This emphasizes the importance of close follow-up by trained health care providers after delivery in order to maintain or even increase the proportion of mothers continuing to exclusively breastfeed and breastfeed, and to achieve the aims stated in the Norwegian Action Plan of Nutrition (47).

2 Aims

The aim of this master thesis was to assess trends in infant feeding practices the first half year of life with regard to exclusive breastfeeding, breastfeeding, introduction to complementary foods and introduction to vitamin D supplements using data from the three Spedkost surveys conducted between 1998 and 2018. Trends in infant feeding practices within subpopulations of the sample were also explored.

2.1 Specific aims

1. How has the proportion of exclusively breastfed infants during the first half year of life progressed from Spedkost 1 to Spedkost 3?
2. How has the proportion of breastfed infants during the first half year of life progressed from Spedkost 1 to Spedkost 3?
3. Have there been changes in the timing of introduction of solid foods during the first half year of life, from Spedkost 1 to Spedkost 3?
4. Have there been changes in the types of solid foods infants are introduced to during the first half year of life, from Spedkost 1 to Spedkost 3?
5. Have there been changes in the timing of introduction to vitamin D supplements during the first half year of life, from Spedkost 1 to Spedkost 3?
6. How have the trends in exclusive breastfeeding at 4 months and 5.5 months of age, breastfeeding at 6 months of age, and age at introduction to solid foods and vitamin D supplementation within subsamples of the population stratified by infant gender, maternal age, maternal education and maternal tobacco habits developed across the Spedkost surveys?

3 Methods

3.1 Sample

For Spedkost 1 and Spedkost 2, a nation-wide sample of 3000 mothers and infants was drawn by Statistics Norway in 1998 and 2006 respectively. For Spedkost 3, the sample of 3000 mothers and infants was drawn from the National Registry by Evry in 2018. The sample in Spedkost 1included all infants born between 27th of April and 17th of May 1998, in Spedkost 2 all infants born between the 17th of April and the 8th of May 2006 and in Spedkost 3 all infants born between the 1st and 29th of March 2018, by a mother who herself was born in Norway, Sweden or Denmark. It was assumed that infants born in these time periods had comparable diets to infants born at other times of the year. Supplementary information collected by Statistics Norway in 1998 and 2006 was the child's gender, the mother's and infant's postal address and the mother's age and marital status. Information collected from the National Registry in 2018 was the child's and mother's social security number, the child's name, postal address, gender and twin or triplet status, the mother's name, postal address, birth year and phone number.

All Spedkost surveys were approved by the Norwegian Centre for Research Data (NSD) (see Appendix 1) and participants were asked for their consent in the questionnaire.

3.2 Design

As previously commented, the Spedkost surveys are longitudinal surveys and include assessment of infant feeding practices at 6 and 12 months of age. Data from the Spedkost 6 months surveys are included in the present master thesis, hence the design of the data collections at 6 months of age is presented.

Data were collected when the infant was 6 months of age in October to December 1998 (Spedkost 1), October to November 2006 (Spedkost 2) and September to November 2018 (Spedkost 3). In Spedkost 1 and in Spedkost 2 invitations with the paper based questionnaire enclosed were sent out by regular mail and the child's mother, father or other caretakers were asked to answer the questionnaire. In Spedkost 2 the participants were also given the opportunity to answer the questionnaire online. In Spedkost 3 the invitations were sent out by regular mail and included a link to the web-based questionnaire, however participants could

request the paper-based questionnaire. In Spedkost 2 and Spedkost 3 all non-responders (i.e. those who had not already answered the questionnaire or declined the invitation) were contacted by telephone by a research associate about 1 ½ week after the invitations were sent out. Participants were called up to 5 times in Spedkost 2, and up to 4 times in Spedkost 3. Participants in Spedkost 3 who did not answer the phone received an SMS explaining the purpose of the call after the first and fourth call. Non-responding participants received a reminder by regular mail with the questionnaire enclosed in all three Spedkost surveys. In all three surveys, participants returning questionnaires missing information about weight or length received a written reminder to register this information.

Amongst those returning completed questionnaires 5 participants were randomly selected to receive a monetary prize of 2000 NOK in Spedkost 1. Of those who returned completed questionnaires in Spedkost 2, 10 participants were randomly selected to receive a monetary prize of 5000 NOK each, and 10 participants were randomly selected to receive a monetary price of 10 000 NOK each. In Spedkost 3 all participants completing the questionnaire received a gift card of 500 NOK (www.presentkort.no).

3.3 The questionnaires

The questionnaires used in the Spedkost surveys were semi-quantitative food frequency questionnaires (SFFQ) aiming to describe feeding practices amongst the children retrospectively from birth up to 6 months of age. The SFFQ from Spedkost 1 (see Appendix 2) was used as a template in Spedkost 2 (see Appendix 3), and the SFFQ in Spedkost 2 was used as a template in Spedkost 3 (see Appendix 4). In Spedkost 2 and Spedkost 3 the SFFQ was revised to include new and relevant questions and foods. All the questionnaires consisted of about 40-50 questions and were estimated to take about 20 minutes to answer. Parents were asked to keep the last 14 days in mind when answering the questionnaire.

Breastfeeding practices were assessed for every week until 7 weeks of age and then every 2nd week up to 6 months of age. Questions regarding breastfeeding included whether the child received breastmilk or not, the frequency of breastfeeding and when the breastfeeding ended. The amounts of breastmilk were not assessed, as the breastmilk intake is difficult to estimate in a SFFQ. The SFFQ also included questions about age for introduction to infant formula/other milk, complementary foods, beverages and dietary supplementation, in addition to frequency and amount of several types of infant formula, milk, soft drinks, water, juice and

general foods and dietary supplements at 6 months of age. Amounts were not assessed for all types of solid foods, mostly because breastmilk usually constitutes a great part of the energy intake when the infant is 6 months of age. This excluded the opportunity to calculate energy and nutrient intake in the diet of the 6 months old infants. In Spedkost 1 and Spedkost 2, if respondents reported that the infant only received breastmilk at the time of answering the questionnaire, respondents were not asked about whether the infant had received infant formula and solid foods or not at this age. This was changed in Spedkost 3, so that the respondents were still asked questions about infant formula and solid foods even though they had previously reported in the questionnaire that the infant only received breastmilk.

Questions about gestational age, parity, maternal educational level, work situation and family situation, smoking habits during pregnancy and when the infant was 6 months of age, in addition to questions about asthma and allergies in the family were included in the SFFQs. In Spedkost 2 and in Spedkost 3 questions about the infant's gender, maternal age and paternal education were also included, and one question about maternal snuff habits at 6 months of age was added to the Spedkost 3 questionnaire.

3.4 Definitions and classification of breastfeeding

Breastfeeding was mostly classified according to WHOs definitions of exclusive and any breastfeeding (52), which are in line with definitions used in the Nordic nutrition recommendations (53) and in the Norwegian infant feeding recommendations as well (10).

- Exclusively breastfed infants received only breastmilk (medicines and vitamin and mineral supplements could be given).
- Breastfed infants included all infants receiving breastmilk

Exclusive breastfeeding in Spedkost 1 included use of water, but in Spedkost 2 and in Spedkost 3 only medicines and vitamin and mineral supplements in addition to breastmilk was regarded as exclusive breastfeeding.

3.5 Correction of completed questionnaires

Almost all questions were mandatory in the web-based SFFQ, which reduced the magnitude of missing answers and the need for correction of questionnaires. Generally the same standard

guide was used for all three Spedkost surveys for correction of issues such as unanswered questions and double marks. For the paper-based questionnaire unanswered questions were corrected to "never or rarely" if that was an alternative (22, 23). More than one mark for age at cessation of breastfeeding was corrected to the highest alternative when the marks were next to each other, and to the unmarked alternative if there was one between the marks (22, 23). More than one mark for maternal and paternal education was corrected to the highest alternative (22, 23).

In all three surveys, correction of missing values was only done for age at introduction to solid foods, different types of solid foods and vitamin D. If it in a previous probing question had been answered that the infant had never been given solid foods or vitamin D, the missing value was corrected to the highest age category for time at introduction to solid foods and to never given for introduction to different types of solid foods during the first half year of life and time of introduction to vitamin D supplements.

3.6 Data management and analysis

Data from Spedkost 1 and Spedkost 2 had previously been collected, while part of the master thesis was to participate in the data collection of Spedkost 3. In Spedkost 1 the questionnaires were scanned and raw data files were established by Statistics Norway (22). In Spedkost 2 and in Spedkost 3 the paper-based questionnaires were scanned at the University of Oslo with Teleform (version 8.0 and 10.5.1, respectively). Questback® and UiO's "Nettskjema" were used for the web-based questionnaires in Spedkost 2 and Spedkost 3 respectively. In Spedkost 2 and Spedkost 3, the paper-based and web-based questionnaires were merged before the complete file was imported to SPSS.

In the present master thesis, all three Spedkost surveys were analysed with descriptive and exploratory statistics by using SPSS (version 25). Rates for exclusive breastfeeding and breastfeeding were presented for the two first weeks of life, and then for every half month up to 6 months of age. Seventeen categories in Spedkost 1 and sixteen categories in Spedkost 2 and Spedkost 3 for introduction to solid foods was reduced to three categories: < 4 months of age, at 4-5 months of age and ≥ 5.5 months of age. Introduction to different types of solid foods during the first half year of life consisted originally of seven categories and was coded into a dichotomous variable as yes or no. Age at introduction to the most common types of solid foods was reduced from seven categories to five categories: never given, < 4 months, at

4 months, at 5 months and at 6 months of age. Seventeen categories in Spedkost 1 and Spedkost 3 and sixteen categories in Spedkost 2 for introduction to solid foods was reduced to three categories for introduction to vitamin D was combined to four categories: never given, < 4 weeks of age, at 4-5 weeks of age, ≥ 6 weeks of age. When age at introduction to vitamin D supplements was analysed for subpopulations of the sample, the introduction was combined into two categories: introduction ≤ 6 weeks of age and introduction > 6 weeks of age, and the latter category also included those who had never been given vitamin D supplements.

The categories for each background factor were coded in the same way for every survey. Maternal age, originally a continuous variable was categorized into three groups: ≤ 24 years, 25-34 years and ≤ 35 years. Birth weight, originally a continuous variable was categorized into three groups: < 2500 grams, 2500-4500 grams and > 4500 grams. Infant birth weight was compared for the two genders using t-test. Categories for maternal and paternal education were combined into two categories: lower education and higher education. Higher education included a university or college degree, while lower education included primary school, secondary school or vocational school. Ten categories for maternal work situation prior to childbirth were coded into two categories: paid work and unpaid work. Paid work included being in full-time and part-time work, sick leave prior to pregnancy and leave of absence, and being a student. Unpaid work included receiving a disability pension and work assessment allowance, being unemployed and the category “other”. Three categories in Spedkost 1 and four categories in Spedkost 2 and Spedkost 3 for maternal marital status were combined into two categories: married or cohabitant, and not married or cohabitant. Four categories for parity were recoded to three categories: 1 child, 2 children and 3 or more children. Five categories in Spedkost 1 and seven categories in Spedkost 2 and Spedkost 3 for smoking during pregnancy and four categories in all three surveys for smoking when the infant was 6 months of age were both coded into a dichotomous variable as yes or no. Smoking during pregnancy was coded as two variables; smoking at the beginning of pregnancy included everyone who smoked at any time during pregnancy, smoking at the end of pregnancy excluded all of those who quit at some point during pregnancy. Four categories for maternal snuff habits at 6 months of age were reduced to users (including occasional and daily users). The proportion of mothers smoking when the infant was 6 months of age in the Spedkost sample was low and when the patterns for infant feeding practices were analysed according to maternal smoking habits and maternal snuff habits, the patterns were considered similar.

These two background characteristics were therefore combined and termed maternal tobacco habits.

The results from Spedkost 3 were compared to the results from Spedkost 1 and Spedkost 2. Proportions of exclusive breastfeeding, breastfeeding, introduction to different types of solid foods during the first half year of life and dietary supplementation at 6 months of age were dependent dichotomous variables and were compared across surveys using binary logistic regression. Age at introduction to solid foods and age at introduction to vitamin D supplements during the first weeks of life were dependent variables with more than two categories and were compared across surveys using multinomial logistic regression. Age at introduction to different types of solid foods was coded into dichotomous variables for each age category, and binary logistic regression was used to compare results across the surveys. When infant feeding practices were compared for subpopulations of the sample, binary logistic regression was used for exclusive breastfeeding, breastfeeding and introduction to vitamin D supplements, while for introduction to solid foods multinomial logistic regression was used.

Bonferroni adjustment was applied to the alpha level when multiple analyses were conducted. The alpha level (0.05) was divided by the number of comparisons in the analysis for both the overall p-value, and for the p-value for the comparisons between Spedkost 1 and Spedkost 3, and Spedkost 2 and Spedkost 3. For instance, the comparison of exclusive breastfeeding rates was conducted for 13 ages, and therefore the corrected alpha level for the overall p-value was 0.05/13 = 0.004. Within the model, two post hoc test were conducted and therefore the alpha level of 0.05 was divided by two resulting in a corrected alpha level of 0.025.

3.7 Student's responsibilities

Apart from writing the thesis, the master student's responsibilities also included contributing to the data collection in Spedkost 3 which involved preparing the letters with the invitations, reminders and gift cards, participating in the telephoning of non-responding participants and scanning of the paper-based questionnaires. It was also considered necessary to do some correction work for the exclusive breastfeeding and breastfeeding variables in the data files from Spedkost 1 and Spedkost 2, and this work was performed by the master student. All data management and statistical analyses were performed by the master student.

4 Results

4.1 Background characteristics

Of the 3000 invited mothers and infants in each of the three Spedkost surveys, the participation rates were 79% (2383 participants) in Spedkost 1 (22), 66% (1986 participants) in Spedkost 2 (23), and 73% (2180 participants, unpublished data) in Spedkost 3. Background characteristics of the participants are presented in **Table 1**, including national statistics from the years each survey was conducted (54-56). The proportion of female and male infants were similar in Spedkost 2, but the proportions of male infants were higher compared to female infants in Spedkost 1 (53%) and Spedkost 3 (54%) (**Table 1**). Mean birth weight was highest in Spedkost 1 (3635 grams ± 582 grams), and about equal in Spedkost 2 and Spedkost 3 (3574 grams ± 620 grams and 3539 grams ± 556 grams, respectively) (**Table 1**). This development is similar to the development within national statistics (54). Boys had a significantly higher mean birth weight than girls in all three Spedkost surveys, with a mean difference of 149 grams ± 24 grams in Spedkost 1, 132 grams ± 28 grams in Spedkost 2 and 147 grams ± 24 grams in Spedkost 3 ($p<0.001$ in every survey).

Maternal age was highest in Spedkost 3 with a mean age of 31.0 ± 4.8 years, compared to 29.7 ± 6.5 years and 30.8 ± 4.6 years in Spedkost 1 and Spedkost 2, which is in line with the development in national statistics (**Table 1**) (54). In Spedkost 1 about 44% of the mothers had higher education, and in Spedkost 2 and in Spedkost 3 this proportion had increased to 63% and 73%, respectively. An increase in maternal educational level was also seen in national statistics from 1998 to 2017 (**Table 1**) (55). Paternal education was only asked for in Spedkost 2 and in Spedkost 3, with about half of the fathers having higher education (**Table 1**). In Spedkost 3 94% of the mothers were employed in paid work, compared to 88% and 92% in Spedkost 1 and Spedkost 2, respectively. The proportion of mothers smoking during pregnancy decreased from Spedkost 1 to Spedkost 3 both at the beginning of pregnancy (from 26% in Spedkost 1 to 4% in Spedkost 3) and at the end of pregnancy (from 19% in Spedkost 1 to 2% in Spedkost 3) (**Table 1**). A similar development was also observed for the national statistics (54). When the infant was 6 months of age 27% of the mothers smoked in Spedkost 1, while in Spedkost 3 only 4% of the mothers smoked at this age.

Table 1. Sample characteristics from Spedkost 1, 2 and 3, including national statistics from each year the Spedkost survey was conducted.

	Spedkost 1[1] (n=2383)	National statistics (1998)*	Spedkost 2[2] (n=1986)	National statistics (2006)*	Spedkost 3[3] (n=2180)	National statistics (2017)*
	n (%)	%	n (%)	%	n (%)	%
Infant gender						
Female	1129 (47)	49	987 (50)	49	1007 (46)	48
Male	1254 (53)	51	993 (50)	51	1173 (54)	52
Birth weight (mean, g)	3635 ± 582	3540	3574 ± 620	3502	3539 ± 556	3489
< 2500 g	77 (3)	5	74 (4)	5	88 (4)	5
2500 - 4500 g	2151 (91)	90	1807 (91)	91	2018 (93)	92
> 4500 g	139 (6)	5	99 (5)	4	68 (3)	3
Maternal age (mean)[4]	29.7 ± 6.5	29.3	30.8 ± 4.6	30.2	31.0 ± 4.8	30.9
≤ 24 years	334 (14)	20	201 (10)	16	148 (7)	11
25-34 years	1656 (69)	67	1331 (68)	66	1537 (71)	68
≥ 35 years	393 (16)	13	414 (21)	18	495 (23)	21
Maternal education[5]						
Lower education	1335 (56)	73	717 (37)	66	593 (27)	55
Higher education	1038 (44)	27	1245 (63)	34	1587 (73)	45
Paternal education[6]						
Lower education		79	1057 (55)	76	1056 (49)	71
Higher education		21	876 (45)	24	1120 (51)	29
Maternal work situation[7]						
Paid work	2058 (88)		1768 (92)		2041 (94)	76
Unpaid work	276 (12)		151 (8)		126 (6)	24
Maternal smoking[8]						
At beginning of pregnancy[9]	628 (26)	26	347 (18)	16	79 (4)	4
At the end of pregnancy[10]	447 (19)	19	147 (8)	9	33 (2)	2
At 6 months of age	652 (27)		296 (15)		85 (4)	
Maternal snuff users at 6 months of age[11]					171 (8)	
Maternal family situation						
Married/cohabitant	2251 (95)	92	1883 (96)	93	2114 (97)	94
Not married/cohabitant	129 (5)	8	84 (4)	7	66 (3)	6
Parity[8]						
1 child	948 (40)	40	802 (41)	42	996 (46)	42
2 children	861 (36)	36	790 (40)	36	856 (39)	37
≥3 children	568 (24)	24	385 (19)	23	328 (15)	21

[1] Missing values for Spedkost 1 ranged from 0-49. [2] Missing values for Spedkost 2 ranged from 0-84. [3] Missing values in Spedkost 3 ranged from 0-13. [4] Maternal age in the Spedkost surveys is the mothers' age when the infants were 6 months of age. Maternal age in national statistics is their age when the infant was born. [5] National statistics for maternal education is calculated for women 16-49 years including only Norwegian born women. [6] National statistics for paternal education is calculated for all age groups of men, not excluding immigrants. [7] National statistics for maternal work situation women is calculated for women < 61 years excluding all immigrants. [8] Maternal smoking included those who smoked daily and occasionally. [9] Smoking at the beginning pregnancy included all who smoked during pregnancy, also those who quit at some point during pregnancy. Data from 1999 were used to compare Spedkost 1 to national statistics. [10] Smoking at the end of pregnancy excluded those who quit during pregnancy. Data from 1999 were used to compare Spedkost 1 to national statistics. [11] Maternal snuff users included those who used snuff daily and occasionally. * National statistics was obtained from the Medical Birth Registry of Norway (54), except for national statistics regarding maternal education (55), paternal education (55) and maternal work situation (56) which was obtained from Statistics Norway.

Only Spedkost 3 included a question about snuff habits and 8% of the mothers used this occasionally or daily when the infant was 6 months of age (**Table 1**). National statistics regarding snuff habits among Norwegian mothers does not exist, however national statistics from 2017 showed that among women aged 16-34 years about 12-14 % were daily users of snuff (57). Fewer mothers were multiparous with three or more children in Spedkost 3 (15%), compared to Spedkost 1 (24%) and Spedkost 2 (19%). Forty-six percent of the mothers in Spedkost 3 participated with their first child, and for Spedkost 1 and Spedkost 2 this proportion was 40% and 41% respectively. The proportion of mothers with 2 children was stable between Spedkost 2 and Spedkost 3, at about 40%. Most mothers participating in the Spedkost surveys were married or cohabitant, which is in line with national statistics (**Table 1**).

4.2 Trends in breastfeeding

Table 2. Proportions (%) of exclusively breastfed infants in Spedkost 1, 2 and 3.

	Spedkost 1 (n=2383)[1]	Spedkost 2 (n=1986)[1]	Spedkost 3 (n=2180)[1]	
Infant's age	With water[2]	Without water[2]	Without water[2]	P[3]
1 week	96[a]	91[a]	87	< 0.001
2 weeks	94[a]	89[a]	85	< 0.001
4 weeks	90[a]	82	81	< 0.001
6 weeks	87[a]	79	78	< 0.001
2 months	81[a]	73	74	< 0.001
2.5 months	78[a]	69[a]	73	< 0.001
3 months	70	63[a]	68	< 0.001
3.5 months	62	58[a]	64	< 0.001
4 months	44[a]	46[a]	38	< 0.001
4.5 months	30[a]	36[a]	25	< 0.001
5 months	18[a]	25[a]	13	< 0.001
5.5 months	11[a]	12[a]	5	< 0.001
6 months	7[a]	9[a]	2	< 0.001

[1] Missing values ranged from 0-9 for Spedkost 1, 4-9 in Spedkost 2 and 0-24 in Spedkost 3.
[2] The definition of exclusive breastfeeding in Spedkost 1 included use of water, but this was not included in the definition used in Spedkost 2 and Spedkost 3.
[3] P value is calculated with binary logistic regression.
[a] Proportion significantly different from Spedkost 3 (α=0.025).
The significance level was adjusted for multiple analyses (α=0.004).

The first aim of the thesis was to analyse the trends in exclusive breastfeeding the first half year of life from Spedkost 1 to Spedkost 3, and these results are presented in **Table 2**. As previously pointed out, the definition of exclusive breastfeeding was somewhat different for Spedkost 1 than for Spedkost 2 and Spedkost 3, as the definition used in Spedkost 1 also allowed the infant to consume water. When assessing the proportions of exclusive breastfeeding allowing for inclusion of water, exclusive breastfeeding rates were 1 to 10 percentage points higher, mostly at 4-5%, in Spedkost 2 (data

not shown) and 0.5 to 3 percentage points higher in Spedkost 3 (data not shown), compared to the proportions presented in **Table 2**.

Exclusive breastfeeding rates varied significantly between Spedkost 1 and Spedkost 3, and between Spedkost 2 and Spedkost 3 for all ages (**Table 2**). The proportion of mothers who exclusively breastfed at 1 week of age was significantly lower in Spedkost 3 (87%) than in Spedkost 1 (96%) and Spedkost 2 (91%). The proportions of exclusively breastfed infants were significantly higher in Spedkost 1 than in Spedkost 3 for all ages, except at 3 months and 3.5 months of age (**Table 2**). Because of the differences in definitions of exclusive breastfeeding further comparisons are mainly focused on Spedkost 2 and Spedkost 3 for exclusive breastfeeding. At 4 weeks of age, the rates of exclusive breastfeeding in Spedkost 2 and in Spedkost 3 were quite similar at 82% and 81%, respectively. From 2 months of age until 4 months of age, the proportions of exclusively breastfed infants were somewhat higher in Spedkost 3 than in Spedkost 2, and significantly more infants were exclusive breastfed between 2.5 months and 3.5 months of age in Spedkost 3 compared to Spedkost 2 (**Table 2**). From 3.5 months of age to 4 months of age sharp decrease in rate of exclusive breastfeeding from approximately 60% down to about 40% was observed for all three surveys (**Table 2**).

Table 3. Proportions (%) of breastfed infants in Spedkost 1, 2 and 3.

Infant's age	Spedkost 1 (n= 2383)[1]	Spedkost 2 (n= 1986)[1]	Spedkost 3 (n= 2180)	P[2]
1 week	99[a]	98[a]	97	< 0.001
2 weeks	99[a]	97	96	< 0.001
4 weeks	96[a]	95	93	< 0.001
6 weeks	95[a]	93	92	< 0.001
2 months	92[a]	91	89	0.004
3 months	88	88	85	0.007
4 months	85	85	82	0.02
5 months	82	82	79	0.02
5.5 months	81	81	78	0.041
6 months	80	80	78	0.041

[1] Missing values were 6 in Spedkost 1, and 2 for breastfeeding at 6 months of age for Spedkost 2.
[2] P value is calculated with binary logistic regression.
[a] Proportion significantly different from Spedkost 3 (α=0.025). The significance level was adjusted for multiple analyses (α= 0.005).

At 4 months of age significantly fewer were exclusively breastfed in Spedkost 3 (38%) than in Spedkost 2 (46%). Only 5% of the infants were exclusively breastfed at 5.5 months of age (i.e. exclusive breastfeeding to 6 months of age) in Spedkost 3, compared to 11% in Spedkost 1 and 12% in Spedkost 2 (**Table 2**).

Trends in breastfeeding the first half year of life was the second aim of the thesis, and breastfeeding rates are presented in **Table 3**. The rate for initiation of breastfeeding (i. e. breastfeeding at 1 week of age) was

slightly, but significantly lower in Spedkost 3 (97%) than in Spedkost 1 (99%) and in Spedkost 2 (98%). Although the differences in breastfeeding rates between surveys were small, the proportions of breastfed infants were significantly lower at 1 week of age until 2 months of age in Spedkost 3 compared to Spedkost 1 (**Table 3**). The proportions of breastfed infants were relatively similar for all ages for Spedkost 2 and Spedkost 3. At 4 months of age, 82% were breastfed in Spedkost 3 and 85% were breastfed in both Spedkost 1 and in Spedkost 2. At 6 months of age, 80% of the infants were breastfed in Spedkost 1 and in Spedkost 2, while 78% of the infants were breastfed at this age in Spedkost 3, however due to multiple analysis these differences were not significant (**Table 3**).

4.3 Trends in the introduction to solid foods

Table 4. Time of introduction to solid foods in Spedkost 1, 2 and 3.

Infant's age	%	OR (95% CI)[1]	P[1]
< 4 months			
Spedkost 1 (n=2383)[2]	23	4.78 (3.74-6.11)	< 0.001
Spedkost 2 (n=1986)[2]	12	1.32 (1.02-1.71)	0.033
Spedkost 3 (n=2180)[2]	6	1.00 (Reference)	
4-5 months			
Spedkost 1 (n=2383)[2]	63	1.02 (0.86-1.21)	0.804
Spedkost 2 (n=1986)[2]	62	0.53 (0.46-0.62)	< 0.001
Spedkost 3 (n=2180)[2]	77	1.00 (Reference)	
≥ 5.5 months[3]			
Spedkost 1 (n=2383)[2]	14		
Spedkost 2 (n=1986)[2]	26		
Spedkost 3 (n=2180)[2]	17		

[1] OR, 95% CI and P value was calculated with multinomial logistic regression.
[2] Missing values were 195, 197 and 2 in Spedkost 1, 2 and 3.
[3] Introduction to solid foods ≥ 5.5 months was used as reference category for the dependent variable and is therefore not presented with OR, 95% CI and P value.
The significance level was adjusted for multiple analyses (α= 0.025).

The third aim was to assess if there had been changes in the timing of introduction to solid foods during the first half year of life from Spedkost 1 to Spedkost 3, and these results are presented in **Table 4**. In Spedkost 1 23% of the infants were introduced to solid foods before 4 months of age compared to 12% in Spedkost 2 and 6% in Spedkost 3 (**Table 4**). The odds of introducing solid foods before 4 months of age compared to 5.5 months of age or later were significantly higher in Spedkost 1 than in Spedkost 3 (OR=4.78, (3.74, 6.11, p<0.001)) (**Table 4**). For all three surveys, most infants were introduced to solid foods at 4-5 months of age, and this share increased from Spedkost 2 (62%) to Spedkost 3 (77%) (**Table 4**). Seventeen percent of the infants were introduced to solid foods at 5.5 months of age or later in Spedkost 3, compared to 14% and 26% in Spedkost 1 and Spedkost 2, respectively (**Table 4**). The odds of introducing solid foods at 4-5 months of age rather than later, were significantly lower in Spedkost 2 than in Spedkost 3 (OR=0.53 (0.46, 0.62, p<0.001)) (**Table 4**).

4.3.1 Trends in types of solid foods introduced

Studying the development according to types of solid foods infants were introduced to during the first half year of life was the fourth aim of the thesis, and these results are presented in **Figure 1**.

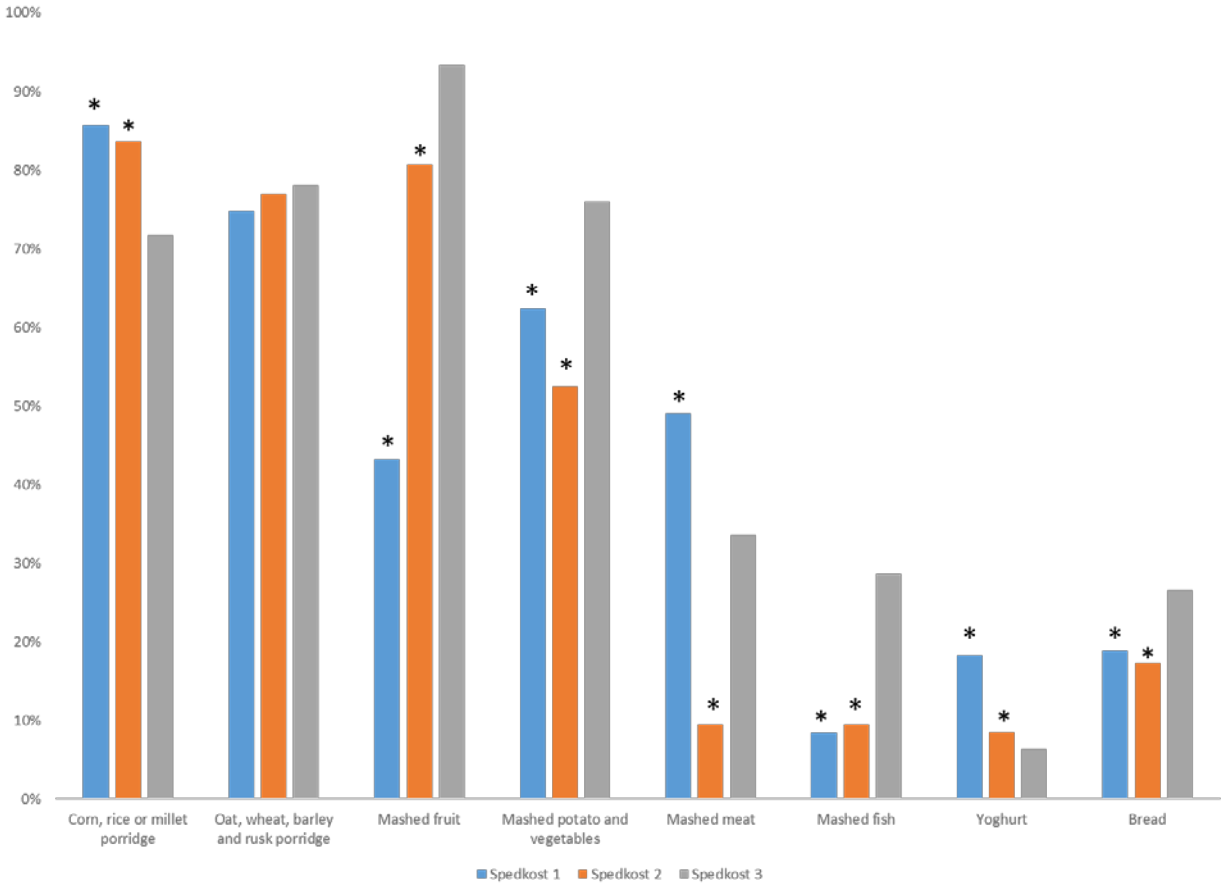

Figure 1. Proportions of infants introduced to different types of solid foods during the first half year of life in Spedkost 1, Spedkost 2 and Spedkost 3. Missing values ranged from 274-740 in Spedkost 1, 228-348 in Spedkost 2 and 12-41 in Spedkost 3. *= proportion is significantly different from Spedkost 3 (α=0.025), calculated with binary logistic regression.

In Spedkost 3 fruits was the most commonly introduced food and more than 90% of the infants had been introduced to fruits during their first half year of life (**Figure 1**). This was significantly higher than what was observed in Spedkost 1 (30%) and Spedkost 2 (81%). Porridge was also a commonly introduced food during the first half year of life in Spedkost 3, however the type of porridge introduced gradually changed between the surveys (**Figure 1**). Corn/rice/millet porridge was the most common porridges introduced during the first half year

of life in Spedkost 1 (86%) and in Spedkost 2 (84%), but significantly fewer were introduced to these types of porridges in Spedkost 3 (72%). Porridge made of oats/wheat/barley/rusk was somewhat more frequently introduced in Spedkost 3 (78%), but this proportion was not significantly higher than in Spedkost 1 (75%) or in Spedkost 2 (77%). If porridge made of corn/rice/millet and porridge made of oats/wheat/barley/rusk were combined in Spedkost 3, the proportion introduced to any porridge (92%) was similar to the proportion introduced to fruits during the first half year of life (93%).

The proportion that had been introduced to mashed potato and vegetables during the first half year of was significantly higher in Spedkost 3 (76%) compared to Spedkost 2 (53%) and Spedkost 1 (62%) (**Figure 1**). Although fish was not commonly introduced during the first half year of life, the frequency of introduction was significantly higher in Spedkost 3 (29%) compared to Spedkost 1 (8%) and Spedkost 2 (10%) (**Figure 1**). Introduction to bread during the first half year of life increased significantly, from 19% being introduced to this in Spedkost 1 and 17% in Spedkost 2 to 27% in Spedkost 3 (**Figure 1**).

4.3.2 Age at introduction to different types of solid foods

As changes in the types of foods that infants were introduced to through the first half year of life was seen from Spedkost 1 to Spedkost 3, this raised the question of whether these changes also were followed by a change in which types of solid foods that were introduced first. The most common foods introduced during the first half year of life were analysed for the frequency of introduction before the age of 4 months, at 4, 5 or 6 months of age. Age at the introduction to porridge made of corn/rice/millet (**Figure 2a**), porridge made of oats/wheat/barley/rusk (**Figure 2b**), fruits (**Figure 2c**) and potato/vegetables (**Figure 2d**) for the three surveys are presented below.

Porridge made of corn/rice/millet was a frequently used food when introducing solid foods to infants (**Figure 2a**). In Spedkost 1 17% were introduced to these types of porridges before 4 months of age. Significantly fewer infants were introduced to corn/rice/millet porridges before the age of 4 months in Spedkost 3 (3%) than in Spedkost 1 (17%) and in Spedkost 2 (8%), but it is important to bear in mind that few infants were introduced to solid foods at all at this age in Spedkost 3 (6%). These porridges was frequently introduced at 4 months of age both in Spedkost 1 (42%), Spedkost 2 (38%) and in Spedkost 3 (41%) (Figure 2). Porridge made of oats/wheat/barley/rusk was also a frequently introduced first food at 4 months of age

in every survey, but in Spedkost 3 significantly more infants were introduced to these porridges at 4 months of age (34%), than in Spedkost 1 (25%) and Spedkost 2 (20%) (**Figure 2b**).

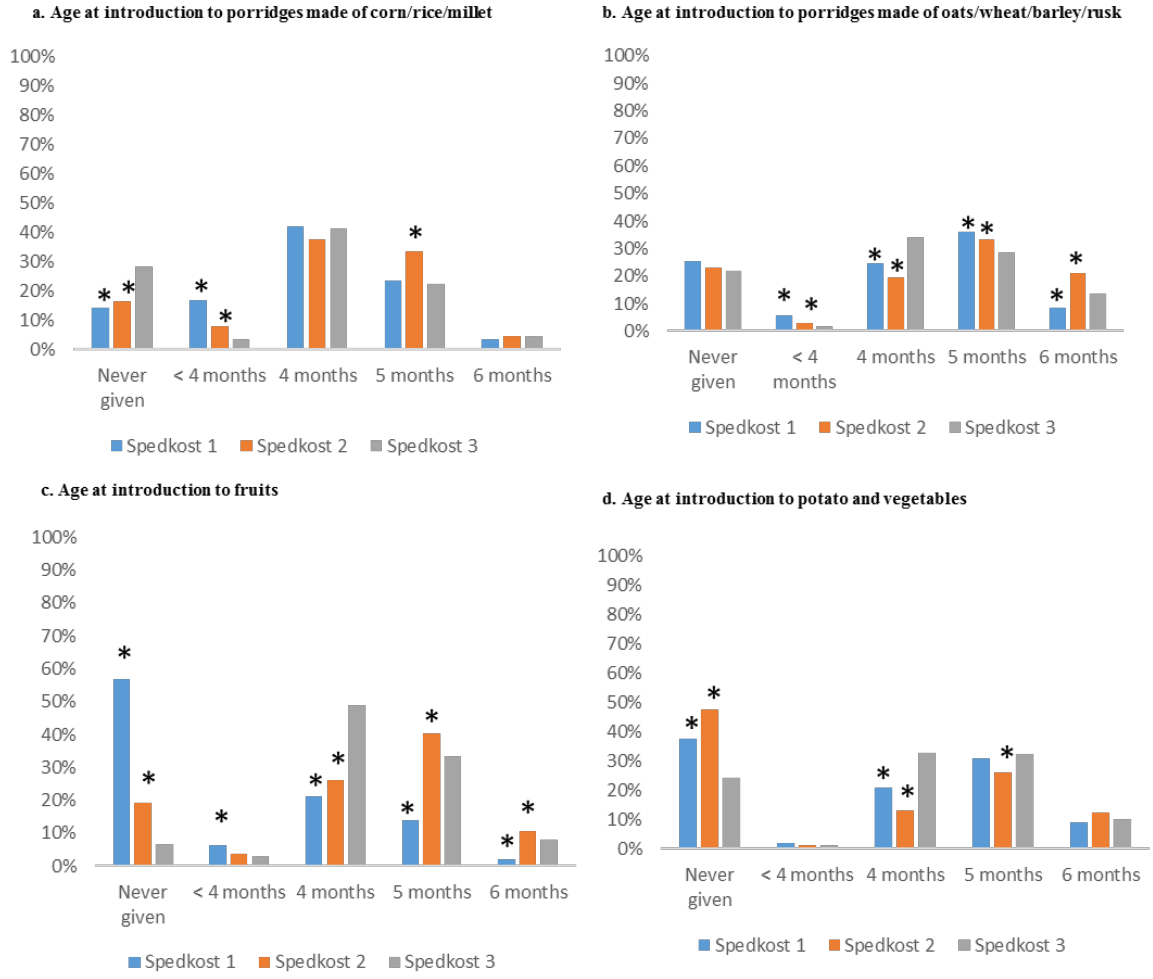

Figure 2. Age at introduction to porridge made of corn/rice/millet, porridge made of oats/wheat/barley/rusk, fruits and potato/vegetables in Spedkost 1 (n=2383), Spedkost 2 (n=1986) and Spedkost 3 (n=2180). Missing values ranged from 274-634 in Spedkost 1, 213-303 in Spedkost 2 and 12-21 in Spedkost 3. *= proportion is significantly different from Spedkost 3.

Significantly more infants were introduced to fruits at 4 months of age in Spedkost 3 (50%), than in Spedkost 1 (21%) and Spedkost 2 (26%) (**Figure 2c**). Combining porridges made of corn/rice/millet and porridges made of oats/wheat/barley/rusk in Spedkost 3, showed that the frequency of introduction of any porridges (54%) at 4 months of age was similar to that of fruits (50%). The proportion of infants who had never been given potato and vegetables was significantly higher in Spedkost 1 (38%) and in Spedkost 2 (47%), than in Spedkost 3 (24%).

Moreover, significantly more infants were introduced to potato and vegetables at 4 months of age in Spedkost 3 (33%), than in Spedkost 1 (21%) and Spedkost 2 (13%) (**Figure 2d**).

4.4 Trends in vitamin D supplementation

Studying trends in introduction to vitamin D supplements was the fifth aim of the thesis and age at introduction to vitamin D supplements in the three studies is presented in **Table 5**.

Table 5. Time of introduction to vitamin D supplements in Spedkost 1, 2 and 3.

Infant's age	%	OR (95% CI)[1]	P[1]
< 4 weeks			
Spedkost 1 (n=2383)[2]	4	0.37 (0.28-0.49)	< 0.001
Spedkost 2 (n=1986)[2]	5	0.56 (0.43-0.74)	< 0.001
Spedkost 3 (n=2178)[2,3]	6	1.00 (Reference)	
4-5 weeks			
Spedkost 1 (n=2383)[2]	24	0.25 (0.22-0.29)	< 0.001
Spedkost 2 (n=1986)[2]	31	0.37 (0.32-0.43)	< 0.001
Spedkost 3 (n=2178)[2,3]	53	1.00 (Reference)	
≥ 6 weeks[2]			
Spedkost 1 (n=2383)[2]	61		
Spedkost 2 (n=1986)[2]	54		
Spedkost 3 (n=2178)[2,3]	34		

[1] OR, 95% CI and P value was calculated with multinomial logistic regression.
[2] Missing values were 12, 58 and 2 for Spedkost 1, 2 and 3.
[3] The reference category for the dependent variable was introduction ≥ 6 weeks and introduction at this age is therefore not presented with OR, 95% CI and P value.
The proportion that never had been given vitamin D supplements were 12%, 10% and 7% in Spedkost 1, 2 and 3 respectively.
The significance level was adjusted for multiple analyses (α= 0.025).

Few infants were introduced to vitamin D supplements before 4 weeks of age in Spedkost 1 (4%), Spedkost 2 (5%) and Spedkost 3 (6%). Twenty-four percent of the infants in Spedkost 1 and 31% of the infants in Spedkost 2 were introduced to vitamin D supplements at 4-5 weeks of age, while this number was 53% in Spedkost 3 (**Table 5**). The odds of having been introduced to vitamin D supplements at 4-5 weeks rather than at 6 weeks of age or later were significantly lower in Spedkost 1 (OR=0.25 (0.22, 0.49, p<0.001)) and in Spedkost 2 (OR=0.37 (0.32, 0.43, p<0.001)) than in in Spedkost 3 (reference). Sixty-one percent of the infants in Spedkost 1, 54% of the infants in Spedkost 2 and 34% of the infants in Spedkost 3 were introduced to vitamin D supplements at 6 weeks of age or later (**Table 5**).

The proportion of infants who received dietary supplements at 6 months of age was stable at 80% for Spedkost 1 and Spedkost 2, while a significant increase to 85% was seen in Spedkost 3 (**Table 6**). Cod liver oil was the most commonly used dietary supplement at 6 months of age in Spedkost 1 (55%), and the use was significantly higher in Spedkost 1 compared to Spedkost 3 (40%) (**Table 6**). However, vitamin D drops did not exist on the market when the Spedkost 1 survey was conducted in 1998 (**Table 6**). The proportion of infants given vitamin

D drops was significantly higher in Spedkost 3 (61%) than in Spedkost 2 (39%). The use of multivitamins (e.g. “Sana-sol”, “Biovit”) at 6 months of age was significantly lower in Spedkost 3 (3%) compared to Spedkost 1 (35%), and in Spedkost 3 compared to Spedkost 2 (7%) (**Table 6**).

Table 6. Dietary supplementation at 6 months of age in Spedkost 1, 2 and 3.

	Spedkost 1 (n=2383)	Spedkost 2 (n=1986)	Spedkost 3 (n=2180)	
Infant’s age	%	%	%	P[1]
6 months	80[a]	80[a]	85	< 0.001
Cod liver oil	55[a]	40	40	< 0.001
Vitamin D drops		39	61	< 0.001
Multivitamins	35[a]	7[a]	3	< 0.001
Other supplements	4	2	3	0.074

[1] P-value is calculated with binary logistic regression (α= 0.05).
[a] Proportion is significantly different (α= 0.025) from Spedkost 3.

4.5 Differences in infant feeding practices according to background characteristics

In accordance with the sixth aim, trends in exclusive breastfeeding at 4 months of age and 5.5 months of age, breastfeeding at 6 months of age and introduction to solid foods and vitamin D supplements were analysed for subsamples of the population stratified by infant gender, maternal age, maternal education and maternal tobacco habits (i.e. maternal smoking habits and maternal snuff habits). Binary logistic regression was used to compare exclusive breastfeeding and breastfeeding rates, and proportions introduced to vitamin D supplements. Multinomial logistic regression was used to compare the time of introduction to solid foods. Missing values ranged from 0-195, 0-197 and 0-11 in Spedkost 1, 2 and 3 respectivlely.

4.5.1 Infant gender

The proportion of exclusively breastfed boys at 4 months of age was relatively similar in Spedkost 1 (41%), Spedkost 2 (43%) and Spedkost 3 (38%) (**Figure 3a**). For girls, the proportion of exclusive breastfeeding at 4 months of age was significantly lower in Spedkost 3 (39%) compared to Spedkost 1 (47%) and Spedkost 2 (49%) (**Figure 3a**). At 5.5 months of age, the proportion of exclusively breastfed boys was significantly lower in Spedkost 3 (5%)

than in Spedkost 1 (9%) Spedkost 2 (11%) (**Figure 3a**). For exclusively breastfed girls at 5.5 months of age, the proportion was also significantly lower in Spedkost 3 (6%) than in Spedkost 1 (12%) and Spedkost 2 (14%) (**Figure 3a**). For breastfeeding at 6 months of age, the proportions were stable at approximately 80 % for both genders in all three surveys (**Figure 3a**).

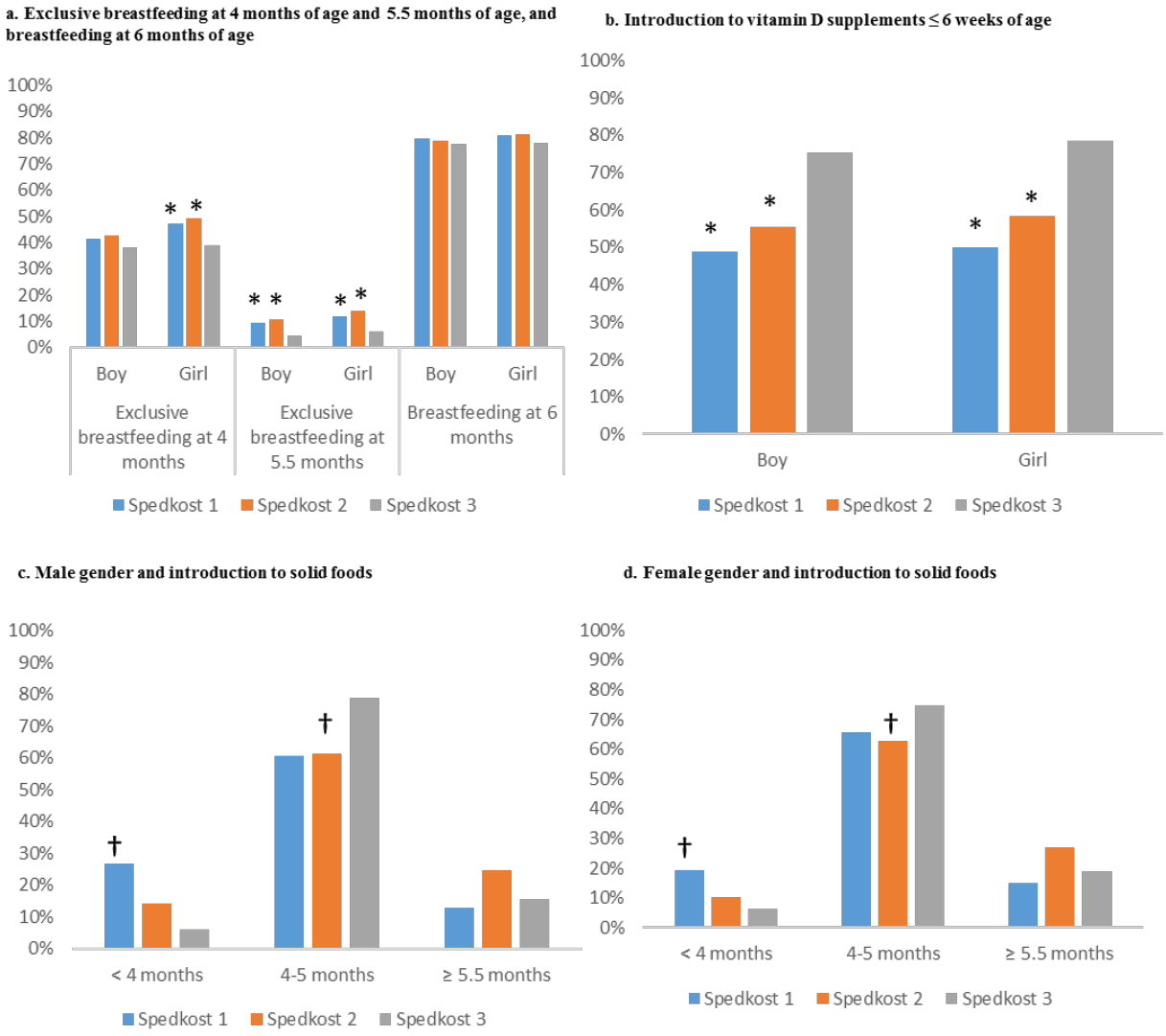

Figure 3. Exclusive breastfeeding at 4 months of age and 5.5 months of age, breastfeeding at 6 months of age, introduction to vitamin D supplements and introduction to solid foods according to infant gender in Spedkost 1 (n=2383), Spedkost 2 (n=1986) and Spedkost 3 (n=2180). *= proportion was significantly different from Spedkost 3 (α=0.025). †= the odds of introducing at this age rather than ≥ 5.5 months of age were significantly different from Spedkost 3 (α=0.025), calculated with multinomial logistic regression.

Introduction to vitamin D supplements at the age of 6 weeks or younger was significantly higher in Spedkost 3 compared to Spedkost 1 for both boys (75% in Spedkost 3 compared to 49% in Spedkost 1) and girls (79% in Spedkost 3 compared to 50% in Spedkost 1) (**Figure 3b**).

A decrease in introduction to solid foods before 4 months of age was observed for both genders from Spedkost 1 to Spedkost 3. For boys a decrease from 27% being introduced to solid foods before 4 months of age in Spedkost 1 to 6% in Spedkost 3 was seen. For girls, the percentage that was introduced to solid foods before 4 months of age decreased from 19% in Spedkost 1 to 6% Spedkost 3 (**Figure 3c** and **3d**). The odds of being introduced to solid foods before 4 months of age rather than at 5.5 months of age or later were significantly higher in Spedkost 1 than in Spedkost 3 for both boys (OR=5.4, (3.9, 7.6, p<0.001)) (**Figure 3c**) and girls (OR=4.1, (2.8, 5.8, p<0.001)) (**Figure 3d**). For both genders, the proportion of infants introduced to solid foods at 4-5 months of age increased significantly between Spedkost 2 and Spedkost 3 from 61% to 79% for boys and from 66% to 75% for girls. The odds of being introduced to solid foods at 4-5 months of age rather than later were significantly higher in Spedkost 3 than in Spedkost 2 for both boys (OR=2.1 (0.8, 2.5, p<0.001)) (**Figure 3c**) and girls (OR=1.7 (1.35, 2.1, p<0.001)) (**Figure 3d**).

The development in infant feeding practices between the three Spedkost surveys was similar for boys and girls, however somewhat more boys than girls were introduced to solid foods at 4-5 months of age, and slightly more girls than boys were introduced to solid foods at 5.5 months of age or later.

4.5.2 Maternal age

The rate of exclusive breastfeeding at 4 months of age increased significantly between Spedkost 1 and Spedkost 3 for mothers aged 24 years or younger (from 22% in Spedkost 1 to 33% in Spedkost 3), but decreased significantly for mothers aged 25-34 years (from 46% in Spedkost 1 to 38% in Spedkost 3) and 35 years or older (from 55% in Spedkost 1 to 42% in Spedkost 3) (**Figure 4a**). From Spedkost 1 to Spedkost 3 the proportion of exclusively breastfed infants at 5.5 months of age increased significantly for the youngest mothers (from 3% to 9%) and decreased significantly for mothers aged 25-34 years (from 11% to 4%) and for mothers 35 years and older (from 15% to 7%) (**Figure 4a**). The proportion of breastfed infants at 6 months of age increased with increasing maternal age for all time points. The proportion of breastfed infants at 6 months of age in Spedkost 3 (77%) was only significantly lower than in Spedkost 1 (82%) and Spedkost 2 (82%) for mothers aged 25-34 years (**Figure 4a**).

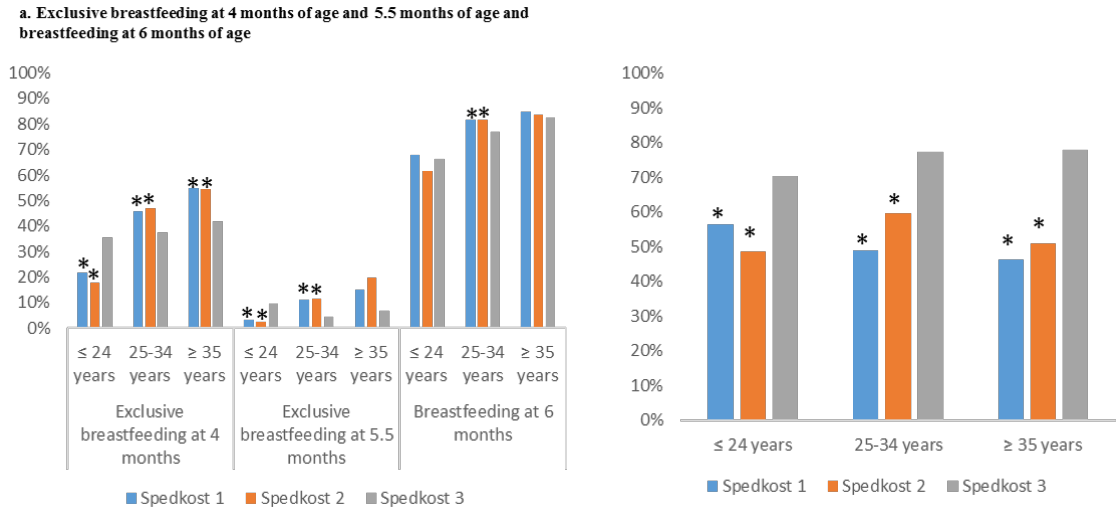

Figure 4. Exclusive breastfeeding at 4 months of age and 5.5 months of age, breastfeeding at 6 months of age and introduction to vitamin D supplements in Spedkost 1 (n=2383), Spedkost 2 (n=1986) and Spedkost 3 (n=2180). *= proportion was significantly different from Spedkost 3

The proportion of infants introduced to vitamin D supplements at the age of 6 weeks or younger increased between time points for all categories of maternal age and was significantly higher in Spedkost 3 compared to both Spedkost 1 and Spedkost 2 for all three age groups (**Figure 4b**). Between Spedkost 1 and Spedkost 3, the proportion of infants that were introduced to vitamin D supplements before or at the age of 6 weeks increased from 56% to 70% for mothers at 24 years or younger, from 49% to 77% for mothers between 25 and 34 years and from 46% to 78% for mothers at 35 years or older (**Figure 4b**).

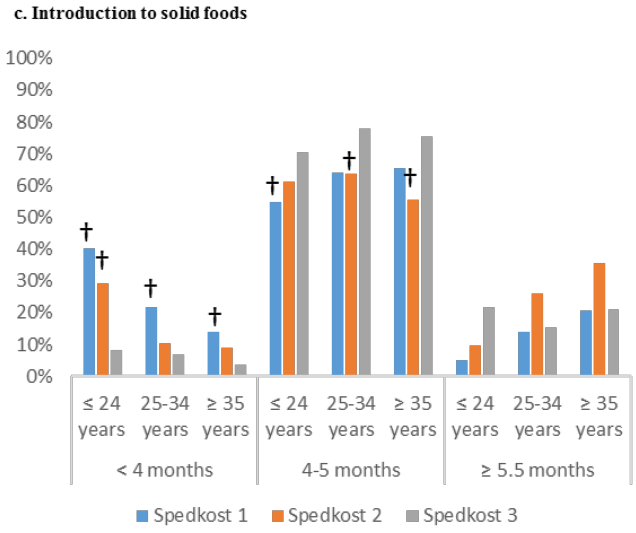

Figure 4c. Maternal age and introduction to solid foods in Spedkost 1 (n=2383), Spedkost 2 (n=1986) and Spedkost 3 (n=2180). †= the odds of introducing at this age rather than ≥ 5.5 months of age were significantly different from Spedkost 3 (α=0.025), calculated with multinomial logistic regression.

For introduction to solid foods before 4 months of age, the greatest decrease between Spedkost 1 and Spedkost 3 was seen for mothers aged 24 years or younger (from 40% to 8%) (**Figure 4c**). However, the odds of introducing solid foods before the age of 4 months rather than at 5.5 months of age or later were significantly higher in both Spedkost 1 and Spedkost 2, compared to Spedkost 3 for all categories of maternal age. Most infants were introduced to solid foods at 4-5 months of age for all categories of maternal age at every time point. The odds of introducing solid foods at 4-5 months of age rather than later were

significantly higher in Spedkost 3 than Spedkost 2 for mothers aged 25-34 years (OR=2.1 (1.7, 2.5, p<0.001)), and for mothers aged 35 years and older (OR=2.3 (0.8, 1.6, p<0.001)). For mothers aged 24 years or younger, the odds of introducing solid food at 4-5 months of age rather than later were lower in Spedkost 3 than in Spedkost 2, but this result was not significant (OR=0.52 (0.3, 1.0, p=0.037)). The proportion of mothers aged 24 years or younger introducing solid foods at 5.5 months of age or later increased from Spedkost 1 (5%) and Spedkost 2 (10%), to Spedkost 3 (22%). For the mothers of higher age these proportions decreased between Spedkost 2 and Spedkost 3 (**Figure 4c**).

4.5.3 Maternal education

The proportion of mothers with higher education who exclusively breastfed when the infant was 4 months of age and 5.5 months of age was significantly lower in Spedkost 3 (40% and 5 % respectively) compared to Spedkost 1 (56% and 15 % respectively) and Spedkost 2 (53% and 14%) (**Figure 5a**). For mothers with lower education rates of exclusive breastfeeding at 4 months of age and at 5.5 months of age were relatively stable between surveys at approximately 35% and 5-10 % respectively (**Figure 5a**). In all three surveys, there was a higher proportion of the mothers with higher education who exclusively breastfed their infant at 4 months of age and at 5.5 months of age compared to mothers with lower education, but the differences between maternal educational levels were smaller in Spedkost 3 compared to the previous surveys (**Figure 5a**). Among mothers with lower education, the proportion of breastfed infants at 6 months of age were only significantly lower in Spedkost 3 (65%) compared to Spedkost 1 (73%), and not compared to Spedkost 2 (68%) (**Figure 5a**). For mothers with higher education the proportion of breastfed infants at 6 months of age was significantly lower in Spedkost 3 (82%) compared to both Spedkost 1 (89%) and Spedkost 2 (87%) (**Figure 5a**).

An increase in the introduction to vitamin D supplements at 6 weeks of age or younger from Spedkost 1 to Spedkost 3 was observed for both groups of maternal education. The proportion that were introduced to vitamin D supplements at 6 weeks of age or younger increased significantly for mothers with lower education (from 49% in Spedkost 1 to 68% in Spedkost 3), and for mothers with higher education (from 50% in Spedkost 1 to 80% in Spedkost 3) (**Figure 5b**).

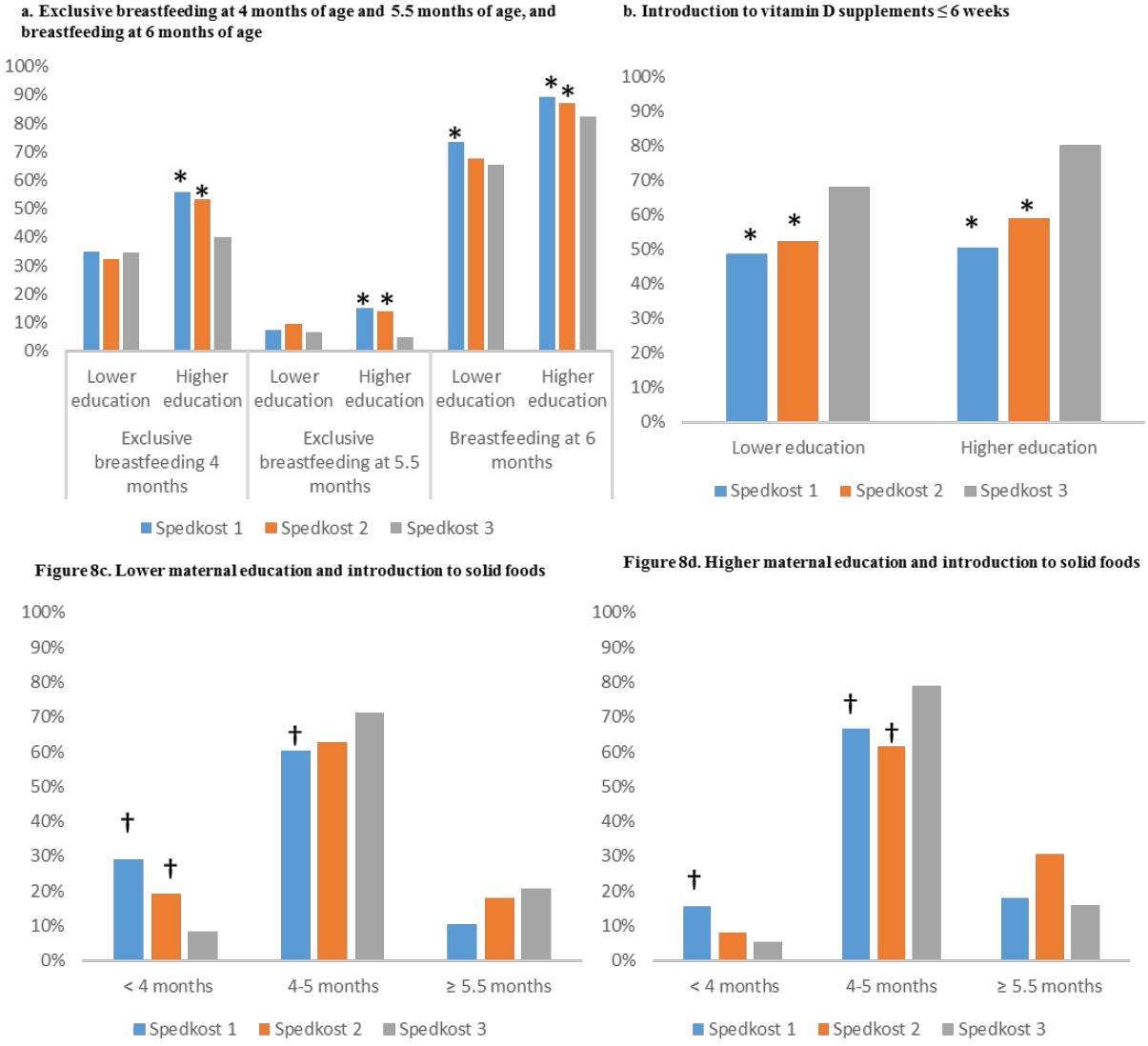

Figure 5. Exclusive breastfeeding at 4 months of age and 5.5 months of age, breastfeeding at 6 months of age, introduction to vitamin D supplements and introduction to solid foods according to maternal education in Spedkost 1 (n=2383), Spedkost 2 (n=1986) and Spedkost 3 (n=2180). *= proportion was significantly different from Spedkost 3 (α=0.025). †= the odds of introducing at this age rather than ≥ 5.5 months of age were significantly different from Spedkost 3 (α=0.025), calculated with multinomial logistic regression.

For both categories of maternal education it was observed that it was most common to introduce solid foods at 4-5 months of age in every survey (**Figure 5c** and **5d**). The odds of introducing solid foods at 4-5 months of age rather than later, were significantly lower in Spedkost 3 than in Spedkost 1 for mothers with lower education (OR=0.6 (0.5, 0.8, p<0.001)). The corresponding odds for mothers with higher education were significantly higher in Spedkost 3 compared to Spedkost 1 (OR=1.4 (1.1, 1.7, p=.008)) and Spedkost 2 (OR=2.5 (2.1, 3.0, p<0.001)). The proportion of mothers with lower education introducing solid foods at 5.5 months of age or later increased from Spedkost 1 (10 %) and Spedkost 2 (19%), to Spedkost 3 (21 %) (**Figure 5c**). For mothers with higher education this proportion was

relatively similar for Spedkost 1 (18%) and Spedkost 3 (16%), but lower for Spedkost 3 compared to Spedkost 2 (31%) (**Figure 5d**).

4.5.4 Maternal tobacco habits at 6 months of age

Among mothers who used tobacco when the infant was 6 months of age, the proportion who exclusively breastfed at 4 months of age decreased from 26% in Spedkost 1 to 18% in Spedkost 3, but this decrease was not significant (**Figure 6a**). Among mothers not using tobacco the proportions who exclusively breastfed their infant at 4 months of age were significantly lower in Spedkost 3 (41%) than in Spedkost 1 (51%) and Spedkost 2 (50%) (**Figure 6a**). When the infant was 5.5 months of age, the proportion of mothers not using tobacco exclusively breastfeeding their infant was significantly lower in Spedkost 3 (6%) than in Spedkost 1 (13%) and Spedkost 2 (14%). Among mothers tobacco using mothers the rates of exclusive breastfeeding at 5.5 months of age was only significantly higher in Spedkost 1 (5%) compared to Spedkost 3 (1%). Breastfeeding rates at 6 months of age also decreased between Spedkost 1 and Spedkost 3 for both mothers not using tobacco (from 87% in Spedkost 1 to 81% in Spedkost 3) and for the mothers using tobacco (63% in Spedkost 1 to 49% in Spedkost 3) (**Figure 6a**). Significantly more infants had been introduced to vitamin D at 6 weeks of age or younger in Spedkost 3 than in Spedkost 1 and in Spedkost 2 for both categories of maternal tobacco habits (**Figure 6b**). The increment from Spedkost 1 to Spedkost 3 was slightly higher among mothers not using tobacco when the infant was 6 months of age (from 49% to 77%), than among mothers using tobacco (from 49% to 72%).

Among mothers not using tobacco when the infant was 6 months of age the proportion who introduced solid foods before 4 months of age decreased between Spedkost 1 and Spedkost 3 (from 19% to 5%). Among mothers who used tobacco, the proportion who introduced solid foods before 4 months of age also decreased from Spedkost 1 to Spedkost 3 (from 34% to 12%) (**Figure 6c** and **6d**). Among mothers who used tobacco the odds of introducing solid foods before 4 months of age rather than at 5.5 months of age or later, were significantly higher in Spedkost 2 than in Spedkost 3 (OR=2.3 (1.2, 4.5, p=.012)). For mothers not using tobacco, this odds were not significant (OR=1.1 (0.9, 1.5, p=0.395)). Introduction to solid foods at 4-5 months of age increased from Spedkost 1 to Spedkost 3 for mothers who used tobacco (from 59% to 75%) (**Figure 6d**). The proportion who introduced solid foods at 4-5

months of age also increased for mother not using tobacco (from 65% in Spedkost 1 to 77% in Spedkost 3) (**Figure 6c**). The odds of introducing solid foods at 4-5 months, rather than later was significantly higher in Spedkost 3 compared to Spedkost 2 for mothers that did not use tobacco (OR=2.0 (1.7, 2.4, p<0.001)). An equivalent result was not observed among mothers that used tobacco. Introduction to solid foods at 5.5 months of age or later increased from Spedkost 1 to Spedkost 3 for mothers that used tobacco (from 8% to 13%) (**Figure 6d**) and for mothers that did not use tobacco (from 16% to 18%) (**Figure 6c**).

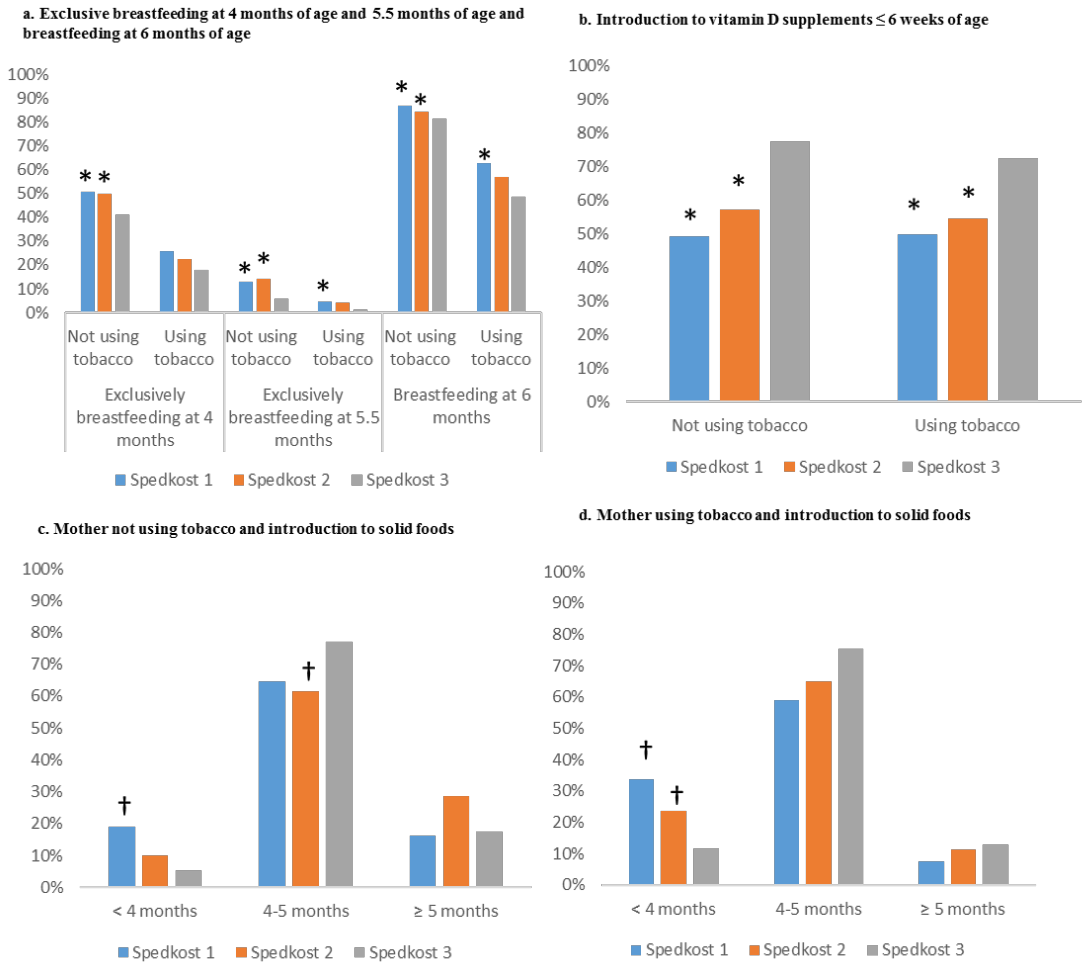

Figure 6. Exclusive breastfeeding at 4 months of age and 5.5 months of age, breastfeeding at 6 months of age, introduction to vitamin D supplements and introduction to solid foods according to maternal tobacco habits in Spedkost 1 (n=2383), Spedkost 2 (n=1986) and Spedkost 3 (n=2180). *= proportion was significantly different from Spedkost 3 (α=0.025). †= the odds of introducing at this age rather than ≥ 5.5 months of age were significantly different from Spedkost 3 (α=0.025), calculated with multinomial logistic regression.

5 Discussion

Methodological concerns in terms of strengths and limitations with the chosen methods and design, sample characteristics and statistical considerations will be discussed in this chapter. Furthermore, a discussion of the results in relation to relevant literature will be presented.

5.1 Dietary assessment

Assessment of dietary intake the first half year of life can be challenging, as it is a period where the diet is under rapid change from a diet consisting mostly of breastmilk or infant formula, to gradually adapting to the diet of the family (58). Breastmilk intake can be difficult to quantify (59). Collecting exclusive breastfeeding data retrospectively 2 years post-delivery has given variating results regarding validity (60), but another study observed that data collected within 3 years post-delivery was of good validity, however the length of recall time reduced the ability to recall breastfeeding duration accurately (61). Around the age of 6 months introduction to solid foods is recommended and quantification of small tastings can be difficult, especially if the whole serving is not eaten or food is spilled, as often is the case with infants (58). At 6 months of age the diet does usually not consist of a great number of foods, which can ease recalling of the dietary intake. However, the duration of the time period that is reported either retrospectively or prospectively can influence the parents' ability to answer accurately.

Weighed food records, 24-hour recalls and food frequency questionnaires (FFQ) are all frequently used dietary assessment methods among infants (59, 62). Choice of method depends on the purpose of the assessment, the size of the population and the resources available (62). Dietary assessment is usually resource intensive work no matter what method is chosen, for instance in terms of development of an instrument and processing of collected data. Electronic instruments have made it possible to reduce the processing work for the researcher, especially if a closed format is used (62). However, a closed format can leave out important information about the diet (62).

In 24-hour recalls, the respondent recall the dietary intake for the previous 24 hours (62). The method is useful when the purpose is to obtain detailed information about current dietary intake and it is possible to probe for foods that are usually left out or easy to forget in the

reporting (62). One 24-hour recall for each participant can be adequate when the purpose is to describe the average intake of a population (62). For infants, the specific time period that the dietary intake is assessed makes the 24-hour recall sensitive to sudden changes in daily life and diet, such as the rapid changes that occurs in the diet when solid foods are introduced (59, 62). Recall bias can also be a problem with the 24-hour recall method as data are collected retrospectively (62). Moreover, data collection from only one 24-hour recall can overestimate the proportions of exclusive breastfeeding in a population, especially if several variables assessing the feeding practices are not included (63).

In food records participants are asked to consecutively log (and sometimes weigh) the dietary intake for a specific number of days (62). Weighted food records will give the most detailed information about the dietary intake, and consecutive record keeping does not rely on the participants' memory (62). However, the food record can be experienced as too burdensome and time-consuming for the respondent (59, 62), and it can influence the participant's diet during the study period (59). Furthermore, the time period that the data are collected is sensitive for the same changes in the daily life and diet as the 24-hour recall (59, 62).

For larger scale epidemiological surveys, the FFQ/SFFQ is usually the preferred method (58), as it aims at measuring the habitual intake over a longer time period (62). The respondent is usually asked to report the frequency of consumption of certain foods over a specified period of time (62). The development of an SFFQ can be extensive work, but the closed format makes the processing relatively cost- and time-efficient (62). As the diet is quite limited at 6 months of age the SFFQ can be suitable for this age group (62). With the SFFQ it is possible to cover a great variety of foods and drinks, including specific types of foods or brands for selected infant foods (59, 62). Regardless, it is not possible to capture all variations in the diet in a generic SFFQ with a defined list of foods, and important details can therefore be left out (62). The results are prone to several measurement errors, such as recall bias because the SFFQ is a retrospective dietary assessment method (62). Misreporting intentionally or unintentionally can lead to unpredictable consequences for the results (64). No matter what dietary assessment method that is used, estimation of portion sizes is challenging for parents (59, 65). In the SFFQ, portion size has to be estimated as an average over a period of time, which can be more challenging than estimation of one specific serving for instance in the 24-hour recall (62). On a group level, validation studies have shown that the median intakes of energy and nutrients estimated with the SFFQ were higher than the intake estimated with 7-

day weighed food records in a sample of Norwegian infants aged 12 months (58) and with two 24-hour recalls in Hispanic infants aged 0-24 months (66).

In order to make the Spedkost surveys as comparable over time as possible, the same dietary method was chosen for all three surveys. Moreover, the SFFQ was regarded as most suitable for assessment of dietary intake as the purpose was to assess dietary habits retrospectively over a period of 6 months. Neither of the SFFQs used for the three Spedkost 6 months surveys were validated. The infant's diet usually consists of mostly breastmilk or infant formula the first half year of life and the recall period is only 6 months in the Spedkost surveys. As mentioned, higher validity of breastfeeding data as the length of recall period decreases has been observed (61), thus it was reasonable to believe that the breastfeeding data collected in the Spedkost surveys were of high quality.

The Spedkost 1-SFFQ was used as a template for the questionnaires in the subsequent surveys. From Spedkost 2 to Spedkost 3, several probing questions were included to more accurately categorize exclusive breastfeeding. Moreover, the master question about whether the infant received breastmilk and additions to breastmilk at 6 months of age or not was revised between the surveys. The alternatives in the breastmilk question used in Spedkost 2 were more complex and detailed compared to Spedkost 1 and Spedkost 3, which might have made the question difficult for the respondents to interpret and report correctly. In both Spedkost 2 and Spedkost 3, it was possible to answer the SFFQ electronically. When questionnaires are paper-based, missing data can become a problem (67). For the questionnaires answered electronically it is possible to reduce the magnitude of missing data with mandatory questions. The rate of participants who answered electronically were 15% in Spedkost 2 (68) and 91% in Spedkost 3.

5.2 Design

All three Spedkost surveys were longitudinal studies assessing dietary habits in the same infants at 6 and 12 months of age. Dietary intake was measured at one time point in the data used in present thesis (i.e. when the infant was 6 months old), hence the Spedkost 6 months data used can therefore be regarded as cross-sectional data. With a cross-sectional study it is possible to investigate several exposures and outcomes in one study, and as data are only collected once there is no follow-up time. Cross-sectional studies are therefore often cost- and

time-efficient, compared to for instance a cohort study (69). However, when there is only one time point it is not possible to differ between cause and effect, and one can therefore not draw causal conclusions from cross-sectional studies, only associations (69).

5.3 Sample

Validity is a term used to describe to which degree the study measures what it was intended to measure (70). A study has high internal validity if the observed results represent the truth for the study population (70), and the external validity of the study describes the ability to extrapolate the results beyond the study sample (70). The validity can be threatened by various types of bias, such as information bias and selection bias (70). Information bias is related to measurement errors during data collection, for example when the dietary assessment is conducted retrospectively and recall bias occurs (71). Selection bias occurs when the study sample deviates too much from the target population, for instance when the responding participants differs either from the non-responding participants or from the population they were intended to represent (71). Low participation rates can therefore compromise the external validity (71). Even with high participation rates in surveys, what characterizes the non-respondents of the surveys is often unknown (72). Non-responders in the general Norwegian population have been associated with younger age, a history of smoking and living in a rural area (73). Moreover, the likelihood of participating in epidemiological surveys has been found to increase with socioeconomic status, for instance in terms of higher education, both in Norway and in other parts of the world (72, 74). Monetary incentives (75), reminders by mail (75) and telephone (76), and a web-based instrument (72) have all been associated with increased participation rates in studies.

Extensive work was done in the pilot studies prior to the main Spedkost 3 survey to investigate which efforts to make in order to obtain the highest participation rate possible. In Spedkost 1 and Spedkost 2, participants were randomly selected to receive a monetary prize. This was changed in Spedkost 3, as rewarding each responding participant with a gift card increased participation rates relative to a lottery in the pilot studies. In general, participation rates in epidemiological studies have declined the last 30 years (72). However, the participation rates were high in all three Spedkost surveys, which amongst several factors can be attributed to the offered incentive, follow-up reminders by mail and telephone, and the low participant burden in terms of the estimated time spent completing the SFFQ.

The development in background characteristics between the surveys for infant, mother and father was similar to what was observed for the Norwegian population in general (54-56). However, some background characteristics for the Spedkost samples were consistently different from the general Norwegian population. Compared to the national statistics for each study year, mothers participating in the Spedkost surveys had a slightly higher age and a higher educational level, and more mothers were married or cohabitants (54, 55). It was not possible to include only women who have given birth the specific years for all national statistics, therefore national statistics for maternal education included all women born in Norway from 16 to 49 years (55) and for maternal work situation it included all women in Norway aged 61 years or younger, excluding immigrants (56). Our samples will consequently differ from the Norwegian population regarding maternal education and maternal work situation. The higher educational level in the Spedkost samples compared to the national statistics, might therefore be affected by skewness in maternal age, as few women in Norway become mothers before the age of 24 (54).

Fewer women were multiparous in Spedkost 2 and in Spedkost 3 compared to national statistics for each study year, but parity decreased also for the general Norwegian population (54). In all three Spedkost samples, the average infant birth weights were slightly higher than for the Norwegian population (54). National statistics regarding maternal snuff habits were not available, however data show that the daily use of snuff among women has increased the last years (57). The proportion of mothers smoking at the beginning and at the end of pregnancy corresponded well with the national statistics (54). As several background characteristics deviate from the national statistics, generalizing of the results must be done carefully (70). Moreover, dietary habits were only assessed in infants of Scandinavian born mothers in the Spedkost surveys, and the results are therefore not generalizable to the immigrant population of Norway.

5.4 Statistical considerations

Binary and multinomial logistic regression were conducted to compare the results from Spedkost 1 and Spedkost 2, to the results from Spedkost 3. Multiple analyses were conducted, which increased the probability of observing significant results caused by random errors (type I error) (77). To reduce the chance of making a type I error, the significance levels were

Bonferroni adjusted when multiple analyses were conducted (78). For introduction to different types of solid foods during the first half year of life, it was decided to not Bonferroni adjust the significance level for the overall p-value. We assumed that there was some dependence between the different types of solid foods, but that this effect was modest. Also, introduction to different types of solid foods during the first half year of life was investigated in an exploratory manner as it was not one of the main aims, and interesting findings could have been missed if Bonferroni adjustment was used.

All three Spedkost surveys had large sample sizes, which contributed to a high test power (77). A high test power reduces the probability of not being able to detect true, significant differences between the groups (type II error) (77). However, a large sample size also increases the likelihood of detecting significant differences between the surveys when the difference is too small to be of real life interest (77). To reduce the probability of making a type II error due to few mothers smoking when the infant was 6 months of age in the Spedkost 3 survey, maternal smoking habits at 6 months of age and maternal snuff habits at 6 months of age were combined in Spedkost 3. When the patterns in infant feeding practices were analysed according to maternal smoking habits and maternal snuff habits, infant feeding practices were considered to be relatively similar for the two groups.

5.5 Discussion of results

5.5.1 Trends in infant feeding practices

Generally, infant feeding practices in the Spedkost surveys were mainly in line with the national dietary recommendations for infants each study year (22, 23). Some changes in dietary intake among infants born in 1998 to infants born in 2018 were observed.

Exclusive breastfeeding

The proportion of exclusively breastfed infants at 1 week of age to 3 months of age decreased from Spedkost 1 to Spedkost 3. Between Spedkost 2 and Spedkost 3 the proportions of exclusively breastfed infants did at these ages not change remarkably. Between the age of 3.5 months and 4 months of age, a sharp decline in the proportions of exclusively breastfed infants were observed for all three Spedkost surveys, from approximately 60% being exclusively breastfed at 3.5 months of age to about 40% at 4 months of age. Thus, exclusive

breastfeeding at 4 months of age in Spedkost 3 is far below the goal of 60% exclusive breastfeeding at this age as stated in the Norwegian Action Plan for a Healthier Diet (47). The same decrease in the proportion of exclusively breastfed infants between 3.5 months of age to 4 months of age was also observed in the breastfeeding survey in Norway from 2013, where 61% of the infants were exclusively breastfed at 3.5 months of age, while 44% were exclusively breastfed at 4 months of age (24). In that survey, dietary intake was assessed retrospectively from birth when the infant was 12 months of age. Consequently, estimation of exclusive breastfeeding duration was done 6 months or more after exclusive breastfeeding ceased which might have reduced the accuracy of reporting. Exclusive breastfeeding rates of about 40% is in line with other research from the MoBa cohort, where 44% were exclusively breastfed at 4 months of age (25). This sample included children born between 2002 and 2005 and breastfeeding practices were assessed when the infant was 6 months of age.

The InnBaKost survey aimed at assessing infant feeding practices among Norwegian infants of Somali or Iraqi family origin (79). The InnBaKost survey at 6 months of age was a cross-sectional study and used a modified version of the SFFQ from the Spedkost 2 survey among infants born in 2013 and 2014 (79). In that survey only 7% of the Norwegian-Somali infants and only 10% of the Norwegian-Iraqi infants were exclusively breastfed at 4 months of age (79). The low level of exclusive breastfeeding was related to high level of supplementation of water and infant formula, as 32% and 24% of the Norwegian-Somali and Norwegian-Iraqi infants respectively were given infant formula at 1 month of age (79). In Sweden exclusive breastfeeding rates at 4 months of age decreased from 69% in 1998 to 51% in 2016 (27), while at 4 months of age, 56% of the infants were exclusively breastfed in Denmark in 2016 (29). Compared to the results from Spedkost 3, rates of exclusive breastfeeding at 4 months of age were higher in Sweden and in Denmark, but these differences could be caused by methodological issues which will be discussed later.

The proportion of exclusively breastfed infants throughout the first half year of life (i.e. at 5.5 months of age) decreased from 11-12% in Spedkost 1 and in Spedkost 2, to 5% in Spedkost 3. Compared to the goal in the Norwegian Action Plan for a Healthier Diet (47) of 25% exclusive breastfeeding throughout the first half year of life, the rate in Spedkost 3 is far below this goal (47). The proportion of exclusively breastfed infants at 5.5 months of age in Spedkost 3 is also lower than what was observed in the Norwegian breastfeeding survey in

2013, where 17% were exclusively breastfed this age (24). In the MoBa cohort, exclusive breastfeeding rate at 5.5 months of age was not assessed. However, at 5 months and 6 months of age 17% and 2% respectively, were exclusively breastfed (25). In the InnBaKost study 1% of both the Norwegian-Somali and Norwegian-Iraqi infants were exclusively breastfed at 5.5 months of age (79). In Denmark, from 2012 to 2016 a small increment in exclusive breastfeeding rates at 6.5 months of age of 10% to 12% were observed (29). Exclusive breastfeeding rates at 6 months of age decreased from 39% in 1998 to 15% in 2016 in Sweden (27).

Different definitions of exclusive breastfeeding and different methods used in collection of data on exclusive breastfeeding can result in differences between studies and countries. In the Spedkost surveys the parents alone complete the questionnaire, and when exclusive breastfeeding status was assessed in the Spedkost surveys only infants who had not been introduced to any types of foods or drinks were regarded as exclusively breastfed. In MoBa and InnBaKost breastfeeding data were also collected with a questionnaire when the infant was 6 months of age (25, 79). The definitions for exclusive breastfeeding in the breastfeeding survey from 2013, in MoBa and in InnBaKost were the same as those used in Spedkost 2 and Spedkost 3 (23, 25, 79). In Sweden and in Denmark national exclusive breastfeeding data are collected from journals in public health care centres where infant feeding practices are assessed at control visits with parents, and immigrant mothers are not excluded (29, 80). As exclusive breastfeeding status is assessed at public health centres, the matter is open for interpretation and discussion between the health personnel and the parents. Moreover, in 2011 the infant feeding recommendations in Sweden were revised and small tastings were recommended if the infant seemed interested in solid food (80). Infants in Sweden are defined as exclusively breastfed even if small tastings of solid foods are offered, as long as no full portions of food are given regularly (80). The definition of exclusive breastfeeding used in Denmark includes water and one meal of infant formula per week (29), which also is less strict than the definition used in the Spedkost surveys. The Danish infant nutrition recommendations state that the infant should be predominantly breastfed the first 6 months of life (81) and introduction to solid foods is not recommended until 6 months of age (81).

Exclusive breastfeeding was defined somewhat differently in Spedkost 1, than in Spedkost 2 and Spedkost 3, which can explain at least some of the differences in exclusive breastfeeding rates across the years from 1998 to 2018. Water was included in the definition used in Spedkost 1, while this was not included in the definitions used in used in Spedkost 2 and in

Spedkost 3. This is an adaption of the definition of exclusive breastfeeding from WHO (52), which also was adopted by Sweden in 2004 (80), and might have contributed to the mentioned decrease in exclusive breastfeeding observed in Sweden. However, this definition was as mentioned above changed in 2011 (80). When exclusive breastfeeding was categorized according to the definition used in Spedkost 1, the rates were mostly 4-5 percentage points higher in Spedkost 2 and about 0.5-3 percentage points higher in Spedkost 3. As mentioned, the alternatives the respondents were exposed to in the master question about whether the infant received breastmilk and additions to breastmilk at 6 months of age or not were more complex in Spedkost 2 than in Spedkost 1 and Spedkost 3, and can have caused the participants to give more accurate answers of exclusive breastfeeding in Spedkost 1 and Spedkost 3 compared to Spedkost 2. Moreover, in Spedkost 1 and in Spedkost 2, if respondents reported that the infant only received breastmilk at 6 months of age in the master question regarding breastmilk, respondents were not requested to answer the questions whether the infant had received infant formula and solid foods or not at this age. This was changed in Spedkost 3, and all participants were asked questions about infant formula and solid foods even if they had previously reported in the questionnaire that the infant only received breastmilk. Because of these methodological differences, the proportion of exclusive breastfeeding might have been overestimated in both Spedkost 1 and Spedkost 2, and in Spedkost 2 the master question regarding breastmilk might also have contributed to such overestimation. However, there is a lack of certainty to which degree these methodological differences have affected the results.

Another contributing factor to the development within exclusive breastfeeding rates in the Spedkost surveys is the revision of infant nutrition recommendations launched in 2016 (10), when the wording of the exclusive breastfeeding recommendation was altered. The previous recommendations from 2001 clearly stated that “infants should, if possible, be exclusively breastfed until 6 months of age” (23), while the recommendations from 2016 states that “it is safe and beneficial to exclusively breastfeed through the first half year of life if the mother and child are satisfied with this” (10). In the recommendations from 2016 parents are also in a greater degree encouraged to introduce solid foods from the age of 4 months if the infant seems to be in need of more food (10). Earlier the main recommendation was to wait until the infant reached the age of 6 months (23). The latter recommendation for duration of exclusive breastfeeding can be understood as more open for interpretation by the parents themselves

than the recommendation from 2001, and might also create insecurity if exclusive breastfeeding throughout the first half year of life is regarded as unsafe.

These alterations in infant dietary recommendations can both have influenced what advice health personnel gives parents and what decisions parents make regarding exclusive breastfeeding and introduction to solid foods. Some research has indicated that between 4-6 months of age there is a window of opportunity for introduction to solid foods where food acceptance in the infant can be increased and the risk of feeding problems later in life can be reduced (82, 83). SACN concluded in their report from 2018 that the evidence for such a critical window was limited, and that no negative consequences are associated with delaying introduction to solid foods until 6 months of age (15). EFSA has in their draft for the "Scientific opinion on the appropriate age for the introduction of complementary feeding into an infant's diet" concluded that generally exclusive breastfeeding provides most infant in a European setting with sufficient energy and nutrients the first half year of life (31). However, the appropriate age to introduce solid foods to infants depends on individual characteristics of the infant, and there is insufficient evidence to conclude with an exact age between 3-4 and 6 months of age where introduction to solid foods is appropriate for all European infants (31). On the other hand, exclusive breastfeeding until 6 months of age has been suggested to be protective of gastrointestinal infections (84) also in present Norwegian setting (85). However, this study was a Belarusian nested observational cohort study, where the comparison was exclusive breastfeeding for either 3 or 6 months (84). The Norwegian recommendation is to introduce solid foods at the earliest at 4 months of age, and whether the decrease in exclusive breastfeeding rates seen between 4 months and 5.5 months of age from Spedkost 2 to Spedkost 3 is associated with health-related consequences for the infants is not known. As a conclusion, it appears that there is no scientific consensus regarding the optimal duration of exclusive breastfeeding and the exact age when solid foods is appropriate to introduce in the European setting.

Breastfeeding

Regarding any breastfeeding, the proportions for the different ages were relatively stable between the three Spedkost surveys. Almost all mothers (97% to 99%) initiated breastfeeding (i.e. at 1 week of age), which is similar to what was observed in the breastfeeding survey in 2013 and in the MoBa cohort where 95% and 97% of the participating mothers initiated breastfeeding respectively (24, 25). In Sweden 95% of the infants were breastfed at 1 week of

age in 2016 (27). Data on any breastfeeding is not collected on a national level in Denmark, but a study assessing infant feeding practices in the Western part of Denmark observed that 97% of the infants were breastfed at 1 week of age in 2008 (86). In the InnBaKost survey 98% to 96% of the infants were breastfed at 1 week of age (79). In all three Spedkost surveys, close to 90% of the infants were still breastfed at 2 months of age, and at 4 months of age about 82-85% were breastfed. In 2013 the rates of breastfeeding at 2 and 4 months of age were 89% and 81% respectively (24), while in MoBa breastfeeding rates at these ages were 94% and 87% respectively (25). In Sweden 84% and 74% of the infants were breastfed at 2 months and 4 months of age respectively in 2016 (27).

At 6 months of age approximately 80% were still breastfeeding in all three Spedkost surveys and similar rates were also observed in the MoBa cohort (25). This is higher than what was observed in the breastfeeding survey from 2013, where 71% were breastfed at this age (24). Seventy-nine percent of the Norwegian-Somali infants and 58% of the Norwegian-Iraqi infants were breastfed at 6 months of age in the InnBaKost survey (79). In 2016 the proportion of breastfed infants at 6 months of age in Sweden (64%) (27) were lower than in the Spedkost surveys, which possibly could be explained by the mentioned differences in definitions of exclusive breastfeeding and in the methods for collection of exclusive breastfeeding data.

Overall, the proportions of breastfed infants remained stable between the three Spedkost surveys and breastfeeding rates are generally high in the Nordic countries, compared to rates for instance in the UK (30) or the US (28). Since the 1970s breastfeeding has been promoted and supported in both Norway (20) and Sweden (21). In modern times a policy that includes promotion and protection of breastfeeding has been central in maintaining breastfeeding rates (45). A relatively long maternity leave (46), a high number of BFI certified hospitals (45) and the ongoing work to certify public health centres (49) are also contributing factors to a high prevalence of breastfeeding in Norway.

Introduction to solid foods

The proportion of infants introduced to solid foods before 4 months of age decreased between the Spedkost surveys, and almost none were introduced to solid foods at this age in Spedkost 3, which is similar to the 5% observed in the study Early Food for Future Health conducted in

2016. This study aimed at assessing time of introduction to solid foods during the first half year of life in a sample of 740 Norwegian infants at 6 months of age (87). In the InnBaKost study only 2% of the Norwegian-Somali infants received solid foods before 4 months of age, compared to 13% among the Norwegian-Iraqi infants (79). An increase was observed for the introduction to solid foods at 4-5 months of age between the three Spedkost surveys. In the breastfeeding survey from 2013 56% of the infants were introduced to solid foods at 4-5 months of age (24), which is lower than the 77% observed in Spedkost 3. The proportions of infants introduced to solid foods at 5.5 months of age or later were similar for Spedkost 1 and Spedkost 3, but decreased from Spedkost 2 to Spedkost 3. In the breastfeeding survey from 2013 38% of the infants were introduced to solid foods at 5.5 months of age or later (24), which also is higher than the 17% observed in the Spedkost 3 survey (24). It is likely that this increase in the proportion of infants introduced to solid foods at 4-5 months of age is at least partly to due to the previously mentioned alteration in dietary recommendations for infants launched in 2016 (10). The recommendation from 2001 clearly stated that introduction to solid foods was recommended from 6 months of age (23), while the revised recommendation from 2016 encourages parents to introduce foods if the infant seems to need more food (10).

Across the Spedkost surveys a gradual change was also observed in types of solid foods introduced during the first half year of life and in the timing of introduction to the most commonly types of infant foods. More infants in Spedkost 3 than in the previous surveys were introduced to porridges made of oats/wheat/barley/rusk, fruits and potato/vegetables during the first half year of life. In Spedkost 1 and Spedkost 2, corn/rice/millet porridges were more frequently introduced than porridges made of oats/wheat/barley/rusk at 4 months of age, while in Spedkost 3 both porridges were equally common to introduce at 4 months of age. This development within types of porridges introduced might reflect for instance a change in assortment of porridges. The introduction to other types of solid foods like fruits, potato and vegetables, and fish also increased significantly across the Spedkost surveys. Significantly more infants were introduced to fruits and potato/vegetables at the age of 4 months in Spedkost 3, than in Spedkost 1 and Spedkost 2. In Spedkost 1, the age at introduction to banana and other fruits were asked separately, while these fruits were combined for Spedkost 2 and Spedkost 3. Age at introduction to potato and vegetables was combined in Spedkost 1, but in Spedkost 2 and Spedkost 3 these foods were asked separately. Although these were not great changes, it can have influenced what parents reported in these questions. Moreover, the assortment of industrial fruits products for infants has expanded greatly between surveys, and

now more readily edible fruits products, like mashed fruits, smoothies and pouches with fruits, have become increasingly available the last years (88). In the Early Food for Future Health study from Norway and with the ABIS-study from Sweden, porridge, fruits and vegetables were also the primary introduced types of foods (32, 87).

Introduction to vitamin D supplements

With regard to use of vitamin D supplements, an increase in the proportion of users of vitamin D supplements across the three surveys was observed. More than half of the sample in Spedkost 3 was introduced to vitamin D at 4-5 weeks of age, compared to 24% in Spedkost 1 and 31% in Spedkost 2. In the InnBaKost study 55% of the Norwegian-Somali infants and 40% of the Norwegian-Iraqi infants were introduced to vitamin D supplements between 4-5 weeks of age (79). Most western countries recommend that infants at 6 months of age or younger are supplemented with 400 IU (10 µg) vitamin D daily (89), which is similar to the Norwegian recommendations (10). At 6 months of age 85% of the infants were given dietary supplements in Spedkost 3, which was significantly higher than 80% in both Spedkost 1 and Spedkost 2. Amongst the infants in the InnBaKost survey, a vitamin D supplementation rate of 100% and 94% at 6 months of age was seen for Norwegian-Somali infants and Norwegian-Iraqi infants, respectively (79). In the Swedish ABIS-study, 99% of the infants were supplemented with AD-drops during the first year of life (90). In Spedkost 3, more infants were supplemented with vitamin D drops compared to cod liver oil, which is contrary to what was observed in the MoBa cohort where 54% and 29% were given cod liver oil and vitamin D drops respectively, during the first half year of life (42).

The Norwegian recommendations regarding supplementation of vitamin D have not been revised between surveys, but there has been a development in the variety of different vitamin D supplements available on the market. For instance, vitamin D drops were launched on the market between Spedkost 1 and Spedkost 2, and were therefore not available for the Spedkost 1 sample. Vitamin D drops can have been perceived or experienced by the parents as easier to give the infant, compared to spoons of cod liver oil. In Spedkost 3 a significantly higher proportion of the infants were given vitamin D drops at 6 months of age, compared to Spedkost 2. Increased awareness about vitamin D deficiency amongst infants can also have caused health care providers to give this more attention during control visits with parents. A low level of nutritional rickets in Norway has earlier been explained by both extensive

information about vitamin D supplementation given at public health clinics and a free offer of vitamin D drops to non-western immigrants (91).

5.5.2 Differences in infant feeding practices according to background characteristics

Infant gender

The same development across the three Spedkost surveys in infant feeding practices was observed for both boys and girls. In general, somewhat fewer infants were exclusively breastfed at 4 months of age in Spedkost 3 compared to Spedkost 1 and Spedkost 2, however the results were only significant for girls. The same pattern was also seen for exclusive breastfeeding at 5.5 months of age, and this difference was significant for both boys and girls. Breastfeeding at 6 months of age was relatively stable across surveys for both genders. For both boys and girls, significantly more infants were introduced to vitamin D supplements before or at 6 weeks of age in Spedkost 3 compared to Spedkost 1 and Spedkost 2, however there was little difference in the proportion of girls compared to boys being introduced to vitamin D supplements at 6 weeks of age or earlier.

The odds of introducing solid foods at 4-5 months of age rather than later were higher in Spedkost 3 compared to Spedkost 2 for both genders. Boys were introduced to solid foods earlier than girls in all three Spedkost surveys. Similar results have been observed for the infants aged 6 months in the Early Food for Future Health study (87). A positive association between male gender and introduction to solid foods because of hunger or higher weight was observed in a sample of infants between the age of 6 and 12 months in a UK infant feeding study (43). This study also observed that infants who were introduced to solid foods because of hunger had a significantly higher birthweight than those who were introduced for other reasons (43). The male infants in the Spedkost samples had a significantly higher birthweight than the female infants in all three surveys, which possibly could explain why they were introduced to solid foods earlier.

Maternal age and maternal education

The development in infant feeding practices stratified according to maternal age and maternal education showed the same patterns, and will therefore be discussed jointly. Differences in infant feeding practices between categories of maternal age and maternal education were

smaller in Spedkost 3, than in Spedkost 1 and in Spedkost 2. Increasing maternal age and high maternal education have been associated with higher compliance with infant feeding recommendations, such as longer duration of exclusive breastfeeding and breastfeeding in general (7, 36, 37, 39). This was also observed in Spedkost 1 and Spedkost 2 (42, 44) and for the infants in the Early Food for Future Health study (87). From Spedkost 2 to Spedkost 3 a significant decrease in exclusive breastfeeding rates at 4 months of age and at 5.5 months of age was observed among mothers aged 25-34 years, for mothers aged 35 years and older and for mothers with higher education. For the youngest mothers exclusive breastfeeding rates at 4 months of age and 5.5 months of age increased significantly from Spedkost 2 to Spedkost 3. The rate of breastfeeding at 6 months of age decreased significantly for mothers aged 25-34 years and for mothers with higher education from Spedkost 1 and Spedkost 2, to Spedkost 3. However, as there were fewer mothers aged 24 years and younger and 35 years and older than mothers aged 25-34 years, this may have influenced the ability to detect significant results (77).

Generally, the proportion of infants introduced to vitamin D supplements at 6 weeks of age or younger increased across time points for all categories of maternal age and maternal education. However, the proportions increased with both increasing maternal age and increasing level of maternal education.

The proportion who introduced solid foods at 4-5 months of age increased most across the three Spedkost surveys among mothers aged 25-34 years and for mothers aged 35 years or older. The proportion who introduced solid foods at 5.5 months of age or later decreased for mothers of the two highest age categories and for mothers with higher education. Introduction to solid foods at 5.5 months of age or later increased for mothers with lower education and for mothers aged 24 years or younger, which also corresponds with longer duration of exclusive breastfeeding among the younger mothers. The development across the Spedkost surveys in introduction to solid foods among younger mothers and mothers with lower education is contrary to what has been observed in other research, where lower maternal age and lower maternal education have been associated with earlier introduction to solid foods (40, 43).

As mentioned, increasing maternal age and maternal educational level have been associated with increased compliance to infant dietary recommendations, which also was observed for the Spedkost 1 and Spedkost 2 samples (42, 44). The alteration in the wording of both the

recommendation for duration of exclusive breastfeeding and in the recommendation for age at introduction to solid foods (10) might have influenced mothers of higher age and higher educational levels in a greater degree than mothers of lower age and lower educational levels. Another explanation for the results might be the possibility that mothers of higher age or with higher educational levels return to work earlier compared to mothers of lower age and with lower educational levels, complicating the continuation of exclusive breastfeeding. Prolonged paid maternity leave has been mentioned as an important factor to increase duration of exclusive breastfeeding in European countries (92). The maternity leave quota increased from 37 weeks with 100% payment in 2009 to 39 weeks with 100% payment in 2014 (93). As of July 2018 the quota has again been reduced, meaning mothers now are entitled to maximum 31 weeks of maternity leave with 100% payment or 37 weeks with 80% payment (46). However, the Spedkost 3 sample was not affected by this change, as the participating infants were born before this change in the length of maternal leave took effect.

The proportion of responding mothers aged 24 years or younger were lower compared to the national statistics (54) and one might question whether the responding younger mothers in the Spedkost surveys were more concerned about exclusively breastfeeding for a longer time compared to the non-responding younger mothers. For the general population of Norway, the educational level for women has increased (55), while parity has decreased over time (56). Increasing parity was associated with increased odds of exclusive breastfeeding at 4 months of age in the Spedkost 1 and the Spedkost 2 samples (42, 44), and increasing odds of breastfeeding at 6 months of age in the Spedkost 1 sample (44). Maternal education and parity have been ascribed to explain some of the differences observed in the duration of breastfeeding for maternal age in a sample of US women (94), and multiparity have been associated with continuation of breastfeeding in a meta-analysis (38). It is therefore possible that the differences in infant feeding practices observed for maternal age were mediated by both maternal education and parity. The proportions of exclusive breastfeeding and breastfeeding stratified by parity were not analysed in this thesis. Although the proportion of primiparous mothers was higher in Spedkost 3 than in Spedkost 1 and Spedkost 2, the proportions of mothers with two children was similar for Spedkost 2 and Spedkost 3. It was therefore assumed that the effect of parity would only be modest on exclusive breastfeeding and breastfeeding rates.

Maternal tobacco habits at 6 months of age

In all three surveys, mothers who used tobacco at 6 months of age were less compliant with infant dietary recommendations, in terms of lower rates of exclusive breastfeeding at 4 months and 5.5 months of age, lower rates of breastfeeding at 6 months of age, and not introducing vitamin D supplements at 6 weeks of age or before. Smoking has previously been described as a measure of socioeconomic status, and in high-income countries higher socioeconomic status has been related to better compliance to infant dietary recommendations (7, 95). In Spedkost 3 very few mothers smoked both during pregnancy and when the infant was 6 months of age, which is why maternal smoking and maternal snuff habits were combined. Patterns in infant feeding practices appeared relatively similar for both background characteristics, but it cannot be excluded that this combination influenced the results. Moreover, it is still possible that the proportions of mothers using tobacco were too small to detect significant differences between the surveys (77).

Exclusive breastfeeding and breastfeeding rates declined for both categories of maternal tobacco habits (users and non-users), but the differences observed between Spedkost 2 and Spedkost 3 were only significant for mothers who did not use tobacco. Tobacco exposure can decrease the production of breastmilk (96), and has been associated with decreased rates of exclusive breastfeeding the first half year of life in a sample of US infants (36). Maternal smoking has also been negatively associated with initiation and continuation of breastfeeding (38, 97). Regarding use of snuff, there is insufficient evidence to describe how snuff effects breastfeeding (98). The proportion of infants introduced to vitamin D supplements at 6 weeks of age or younger increased significantly for all maternal users and non-users of tobacco at 6 months of age in the present study. The proportion who introduced solid foods before infant age of 4 months decreased for mothers using and not using tobacco, however this decrease was only significant for mothers using tobacco. The early introduction to solid foods observed among smoking mothers is line with findings from the Early Food for Future Health study (87). There was an increase in introduction to solid foods at 4-5 months of age for both groups (i.e. users and non-users), but this increase was only significant for mothers not using tobacco.

6 Conclusion

The aim of this master thesis was to assess how the trends in exclusive breastfeeding, breastfeeding, introduction to complementary foods and dietary supplements have developed across the three Spedkost surveys. The results from Spedkost 3 showed that infants in Norway are mostly fed according to current Norwegian recommendations, although some features in the development show potential for improvement. More infants in Spedkost 3 compared to Spedkost 2 were exclusively breastfed between the age of 2 months and 3.5 months, which is a positive development. Proportions of exclusive breastfeeding at other ages apart from these, were generally higher in Spedkost 1 and Spedkost 2, than in Spedkost 3. The general trend in breastfeeding showed that the proportions of breastfed infants throughout the first half year of life were generally high and stable across surveys, and at 6 months of age about 80% of the infants were breastfed. Fewer infants were introduced to solid foods before 4 months of age in Spedkost 3 than in the two previous surveys, which is a favourable development. However, across surveys, there was an increase in the introduction to solid foods at 4-5 months of age, which has contributed to the decrease observed for rates of exclusive breastfeeding at these ages. The proportions introduced to vitamin D supplements both at 4-5 weeks of age, and during the first half year of life increased from Spedkost 1 to Spedkost 3, which is a positive development.

The trends in infant feeding practices for both boys and girls showed a relatively similar development as describe above. However, boys were generally introduced to solid foods earlier, and consequently exclusive breastfeeding was terminated earlier for boys than for girls. In general, the development across surveys in infant feeding practices according to maternal age and maternal education, showed smaller differences between mothers with lower education and higher education, and between the different categories of maternal age in Spedkost 3 than in Spedkost 1 and Spedkost 2. The general trend in infant feeding practices that was observed for the three Spedkost samples, was also observed for each groups of maternal tobacco habits (i.e. users and non-users), however in all three surveys mothers not using tobacco were more compliant to infant dietary recommendations compared to mothers using tobacco.

Future perspectives

The rates of breastfeeding throughout the first half year of life were high and relatively stable across surveys, which is advantageous as breastmilk is associated with several health-related outcomes in both mother and infant. However, many infants were introduced to solid foods between at 4-5 months of age, which consequently terminates exclusive breastfeeding. As discussed, in a European setting there is still no consensus about the appropriate age for introduction of complementary foods and thus the termination of exclusive breastfeeding. The present Norwegian dietary recommendations for infants (10) state that exclusively breastfed infants showing inadequate growth or seeming hungry in spite of frequent breastfeeding before the age of 6 months, might be in need of more food than breastmilk or infant formula alone and introduction of solid foods is then recommended. However, as stated in the Norwegian dietary recommendations for infants (10) and the ongoing EFSA report (31) most breastfed infants do not need complementary foods for nutritional reasons before about 6 months of age. Moreover, exclusive breastfeeding until 6 months of age is suggested to be protective of gastrointestinal infections (84) also in present Norwegian setting (85). Further research is needed to understand the consequences of the development observed for trends in infant feeding practices, in terms of exclusive breastfeeding and introduction to solid foods.

The results from all three Spedkost surveys showed that a high proportion of the infants were exclusively breastfed at 3.5 months of age. In order to maintain this proportion it may be necessary to offer mothers support and counselling by qualified health personnel early after discharge from the hospital. Interventions at a community level might be important when the length of hospital stay after birth is reduced and breastfeeding is not established in the hospital. In order to maintain the high rates of any breastfeeding, a policy that ensures that mothers are entitled to both a sufficiently long maternity leave and the right to time off to breastfeed when she returns to work is essential to uphold. Moreover, understanding reasons for differences in infant feeding practices tied to social and cultural factors may be important to improve infant dietary habits.

Finally, further assessment of infant feeding practices is required to evaluate how trends are developing according to the aims stated in the Norwegian Action Plan of Nutrition and to evaluate the effect of interventions aiming at improving dietary habits in infants.

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Appendices

Appendix 1

Approval from Norwegian Centre for Research Data (NSD)

Anne Lene Kristiansen
Postboks 1110 Blindern
0317 OSLO

Vår dato: 23.02.2018 Vår ref: 58855 / 3 / BGH Deres dato: Deres ref:

Tilrådning fra NSD Personvernombudet for forskning § 7-27

Personvernombudet for forskning viser til meldeskjema mottatt 31.01.2018 for prosjektet:

58855	*Spedkost 3 - hovedundersøkelse*
Behandlingsansvarlig	*Universitetet i Oslo, ved institusjonens øverste leder*
Daglig ansvarlig	*Anne Lene Kristiansen*

Vurdering

Etter gjennomgang av opplysningene i meldeskjemaet og øvrig dokumentasjon finner vi at prosjektet er unntatt konsesjonsplikt og at personopplysningene som blir samlet inn i dette prosjektet er regulert av § 7-27 i personopplysningsforskriften. På den neste siden er vår vurdering av prosjektopplegget slik det er meldt til oss. Du kan nå gå i gang med å behandle personopplysninger.

Vilkår for vår anbefaling

Vår anbefaling forutsetter at du gjennomfører prosjektet i tråd med:

- opplysningene gitt i meldeskjemaet og øvrig dokumentasjon
- vår prosjektvurdering, se side 2
- eventuell korrespondanse med oss

Meld fra hvis du gjør vesentlige endringer i prosjektet

Dersom prosjektet endrer seg, kan det være nødvendig å sende inn endringsmelding. På våre nettsider finner du svar på hvilke endringer du må melde, samt endringsskjema.

Opplysninger om prosjektet blir lagt ut på våre nettsider og i Meldingsarkivet

Vi har lagt ut opplysninger om prosjektet på nettsidene våre. Alle våre institusjoner har også tilgang til egne prosjekter i Meldingsarkivet.

Vi tar kontakt om status for behandling av personopplysninger ved prosjektslutt

Ved prosjektslutt 31.12.2020 vil vi ta kontakt for å avklare status for behandlingen av personopplysninger.

Se våre nettsider eller ta kontakt dersom du har spørsmål. Vi ønsker lykke til med prosjektet!

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

Vennlig hilsen

Marianne Høgetveit Myhren

Belinda Gloppen Helle

Kontaktperson: Belinda Gloppen Helle tlf: 55 58 28 74 / belinda.helle@nsd.no
Vedlegg: Prosjektvurdering

Personvernombudet for forskning

Prosjektvurdering - Kommentar

Prosjektnr: 58855

NASJONAL SAMARBEIDSSTUDIE
Vi forstår det slik at prosjektet er en nasjonal samarbeidsstudie hvor Universitetet i Oslo er behandlingsansvarlig institusjon. Personvernombudet forutsetter at ansvaret for behandlingen er avklart mellom institusjonene, og anbefaler at dere inngår en avtale som omfatter ansvarsfordeling, hvem som initierer prosjektet, bruk av data, eventuelt eierskap.

FORMÅL
Formålet med kostholdsundersøkelsen er å øke kunnskapen om kostholdet til spedbarn, følge utviklingen i kostholdet over tid, få et bedre grunnlag for å gi råd om kosthold samt å forebygge kostholdsrelaterte helseproblemer i denne aldersgruppen. Prosjektets pilotstudie har tidligere vært meldt og vurdert av personvernombudet (vår ref: 53936).

UTVALG OG REKRUTTERING
Prosjektet vil trekke et utvalg på 3000 6 måneder gamle barn født i en treukersperiode i mars 2018 og deres foresatte. Mødrene til barna må være født i Norge, Sverige eller Danmark og det må finnes et registrert telefonnummer til mor.

I følge opplysninger i meldeskjemaet trekkes utvalget tilfeldig fra Folkeregisteret via Evry etter godkjennelse fra Skatteetaten. Personvernombudet legger til grunn at taushetsplikten ikke er til hinder for førstegangskontakt og rekruttering, samt at frivilligheten understrekes ved rekruttering.

METODE OG DATAINNSAMLING
Hele utvalget vil få tilsendt en forespørsel om å delta i posten, adressert til barnets mor.

Datamaterialet skal samles inn ved at deltakerne besvarer et elektronisk spørreskjema eller et papirbasert spørreskjema. Deltakerne vil få tilsendt ett spørreskjema når barnet er 6 måneder og ett spørreskjema når barnet er 12 måneder.

I spørreskjemaet er det inkludert spørsmål om foresatte ønsker å delta eller ikke. Dersom prosjektet ikke mottar svar vil det gjennomføres en purrerunde. Purring vil skje tilsvarende for spørreundersøkelsen ved 6 mnd og ved 12 mnd. Det skal ikke gjennomføres purring på den gruppen som aktivt har svart at de ikke ønsker å delta

Det behandles sensitive personopplysninger om helseforhold.

SAMTYKKE/HJEMMELSGRUNNLAG
Dere har opplyst i meldeskjema at utvalget vil motta skriftlig informasjon om prosjektet, og samtykke skriftlig til å delta. Vår vurdering er at informasjonsskrivet til utvalget er godt utformet. Dette gjelder både

informasjonsskrivene som sendes ut ved 6 mnd, 12 mnd og informasjonsskrivene hvor det purres på deltakerne.

Vi minner imidlertid om at NSD har byttet navn til NSD - Norsk senter for forskningsdata AS.

ANDRE TILLATELSER OG VURDERINGER
Det vil behandles noen personopplysninger i forbindelse med rekrutteringen, dvs. noen bakgrunnsvariabler om utvalget for å kunne trekke et representativt utvalg. Personvernombudet finner at behandlingen kan hjemles i personopplysningsloven § 8 d (allmenn interesse). Vi legger til grunn at øvrige nødvendige tillatelser innhentes, for eksempel tillatelse fra Skattedirektoratet.

Det behandles enkelte opplysninger om tredjeperson (forelderen som ikke svarer på spørreskjemaet). Det skal kun registreres opplysninger om forelderens utdannelse. Opplysningene er av mindre omfang og ikke sensitive, og skal anonymiseres i publikasjon. Så fremt personvernulempen for tredjeperson reduseres på denne måten, kan prosjektleder unntas fra informasjonsplikten overfor tredjeperson, fordi det anses uforholdsmessig vanskelig å informere.

Personvernombudet legger rutinemessig til grunn at taushetsplikten ikke er til hinder for behandling av personopplysninger i prosjektet. Vi legger også til grunn at frivilligheten understrekes i forbindelse med rekruttering og purring.

PREMIERING
Alle deltakerne som fullfører undersøkelsen vil motta et gavekort på 500 kr. Personvernombudet vurderer at premieringen ikke går på bekostningen av frivilligheten til å delta i prosjektet.

INFORMASJONSSIKKERHET
Personvernombudet forutsetter at dere behandler alle data i tråd med Universitetet i Oslo sine retningslinjer for datahåndtering og informasjonssikkerhet.

PROSJEKTSLUTT OG VIDERE LAGRING AV DATAMATERIALET
Prosjektslutt er oppgitt til 31.12.2020. Det fremgår av meldeskjema og informasjonsskriv at datamaterialet skal lagres med personopplysninger frem til 31.12.2040 for videre forskning og mulige oppfølgingsstudier. I følge informasjonsskrivet skal deltakerne kontaktes med ny informasjon og det skal innhentes nytt samtykke dersom datamaterialet skal brukes i nye studier.

OPPFØLGINGSSTUDIER OG VIDERE FORSKNING
Personvernombudet minner om at dersom datamaterialet som er samlet inn i Spedkost 3 skal brukes til nye forskningsformål vil dette kreve søknad til personvernombudet.

ANONYMISERING AV DATAMATERIALET
Innen 31.12.2040 skal datamaterialet anonymiseres, med mindre det er innhentet samtykke fra informantene til videre lagring. Vanligvis innebærer anonymisering å:
- slette direkte personopplysninger (som navn/koblingsnøkkel)
- slette/omskrive indirekte personopplysninger (identifiserende sammenstilling av bakgrunnsopplysninger som

f.eks. bosted/arbeidssted, alder og kjønn)
- slette koblinger mellom IP-/epostadresser og besvarelser

Appendix 2

Semi-quantitative food frequency questionnaire from Spedkost 1

Underlagt taushetsplikt

SPEDKOST - 6 måneder
Undersøkelse av kostholdet blant spedbarn i Norge

Kryss av for "Ja" i ruten under dersom du samtykker i å delta i undersøkelsen. Dersom du ikke ønsker å delta, kryss av for "Nei" og returner skjemaet.

☐ Ja

☐ Nei

Hvis du ikke kan gi et helt nøyaktig svar, så fyll ut etter beste skjønn. Hvis det er spørsmål du ikke kan svare på, så la det stå åpent. Det utfylte skjemaet vil bli lest av en maskin og du vil derfor finne små kryss rundt omkring i skjemaet. Dette er bare justeringsmerker for at maskinen skal klare å skille sidene fra hverandre og du trenger ikke å bry deg om disse. Bruk blå eller svart penn/tusj ved utfylling.

Det er viktig at du går frem slik:

- i de små boksene setter du kryss for det svaret som passer best.
- i de store boksene skriver du tall eller blokkbokstaver.

Eksempel: Avkrysning, slik: ☒ Ikke slik: ☙ Tall: 1 2 3 4 5 6 7 8 9 0

Bokstaver: A B C D E F G H I J

Husk å ta med spørreskjemaet til helsestasjonen ved 6-månederskontrollen for påføring av opplysninger om barnets vekt/- og lengde.

Fylles ut på helsestasjonen ved 6-månederskontrollen				
Dato for 6-mnd-kontrollen:	dag	mnd		
Barnets vekt (6 mnd):		g	Barnets lengde (6 mnd):	cm
Fødselsvekt:		g	Lengde ved fødsel:	cm

1. Dato for utfylling av skjema: ☐☐ dag ☐☐ mnd

Bakgrunnsspørsmål om barnet

2. Når ble barnet født i forhold til ultralydstermin?
   - ☐ I 38. svangerskapsuke eller senere
   - ☐ Før 38. svangerskapsuke

3. Hvor mange barn har mor født?
   - ☐ 1 barn
   - ☐ 2 barn
   - ☐ 3 barn
   - ☐ 4 barn eller flere

4. Hvem fyller ut skjemaet?
   - ☐ Barnets mor
   - ☐ Barnets far
   - ☐ Både far og mor
   - ☐ Annen person

Spørsmål om barnets kosthold

Morsmelk

5. Hva slags melk/annen drikke fikk barnet den første leveuken?
   Her kan du sette flere kryss
   - ☐ Morsmelk
   - ☐ Vann
   - ☐ Sukkervann
   - ☐ Morsmelkerstatning
   - ☐ Vet ikke/husker ikke
   - ☐ Annet

6. Får barnet morsmelk nå?
   Sett kun ett kryss her
   - ☐ Ja, barnet får bare morsmelk (og eventuelt vann, tran eller annet kosttilskudd)
   - ☐ Ja, barnet får morsmelk sammen med morsmelkerstatning/annen melk/juice/saft o.l. /fast føde
   - ☐ Nei, men barnet har fått morsmelk tidligere ➪ *Gå til spørsmål 9*
   - ☐ Nei, barnet har aldri fått morsmelk ➪ *Gå til spørsmål 10*

7. Hvor mange ganger i døgnet får barnet vanligvis morsmelk nå?
   Regn også med de gangene barnet bare får morsmelk til trøst eller kos, dag- og nattetid
   - ☐ 1 gang
   - ☐ 2-3 ganger
   - ☐ 4-5 ganger
   - ☐ 6-7 ganger
   - ☐ 8-9 ganger
   - ☐ 10 ganger eller flere

8. **Får barnet vanligvis noe i tillegg til morsmelk nå?**
Med fast føde menes alle andre matvarer enn melk, vann, saft/juice/annen drikke og kosttilskudd. Fast føde inkluderer velling selv om denne er tyntflytende.
Sett kun ett kryss her

- ☐ Bare morsmelk (og eventuelt vann, tran eller annet kosttilskudd) ➪ *Gå til spørsmål 21*
- ☐ Morsmelk og morsmelkerstatning/annen melk ➪ *Gå til spørsmål 11*
- ☐ Morsmelk og morsmelkerstatning/annen melk og juice/saft o.l. ➪ *Gå til spørsmål 11*
- ☐ Morsmelk og morsmelkerstatning/annen melk og fast føde ➪ *Gå til spørsmål 11*
- ☐ Morsmelk og morsmelkerstatning/annen melk og fast føde og juice/saft o.l. ➪ *Gå til spørsmål 11*
- ☐ Morsmelk og fast føde ➪ *Gå til spørsmål 14*
- ☐ Morsmelk og juice/saft o.l. ➪ *Gå til spørsmål 21*

9. **Hvor gammelt var barnet da det sluttet å få morsmelk?**
Sett kun ett kryss her

Uker							Måneder									
1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6	6,5
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

10. **Hva var viktigste og nest viktigste grunn til at mor ikke ammet barnet eller har sluttet å amme det?**
Sett kun ett kryss for viktigste grunn og ett kryss for nest viktigste grunn

	Viktigste grunn	Nest viktigste grunn
Mor begynte å arbeide/å studere	☐	☐
Barnet sykt/for tidlig født	☐	☐
Mor syk/medisinbruk	☐	☐
Brystoperert	☐	☐
For lite melk	☐	☐
Sugeproblemer	☐	☐
Barnet ville ikke	☐	☐
Barnet biter/har fått tenner	☐	☐
Bekymring/stress/sliten	☐	☐
Brystbetennelse/tilstoppede melkeganger	☐	☐
Kolikk/urolig barn	☐	☐
Såre brystvorter	☐	☐
Ingen spesielle problemer, men ønsket ikke å amme lenger	☐	☐
Andre grunner	☐	☐

Morsmelkerstatning/annen melk

11. **Hvor gammelt var barnet da det begynte med morsmelkerstatning/annen melk i tillegg til eller istedenfor morsmelk?**
Her regnes både det som drikkes og det som du selv tilsetter i grøt eller annen mat.
Sett kun ett kryss her

Uker							Måneder											
1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6	6,5
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

12. **Hvor ofte <u>drikker</u> barnet vanligvis morsmelkerstatning/annen melk i tillegg til eller istedenfor morsmelk, og hvor mye drikker barnet vanligvis pr. gang ?**

Se mengdeangivelser på bildeark - bilde nr. 1. Velg mengde A, B, C eller D. Sett kryss i ruten som er nærmest den mengden barnet vanligvis får pr. gang. Hvis mengden varierer mye fra måltid til måltid, prøv å anslå en gjennomsnittsmengde og kryss av for nærmeste mengdealternativ. 100 ml = 1 dl

For hver melketype settes kun **ett kryss for hvor ofte, enten ganger pr. døgn eller ganger pr. uke.**
***I tillegg** settes* **ett kryss for hvor mye** *barnet vanligvis drikker pr. gang.*

	Hvor ofte?							Hvor mye?			
	Ganger pr. døgn					*eller*	Ganger pr. uke	Mengde (ml) pr. gang			
	Aldri/ sjeldnere enn hver uke	1	2	3	4	5 el. flere	1-3	4-6	60 A	120 B	180 C	240 D
Collett vanlig	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Collett med omega 3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
NAN vanlig	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
NAN HA1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Helmelk (søt og sur)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lettmelk (søt og sur)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Skummet melk (søt og sur)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Kumelkblanding (kumelk-vann-sukker)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Annen morsmelkerstatning/ annen melk;	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

oppgi type.....

13. **Hvilke av følgende melketyper har barnet fått de første levemånedene ?**
Kryss av for hvilken melketype barnet i hovedsak har fått i hver levemåned, enten i tillegg til eller istedenfor morsmelk. Her regnes både det som drikkes og det som du selv tilsetter i grøt eller annen mat. Sett kryss for **alle** *levemånedene barnet har fått melketypen.*

	Levemåned						
	1	2	3	4	5	6	7
Collett vanlig	☐	☐	☐	☐	☐	☐	☐
Collett med omega 3	☐	☐	☐	☐	☐	☐	☐
NAN vanlig	☐	☐	☐	☐	☐	☐	☐
NAN HA1	☐	☐	☐	☐	☐	☐	☐
Helmelk (søt og sur)	☐	☐	☐	☐	☐	☐	☐
Lettmelk (søt og sur)	☐	☐	☐	☐	☐	☐	☐
Skummet melk (søt og sur)	☐	☐	☐	☐	☐	☐	☐
Kumelkblanding (kumelk-vann-sukker)	☐	☐	☐	☐	☐	☐	☐
Annen morsmelkerstatning/annen melk	☐	☐	☐	☐	☐	☐	☐

Fast føde

14. Har barnet begynt å få fast føde?

☐ Ja

☐ Nei ➪ *Gå til spørsmål 21*

15. Hvor gammelt var barnet da det første gang fikk fast føde?
Sett kun ett kryss her

Uker							Måneder									
1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6	6,5
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

16. Hvor ofte pleier barnet å spise følgende mat nå?
For hver matvare sett kun ett kryss for hvor ofte, enten ganger pr. dag eller ganger pr. uke

	Hvor ofte?						
		Ganger pr. dag				*eller*	Ganger pr. uke
	Aldri/sjeldnere enn hver uke	1	2	3	4 el. flere	1-3	4-6
Industriframstilt grøt/velling:							
Nestlé grøt - tilberedes med melk	☐	☐	☐	☐	☐	☐	☐
Nestlé grøt - tilberedes med vann	☐	☐	☐	☐	☐	☐	☐
Semper grøt	☐	☐	☐	☐	☐	☐	☐
Semper drikkegrøt/velling	☐	☐	☐	☐	☐	☐	☐
Hjemmelaget grøt av:							
Grovt/sammalt mel	☐	☐	☐	☐	☐	☐	☐
Hirse	☐	☐	☐	☐	☐	☐	☐
Jernberiket hvetemel (Nordkronen)	☐	☐	☐	☐	☐	☐	☐
Fint/hvitt mel/kavring/semulje	☐	☐	☐	☐	☐	☐	☐
Helios barnemel	☐	☐	☐	☐	☐	☐	☐
Industriframstilt middag på glass:							
Grønnsaker på glass	☐	☐	☐	☐	☐	☐	☐
Grønnsaker og kjøtt på glass	☐	☐	☐	☐	☐	☐	☐
Hjemmelaget middag:							
Potet-/grønnsakmos	☐	☐	☐	☐	☐	☐	☐
Kjøtt og grønnsaker/potet	☐	☐	☐	☐	☐	☐	☐
Fisk og grønnsaker/potet	☐	☐	☐	☐	☐	☐	☐
Annen hjemmelaget middag	☐	☐	☐	☐	☐	☐	☐
Mellommåltider/frukt/dessert:							
Banan	☐	☐	☐	☐	☐	☐	☐
Hjemmelaget mos av annen frukt/bær	☐	☐	☐	☐	☐	☐	☐
Frukt-/bærmos på glass	☐	☐	☐	☐	☐	☐	☐
Yoghurt	☐	☐	☐	☐	☐	☐	☐
Is	☐	☐	☐	☐	☐	☐	☐
Kjeks/kaker	☐	☐	☐	☐	☐	☐	☐

17. **Hvor gammelt var barnet da det fikk følgende matvarer for første gang?**
Sett kun ett kryss for hver matvare

	Måneder							
	Ikke fått	1	2	3	4	5	6	7
Mais-, ris-, hirsegrøt	☐	☐	☐	☐	☐	☐	☐	☐
Havre-, hvete-, kavringgrøt	☐	☐	☐	☐	☐	☐	☐	☐
Banan	☐	☐	☐	☐	☐	☐	☐	☐
Annen frukt-/bærmos	☐	☐	☐	☐	☐	☐	☐	☐
Potet-/grønnsakmos	☐	☐	☐	☐	☐	☐	☐	☐
Moset kjøtt/grønnsaker/potet	☐	☐	☐	☐	☐	☐	☐	☐
Moset fisk/grønnsaker/potet	☐	☐	☐	☐	☐	☐	☐	☐
Yoghurt	☐	☐	☐	☐	☐	☐	☐	☐
Drikkegrøt/velling	☐	☐	☐	☐	☐	☐	☐	☐
Brød	☐	☐	☐	☐	☐	☐	☐	☐

18. **Dersom barnet får grøt, hva slags væske tilsettes vanligvis grøten ved tilberedning/koking?**
Hvis det vanligvis brukes mer enn én type væske i grøten, settes flere kryss

☐ Vann
☐ Morsmelk
☐ Morsmelkerstatning
☐ Annen melk (kumelk)
☐ Annet

19. **Dersom barnet får Nestlé grøt eller Semper grøt, hvor store porsjoner spiser barnet vanligvis til hvert måltid?**

Se mengdeangivelser på bildeark - bilde nr. 2. Velg mengde A, B, C, D, E eller F. Sett kryss i ruten som er nærmest den mengden barnet vanligvis får pr. gang. Hvis mengden varierer mye fra måltid til måltid, prøv å anslå en gjennomsnittsmengde og kryss av for nærmeste mengdealternativ. Sett kun ett kryss her

	Mengde ferdig grøt pr. måltid					
	Noen ts	½ dl	1 dl	1 ½ dl	2 dl	2,5 dl
	A	B	C	D	E	F
Nestlé grøt eller Semper grøt	☐	☐	☐	☐	☐	☐

20. **Dersom barnet får grøt eller middagsmat, tilsettes vanligvis noe ekstra fett (smør, margarin, olje) i grøten eller middagsmaten?**
Her kan du sette flere kryss

☐ Ja, i grøten
☐ Ja, i middagsmaten
☐ Nei, verken i grøten eller middagsmaten

Vann, saft, juice o.l.

21. Hvor ofte pleier barnet å drikke vann, saft, juice o.l.?
For hver drikk settes kun ett kryss for hvor ofte, enten ganger pr. døgn eller ganger pr. uke

	Hvor ofte?							
	Ganger pr. døgn				*eller*	Ganger pr. uke	
	Aldri/sjeldnere enn hver uke	1	2	3	4	5 el. flere	1-3	4-6
Vann	☐	☐	☐	☐	☐	☐	☐	☐
Barnesaft på glass/flaske	☐	☐	☐	☐	☐	☐	☐	☐
Saft, sukret	☐	☐	☐	☐	☐	☐	☐	☐
Saft, kunstig søtet	☐	☐	☐	☐	☐	☐	☐	☐
Juice	☐	☐	☐	☐	☐	☐	☐	☐
Nypeekstrakt	☐	☐	☐	☐	☐	☐	☐	☐
Urtete	☐	☐	☐	☐	☐	☐	☐	☐
Brus/søtt mineralvann	☐	☐	☐	☐	☐	☐	☐	☐

22. Dersom barnet får barnesafter, saft, juice eller lignende, hvor gammelt var barnet da det begynte å få dette?
Sett kun ett kryss her

Uker							Måneder									
1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6	6,5
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Andre spørsmål om kostholdet

23. Er det noen matvarer det kunne vært aktuelt å gi barnet, men som du unngår å gi fordi du er redd barnet kan reagere med allergi/intoleranse?

☐ Ja

☐ Nei ➪ *Gå til spørsmål 25*

24. Hvilke matvarer/ingredienser i matvarer unngår du å gi barnet?
Her kan du sette flere kryss

☐ Hvete
☐ Havre
☐ Rug
☐ Bygg
☐ Vanlig melk
☐ Morsmelkerstatning
☐ Appelsin/appelsinjuice
☐ Fisk
☐ Nøtter
☐ Erter
☐ Egg
☐ Soya
☐ Matvarer med tilsetningsstoffer
☐ Annet

25. Har barnet hatt problemer i forhold til spising/mat?

☐ Ja

☐ Nei ➪ *Gå til spørsmål 27*

26. **Hvilke problemer har barnet hatt i forhold til spising/mat?**
Her kan du sette flere kryss

☐ Dårlig matlyst
☐ Problemer med svelging, suging
☐ Allergi/intoleranse mot enkelte matvarer
☐ Andre problemer;

oppgi hvilke: .....

Tran, vitamin- og mineraltilskudd

27. **Får barnet tran eller annet vitamin- og mineraltilskudd (kosttilskudd) nå?**

☐ Ja
☐ Nei, men barnet har fått tran/kosttilskudd tidligere ➪ *Gå til spørsmål 29*
☐ Nei, barnet har aldri fått tran/kosttilskudd ➪ *Gå til spørsmål 31*

28. **Hvor ofte får barnet vanligvis tran eller annet kosttilskudd, og hvor mye får barnet pr. gang?**
Sett ett kryss for hvor ofte, enten ganger pr. dag eller ganger pr. uke **og** *ett kryss for mengde pr. gang*

Det er satt opp to mengder for en teskje; 3 ml (liten teskje) og 5 ml (stor teskje)

	Hvor ofte?					Hvor mye?			
	Ganger pr. dag *eller*			Ganger pr. uke		Mengde pr. gang			
	Aldri/sjeldnere enn hver uke	1	2	3 el. flere	1-3	4-6	1 ts 3ml	1ts 5ml	1bs 7ml	1ss 11ml
Tran	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Biovit	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sanasol	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Collett spedbarnsvitaminer	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Annet kosttilskudd	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

29. **Hvor gammelt var barnet da det begynte å få tran eller annet kosttilskudd?**
Sett kun ett kryss her

Uker							Måneder									
1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6	6,5
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

30. **Hvilke av følgende kosttilskudd (tran inkludert) har barnet fått de første levemånedene?**
Sett kryss for **alle** *levemånedene barnet har fått tran/kosttilskudd*

	Levemåned						
	1	2	3	4	5	6	7
Tran	☐	☐	☐	☐	☐	☐	☐
Biovit	☐	☐	☐	☐	☐	☐	☐
Sanasol	☐	☐	☐	☐	☐	☐	☐
Collett spedbarnsvitaminer	☐	☐	☐	☐	☐	☐	☐
Annet kosttilskudd	☐	☐	☐	☐	☐	☐	☐

Informasjon om spedbarnsernæring

31. **Hvor har du fått informasjon om amming/spedbarnsernæring, og hvordan vurderer du denne informasjonen?**
Sett ett kryss i hver linje

	Svært nyttig	Nyttig	Lite nyttig	Unyttig	Ikke fått informasjon
Føde-/barselavdelingen	☐	☐	☐	☐	☐
Helsestasjonen	☐	☐	☐	☐	☐
Helsepersonell utenfor helsestasjonen	☐	☐	☐	☐	☐
Homøopat	☐	☐	☐	☐	☐
Familie/kjente	☐	☐	☐	☐	☐
Ammehjelpen	☐	☐	☐	☐	☐
Brosjyren: «Mat for spedbarn»	☐	☐	☐	☐	☐
Brosjyren: «Hvordan du ammer ditt barn»	☐	☐	☐	☐	☐
Bøker og/eller oppslagsverk	☐	☐	☐	☐	☐
Videoen: «Bryst er best»	☐	☐	☐	☐	☐
Aviser/TV/Ukeblad	☐	☐	☐	☐	☐
Reklamemateriell	☐	☐	☐	☐	☐
Butikken	☐	☐	☐	☐	☐
Annet	☐	☐	☐	☐	☐

32. **Ønsker du mer informasjon om spedbarnsernæring?**

☐ Ja

☐ Nei ➪ *Gå til spørsmål 34*

☐ Vet ikke ➪ *Gå til spørsmål 34*

33. **Hvilke tema(er) er det du særlig ønsker mer informasjon om i forhold til spedbarnsernæring?**
Her kan du sette flere kryss. (Dersom det ikke er plass til alle ønsker i svarrubrikken, skriv inn det du synes er viktigst)

- ☐ Amming
- ☐ Bruk av morsmelkerstatning/annen melk enn morsmelk
- ☐ Tidspunkt for når barnet skal begynne med fast føde
- ☐ Hvordan barnet skal begynne med fast føde
- ☐ Hjemmelaget spedbarnsmat/hvordan lage spedbarnsmaten selv
- ☐ Tran/kosttilskudd
- ☐ Valg av grøttyper
- ☐ Matvareallergi/-intoleranse
- ☐ Fett i spedbarnsmaten
- ☐ Andre tema;

oppgi hvilke: .....

Bakgrunnsspørsmål om moren

34. **Hvilken utdannelse har barnets mor?**
Sett kun ett kryss for høyeste fullførte utdannelse

- ☐ 9-årig skole eller kortere
- ☐ 9-årig skole og folkehøgskole eller annen ett-årig utdanning
- ☐ Videregående skole/gymnas
- ☐ Fagbrev
- ☐ Høyskole- eller universitetsutdanning på 4 år eller mindre
- ☐ Høyskole- eller universitetsutdanning på mer enn 4 år
- ☐ Annet

35. **Hvordan var mors arbeidssituasjon før barnet ble født?**
Sykemeldinger i forbindelse med svangerskapet skal ikke regnes med. Dersom flere alternativer passer, kryss av for det alternativet som passer best. Sett kun ett kryss

- ☐ Utearbeidende heltid
- ☐ Utearbeidende deltid
- ☐ Hjemmearbeidende
- ☐ Sykemeldt før hun ble gravid
- ☐ Permisjon
- ☐ Uføretrygdet
- ☐ Under attføring
- ☐ Student/skoleelev
- ☐ Arbeidsledig
- ☐ Annet

36. Hvordan er mors familiesituasjon?
Sett kun ett kryss her

- ☐ Gift/Samboer
- ☐ Bor alene med barnet/barna
- ☐ Annet

37. Røykte mor under svangerskapet?
Sett kun ett kryss her

- ☐ Nei
- ☐ Ja, men sluttet i løpet av svangerskapet
- ☐ Ja, av og til (ikke hver dag)
- ☐ Ja, 1-9 sigaretter pr. dag
- ☐ Ja, 10 sigaretter eller flere pr. dag

38. Røyker mor nå?
Sett kun ett kryss her

- ☐ Nei
- ☐ Ja, av og til (ikke hver dag)
- ☐ Ja, 1-9 sigaretter pr. dag
- ☐ Ja, 10 sigaretter eller flere pr. dag

39. Har barnets foreldre eller søsken astma/allergi, eller har de hatt slike plager tidligere?
Her kan du sette flere kryss

- ☐ Nei
- ☐ Mor har/har hatt astma/allergi
- ☐ Far har/har hatt astma/allergi
- ☐ Barnets søsken har/ har hatt astma/allergi

Tusen takk for at du tok deg tid til å besvare spørsmålene!

Skjemaet legges i vedlagte svarkonvolutt, men vent med å lime den igjen til barnets vekt og lengde er ført inn på skjemaet ved 6-månederskontrollen på helsestasjonen. Skjemaet må ikke brettes.

Appendix 3

Semi-quantitative food frequency questionnaire from Spedkost 2

32936

SPEDKOST 2006 - 2007
Undersøkelse av kostholdet blant spedbarn

Kryss av for "Ja" i ruten under dersom du samtykker i å delta i undersøkelsen. Dersom du ikke ønsker å delta og vil reservere deg mot å bli purret på, kryss av for "Nei" og returner skjemaet.

☐ Ja

☐ Nei

Ved utfylling er det viktig at du går frem slik:

* Sett kryss i boksene. Slik: ☒ Ikke slik: ☒

* Ved rettelser kan du markere tydelig at det er feil, slik: ■

* I de åpne feltene skriver du inn tydelig tekst

* Der det spørres etter tall, skriver du disse slik: 1 2 3 4 5 6 7 8 9

* Skjemaet må ikke brettes

* Det utfylte skjemaet vil bli lest av en maskin. **Bruk blå eller sort kulepenn**.

Husk å ta med spørreskjemaet til helsestasjonen ved 6-månederskontrollen for påføring av opplysninger om barnets vekt og lengde.

Hvis du har glemt å ta med skjemaet på kontrollen eller hvis barnet har vært på 6-månederskontrollen før du mottok skjemaet, ber vi deg skrive inn opplysninger om barnets vekt og lengde på skjemaet selv. Dersom barnet ikke kommer til 6-månederskontroll på helsestasjonen innen svarfristen, ber vi deg likevel å besvare resten av skjemaet så godt du kan og returnere det.

Fylles ut på helsestasjonen ved 6-månederskontrollen

Dato for 6-mnd kontrollen: ☐☐☐☐ (dag mnd)

Barnets vekt (6 mnd): ☐☐☐☐☐ gram

Barnets lengde (6 mnd): ☐☐ cm

Fødselsvekt: ☐☐☐☐ gram

Lengde ved fødsel: ☐☐ cm

32936

BAKGRUNNSSPØRSMÅL OM BARNET

1. Dato for utfylling av skjemaet

Skriv inn datoen for dag og måned i rutene

dag mnd

2. Hva er barnets kjønn?

Sett ett kryss

- ☐ Jente
- ☐ Gutt

3. Når ble barnet født i forhold til ultralydstermin?

Sett ett kryss

- ☐ I 38. svangerskapsuke eller senere
- ☐ Før 38. svangerskapsuke

4. Hvor mange barn har mor født?

Sett ett kryss

- ☐ 1 barn
- ☐ 2 barn
- ☐ 3 barn
- ☐ 4 barn eller flere

5. Hvem fyller ut skjemaet?

Sett ett kryss

- ☐ Barnets mor
- ☐ Barnets far
- ☐ Både mor og far
- ☐ Annen person

SPØRSMÅL OM MORSMELK

6. Hva slags melk / annen drikke fikk barnet den første leveuken?

Her kan du sette flere kryss

- ☐ Morsmelk
- ☐ Vann
- ☐ Sukkervann
- ☐ Morsmelkerstatning
- ☐ Annet
- ☐ Vet ikke

7. Får barnet morsmelk nå, eventuelt noe i tillegg til morsmelk?

Med fast føde menes alle andre matvarer enn vann/melk/saft/juice/annen drikke og kosttilskudd.
Fast føde inkluderer velling selv om denne er tyntflytende.
Sett ett kryss

- ☐ Ja, bare morsmelk (og eventuelt tran eller annet kosttilskudd) ⇨ *Gå til spm 8 og deretter til spm 24*
- ☐ Ja, morsmelk og vann/juice/saft o.l. ⇨ *Gå til spm 8 og deretter til spm 21*
- ☐ Ja, morsmelk og fast føde samt eventuelt vann/juice/saft o.l. ⇨ *Gå til spm 8 og deretter til spm 13*
- ☐ Ja, morsmelk og morsmelkerstatning/annen melk ⇨ *Gå til spm 8 og deretter til spm 11*
- ☐ Ja, morsmelk og morsmelkerstatning/annen melk og vann/juice/saft o.l. ⇨ *Gå til spm 8 og deretter til spm 11*
- ☐ Ja, morsmelk og morsmelkerstatning/annen melk og fast føde samt eventuelt vann/juice/saft o.l. ⇨ *Gå til spm 8 og deretter til spm 11*
- ☐ Nei, men barnet har fått morsmelk tidligere ⇨ *Gå til spm 9*
- ☐ Nei, barnet har aldri fått morsmelk ⇨ *Gå til spm 10*

8. Hvor mange ganger i døgnet får barnet vanligvis morsmelk nå?

Regn også med de gangene barnet bare får morsmelk til trøst eller kos, dag- og nattetid.
Sett ett kryss

- ☐ 1 gang
- ☐ 2-3 ganger
- ☐ 4-5 ganger
- ☐ 6-7 ganger
- ☐ 8-9 ganger
- ☐ 10 ganger eller flere

9. Hvor gammelt var barnet da det sluttet å få morsmelk?

Sett ett kryss

Uker							Måneder								
1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

10. Hva var viktigste og nest viktigste grunn til at mor ikke ammet barnet eller har sluttet å amme det?

Sett ett kryss for viktigste grunn og ett kryss for nest viktigste grunn

	Viktigste grunn	Nest viktigste grunn
Sugeproblemer	☐	☐
Barnet ville ikke	☐	☐
Barnet sykt/for tidlig født	☐	☐
Kolikk/urolig barn	☐	☐
Barnet biter/har fått tenner	☐	☐
For lite melk	☐	☐
Mor syk/medisinbruk	☐	☐
Bekymring/stress/sliten	☐	☐
Brystbetennelse	☐	☐
Tilstoppede melkeganger	☐	☐
Såre brystknopper	☐	☐
Brystoperert	☐	☐
Mor begynte å arbeide/å studere	☐	☐
Andre grunner	☐	☐
Ingen spesielle problemer, men ønsket ikke å amme lenger	☐	☐
Ble rådet til å slutte	☐	☐

Dersom mor ble rådet til å slutte å amme, hvem var det som rådet henne til det?
(F.eks helsepersonell, familie, venner)

SPØRSMÅL OM MORSMELKERSTATNING/ANNEN MELK

11. Hvor gammelt var barnet da det begynte med morsmelkerstatning/annen melk i <u>tillegg</u> til eller istedenfor morsmelk?

Her regnes både det som drikkes og det som du selv tilsetter i grøt eller annen mat.
Sett ett kryss

Uker							Måneder								
1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

12. Hvor ofte <u>drikker</u> barnet vanligvis morsmelkerstatning/annen melk i tillegg til eller istedenfor morsmelk, og hvor mye drikker barnet vanligvis pr. gang?

Se mengdeangivelse på bilde 1 bakerst i spørreskjemaet. Velg mengde A, B, C eller D. Sett kryss i ruten som er nærmest den mengden barnet vanligvis får pr. gang. Hvis mengden varierer mye fra måltid til måltid, prøv å anslå en gjennomsnittsmengde. 100 ml = 1 dl.

*For hver melketype settes **ett kryss for hvor ofte, enten ganger pr. uke eller ganger pr. døgn**. I tillegg settes **ett kryss for hvor mye** barnet vanligvis drikker pr. gang.*

	Hvor ofte?								**Hvor mye?**			
	Ganger pr. uke		*eller*	Ganger pr. døgn					Mengde (ml) pr. gang			
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4	5 el. flere	60 A	120 B	180 C	240 D
NAN 1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
NAN 2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
NAN H.A. 1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Collett med omega 3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hipp økologisk morsmelkerstatning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Småfolk morsmelkerstatning med omega 3 og 6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Småfolk morsmelkerstatning BabyPlus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Holle morsmelkerstatning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Holle tilskuddsblanding	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Helmelk (søt og sur)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lettmelk (søt og sur)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ekstra lettmelk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Skummetmelk (søt og sur)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Kumelksblanding (kumelk-vann-sukker)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Annen melk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Annen morsmelkerstatning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Dersom du bruker annen morsmelkerstatning/annen melk, oppgi type:

32936

SPØRSMÅL OM FAST FØDE

13. Har barnet begynt å få fast føde?

Sett ett kryss

☐ Ja

☐ Nei ⇨ *Gå til spørsmål 21*

14. Hvor gammelt var barnet da det første gang fikk fast føde?

Sett ett kryss

Uker							Måneder								
1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

15. Hvor ofte pleier barnet å spise følgende mat nå?

Med melk menes her morsmelk, morsmelkerstatning eller annen melk.
Sett ett kryss for hver matvare, ***enten ganger pr. uke eller ganger pr. døgn***

		Ganger pr. uke		*eller*	Ganger pr. døgn		
INDUSTRIFREMSTILT GRØT/VELLING:	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4 el. flere
Nestlé grøt tilberedt med melk	☐	☐	☐	☐	☐	☐	☐
Nestlé grøt tilberedt med vann	☐	☐	☐	☐	☐	☐	☐
Nestlé velling	☐	☐	☐	☐	☐	☐	☐
Småfolk grøt tilberedt med melk	☐	☐	☐	☐	☐	☐	☐
Småfolk grøt tilberedt med vann	☐	☐	☐	☐	☐	☐	☐
Hipp grøt tilberedt med vann	☐	☐	☐	☐	☐	☐	☐
Hipp velling	☐	☐	☐	☐	☐	☐	☐
Holle grøt tilberedt med vann/melk	☐	☐	☐	☐	☐	☐	☐
HJEMMELAGET GRØT:							
Grovt/sammalt mel/havregryn	☐	☐	☐	☐	☐	☐	☐
Hirse	☐	☐	☐	☐	☐	☐	☐
Fint/hvitt mel/kavring/semule/ris/mais	☐	☐	☐	☐	☐	☐	☐
INDUSTRIFREMSTILT MIDDAG PÅ GLASS:							
Kun grønnsaker	☐	☐	☐	☐	☐	☐	☐
Kjøtt og grønnsaker	☐	☐	☐	☐	☐	☐	☐
Fisk og grønnsaker	☐	☐	☐	☐	☐	☐	☐
HJEMMELAGET MIDDAG:							
Potet-/grønnsaksmos	☐	☐	☐	☐	☐	☐	☐
Kjøtt og grønnsaker	☐	☐	☐	☐	☐	☐	☐
Fisk og grønnsaker	☐	☐	☐	☐	☐	☐	☐
Annen hjemmelaget middag	☐	☐	☐	☐	☐	☐	☐

16. Hvor ofte pleier barnet å spise følgende mat nå?

Sett ett kryss for hver matvare, enten ganger pr. uke eller ganger pr. døgn

		Ganger pr. uke		*eller*	Ganger pr. døgn		
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4 el. flere
FRUKT-/BÆRMOS:							
Industrifremstilt frukt-/bærmos på glass	☐	☐	☐	☐	☐	☐	☐
Hjemmelaget frukt-/bærmos	☐	☐	☐	☐	☐	☐	☐
ANNEN MAT:							
Brød	☐	☐	☐	☐	☐	☐	☐
Yoghurt	☐	☐	☐	☐	☐	☐	☐
Is	☐	☐	☐	☐	☐	☐	☐
Kjeks/kaker	☐	☐	☐	☐	☐	☐	☐
Spinat	☐	☐	☐	☐	☐	☐	☐

17. Pleier barnet å få økologiske produkter?

Sett ett kryss for hver matvare

	Ja, vanligvis	Ja, av og til	Nei, sjelden/aldri
Grøt/velling	☐	☐	☐
Middag	☐	☐	☐
Frukt	☐	☐	☐
Grønnsaker	☐	☐	☐
Andre økologiske produkter	☐	☐	☐

18. Hvor gammelt var barnet da det fikk følgende matvarer for første gang?

Sett ett kryss for hver matvare

		Måneder					
	Ikke fått	1	2	3	4	5	6
Mais-/ris-/hirsegrøt	☐	☐	☐	☐	☐	☐	☐
Havre-/hvete-/bygg-/ kavringgrøt	☐	☐	☐	☐	☐	☐	☐
Frukt-/bærmos	☐	☐	☐	☐	☐	☐	☐
Moset potet	☐	☐	☐	☐	☐	☐	☐
Moste grønnsaker	☐	☐	☐	☐	☐	☐	☐
Moset kjøtt	☐	☐	☐	☐	☐	☐	☐
Moset fisk	☐	☐	☐	☐	☐	☐	☐
Brød	☐	☐	☐	☐	☐	☐	☐
Yoghurt	☐	☐	☐	☐	☐	☐	☐

19. Dersom barnet får grøt nå, hva slags væske tilsettes vanligvis grøten ved tilberedning / koking?

Hvis det vanligvis brukes mer enn én type væske, settes flere kryss

- ☐ Vann
- ☐ Morsmelk
- ☐ Morsmelkerstatning
- ☐ Kumelk
- ☐ Annet

20. Dersom barnet får grøt, hvor store porsjoner spiser barnet vanligvis til hvert måltid?

Se mengdeangivelse på bilde 2 bakerst i spørreskjemaet. Velg mengde A, B, C, D, E eller F. Sett kryss i ruten som er nærmest den mengden barnet vanligvis får pr. gang. Hvis mengden varierer mye fra måltid til måltid, prøv å anslå en gjennomsnittsmengde. Sett ett kryss for hver grøttype.

	Bruker ikke	Noen ts (Bilde A)	0,5 dl (Bilde B)	1 dl (Bilde C)	1,5 dl (Bilde D)	2 dl (Bilde E)	2,5 dl (Bilde F)
Industrifremstilt grøt	☐	☐	☐	☐	☐	☐	☐
Hjemmelaget grøt	☐	☐	☐	☐	☐	☐	☐

SPØRSMÅL OM VANN, SAFT, JUICE O.L.

21. Hvor ofte pleier barnet å drikke vann, saft, juice o.l., og hvor mye drikker barnet vanligvis pr. gang?

Se mengdeangivelse på bilde 1 bakerst i spørreskjemaet. Velg mengde A, B, C eller D. Sett kryss i ruten som er nærmest den mengden barnet vanligvis får pr. gang. Hvis mengden varierer mye fra gang til gang, prøv å anslå en gjennomsnittsmengde. 100 ml = 1 dl.

*For hver drikk settes **ett kryss for hvor ofte, enten ganger pr. uke eller ganger pr. døgn.** I tillegg settes **ett kryss for hvor mye** barnet vanligvis drikker pr. gang.*

	Hvor ofte?								**Hvor mye?**			
	Ganger pr. uke		*eller*	Ganger pr. døgn					Mengde (ml) pr. gang			
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4	5 el. flere	60 A	120 B	180 C	240 D
Vann	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Saft for barn 0-3 år (Nestlé, Hipp o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Saft, sukret	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Saft, kunstig søtet	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Brus, sukret	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Brus, kunstig søtet	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Juice	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Nektar (eplenektar o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Nypeekstrakt	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

22. Dersom barnet får vann nå, hvor gammelt var barnet da det begynte å få dette?

Sett ett kryss

Uker							Måneder								
1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

23. Dersom barnet får saft, juice o.l. nå, hvor gammelt var barnet da det begynte å få dette?

Sett ett kryss

Uker							Måneder								
1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

ANDRE SPØRSMÅL OM BARNETS KOSTHOLD

24. Er det noen matvarer det kunne være aktuelt å gi barnet, men som du unngår å gi fordi du er redd barnet kan reagere med allergi/intoleranse?

Sett ett kryss

☐ Ja

☐ Nei ⇨ *Gå til spørsmål 26*

25. Hvilke matvarer/ingredienser i matvarer unngår du å gi barnet?

Her kan du sette flere kryss

☐ Glutenholdig mel/korn (hvete, havre, rug og bygg)

☐ Vanlig kumelk

☐ Morsmelkerstatning

☐ Appelsin/appelsinjuice/annen sitrusfrukt

☐ Fisk/skalldyr

☐ Nøtter/nøtteprodukter (peanøttsmør etc.)

☐ Belgfrukter (erter, bønner etc.)

☐ Egg

☐ Soya

☐ Matvarer med tilsetningsstoffer

☐ Annet

26. Har barnet hatt problemer i forhold til spising / mat?
Her kan du sette flere kryss

- ☐ Nei, har ikke hatt noen problemer
- ☐ Ja, dårlig matlyst
- ☐ Ja, problemer med svelging/suging
- ☐ Ja, allergi/intoleranse mot enkelte matvarer
- ☐ Ja, andre problemer

Oppgi hvilke:

SPØRSMÅL OM KOSTTILSKUDD

27. Får barnet vitamin D-tilskudd (som vitamin D-dråper / tran) eller annet kosttilskudd nå?
Sett ett kryss

- ☐ Ja
- ☐ Nei, men barnet har fått vitamin D-tilskudd/kosttilskudd tidligere ⇨ *Gå til spørsmål 29*
- ☐ Nei, barnet har aldri fått vitamin D-tilskudd/kosttilskudd ⇨ *Gå til spørsmål 31*

28. Hvor ofte får barnet vanligvis vitamin D-tilskudd eller annet kosttilskudd, og hvor mye får barnet pr. gang?
*For hvert kosttilskudd settes **ett kryss for hvor ofte, enten ganger pr. uke eller ganger pr. døgn.** I tillegg settes **ett kryss for hvor mye** barnet vanligvis får pr. gang.*

Det er satt opp to mengder for en teskje; 3 ml (liten teskje) og 5 ml (stor teskje)

	Hvor ofte?					**Hvor mye?**					
	Ganger pr. uke		*eller*	Ganger pr. døgn		Mengde pr. gang					
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2 el. flere	1 ts (3 ml)	1 ts (5 ml)	1 bs (7 ml)	1 ss (10 ml)	3 dråper	5 dråper
Tran	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Vitamin D-dråper	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Andre typer fiskeoljer	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Multivitaminer (Sana-sol, Biovit, Nycoplus multivitamin mikstur)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Annet kosttilskudd	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

29. Hvor gammelt var barnet da det første gang fikk vitamin D-tilskudd?

Sett ett kryss

Uker							Måneder								
1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

30. Hvilke av følgende kosttilskudd har barnet fått de første levemånedene?

*Sett kryss for **alle** levemånedene barnet har fått kosttilskudd*

	Ikke fått	Levemåned 1	2	3	4	5	6
Tran	☐	☐	☐	☐	☐	☐	☐
Vitamin D-dråper	☐	☐	☐	☐	☐	☐	☐
Andre typer fiskeoljer	☐	☐	☐	☐	☐	☐	☐
Multivitaminer (Sana-sol, Biovit, Nycoplus multivitamin mikstur)	☐	☐	☐	☐	☐	☐	☐
Annet kosttilskudd	☐	☐	☐	☐	☐	☐	☐

INFORMASJON OM SPEDBARNSERNÆRING

31. Hvor har du fått informasjon om amming/spedbarnsernæring, og hvordan vurderer du denne informasjonen?

Sett ett kryss for hver linje

	Ikke fått informasjon	Svært nyttig	Nyttig	Lite nyttig	Unyttig
Føde-/barselavdelingen	☐	☐	☐	☐	☐
Helsestasjonen	☐	☐	☐	☐	☐
Helsepersonell utenfor helsestasjonen	☐	☐	☐	☐	☐
Homøopat	☐	☐	☐	☐	☐
Familie/kjente	☐	☐	☐	☐	☐
Ammehjelpen	☐	☐	☐	☐	☐
Bøker og/eller oppslagsverk	☐	☐	☐	☐	☐
Aviser/TV/Ukeblad	☐	☐	☐	☐	☐
Reklamemateriell	☐	☐	☐	☐	☐
Butikken	☐	☐	☐	☐	☐
Mattilsynets hjemmeside (www.mattilsynet.no)	☐	☐	☐	☐	☐
Sosial- og helsedirektoratets hjemmeside (www.shdir.no)	☐	☐	☐	☐	☐
www.matportalen.no	☐	☐	☐	☐	☐
Andre internettsider	☐	☐	☐	☐	☐
Annet	☐	☐	☐	☐	☐

32. Har du fått/sett informasjonsmateriellet nevnt nedenfor, og hvordan vurderer du eventuelt dette materiellet?

Sett ett kryss for hver linje

	Ikke fått/sett	Svært nyttig	Nyttig	Lite nyttig	Unyttig
Brosjyren 'Mat for spedbarn'	☐	☐	☐	☐	☐
Brosjyren 'Hvordan du ammer ditt barn'	☐	☐	☐	☐	☐
Filmen 'Bryst er best'	☐	☐	☐	☐	☐

33. Ønsker du mer informasjon om spedbarnsernæring?

Sett ett kryss

☐ Ja

☐ Nei ⇨ *Gå til spørsmål 35*

☐ Vet ikke ⇨ *Gå til spørsmål 35*

34. Hvilke tema(er) er det du særlig ønsker mer informasjon om i forhold til spedbarnsernæring?

Her kan du sette flere kryss.
(Dersom det ikke er plass til alle ønsker i det åpne feltet, skriv inn det du synes er viktigst)

☐ Amming

☐ Bruk av morsmelkerstatning/annen melk enn morsmelk

☐ Tidspunkt for når barnet skal begynne med fast føde

☐ Hjemmelaget spedbarnsmat/hvordan lage spedbarnsmaten selv

☐ Vitamin D-tilskudd/kosttilskudd

☐ Valg av grøttyper

☐ Matvareallergi/-intoleranse

☐ Andre tema;

Oppgi hvilke:

BAKGRUNNSSPØRSMÅL OM BARNETS MOR OG FAR

35. Hva er mors alder?

Skriv inn mors alder

☐☐ År

36. Hvilken utdannelse har barnets mor og far?

Sett ett kryss for høyeste fullførte utdannelse hos mor og ett kryss for høyeste fullførte utdannelse hos far

	Barnets mor	Barnets far
9/10-årig grunnskole eller kortere	☐	☐
9/10-årig grunnskole *og* folkehøgskole eller annen ett-årig utdanning	☐	☐
Videregående opplæring (gymnas/fagbrev)	☐	☐
Fagskoleutdanning	☐	☐
Høgskole- eller universitetsutdanning på 4 år eller mindre	☐	☐
Høgskole- eller universitetsutdanning på mer enn 4 år	☐	☐
Annet	☐	☐
Vet ikke	☐	☐

37. Hvordan var mors arbeidssituasjon før barnet ble født?

Sykemeldinger i forbindelse med svangerskapet skal ikke regnes med. Dersom flere alternativer passer, kryss av for det alternativet som passer best.

Sett ett kryss

- ☐ Utearbeidende heltid
- ☐ Utearbeidende deltid
- ☐ Hjemmearbeidende
- ☐ Sykemeldt før hun ble gravid
- ☐ Permisjon
- ☐ Uføretrygdet
- ☐ Under attføring
- ☐ Student/skoleelev
- ☐ Arbeidsledig
- ☐ Annet

38. Hvordan er mors familiesituasjon?

Sett ett kryss

- ☐ Samboer
- ☐ Gift
- ☐ Bor alene med barnet/barna
- ☐ Annet

39. Røykte mor i svangerskapet?

Sett ett kryss

- ☐ Nei
- ☐ Ja, men sluttet i 1. trimester (uke 1-12)
- ☐ Ja, men sluttet i 2. trimester (uke 13-24)
- ☐ Ja, men sluttet i 3. trimester (uke 25 frem til fødsel)
- ☐ Ja, av og til (ikke hver dag)
- ☐ Ja, 1-9 sigaretter pr. dag
- ☐ Ja, 10 sigaretter eller flere pr. dag

40. Røyker mor nå?

Sett ett kryss

- ☐ Nei
- ☐ Ja, av og til (ikke hver dag)
- ☐ Ja, 1-9 sigaretter pr. dag
- ☐ Ja, 10 sigaretter eller flere pr. dag

41. Oppholder barnet seg i rom hvor noen røyker?

Sett ett kryss

- ☐ Nei
- ☐ Ja, av og til
- ☐ Ja, flere ganger i uken
- ☐ Ja, daglig

42. Har barnets foreldre eller søsken astma/allergi, eller har de hatt slike plager tidligere?

Her kan du sette flere kryss

- ☐ Nei
- ☐ Mor har/har hatt astma/allergi
- ☐ Far har/har hatt astma/allergi
- ☐ Barnets søsken har/har hatt astma/allergi

Tusen takk for at du tok deg tid til å besvare spørsmålene!

Skjemaet legges i vedlagte svarkonvolutt, men vent med å lime den igjen og sende inn til barnets vekt og lengde er ført inn på skjemaet.

Appendix 4

Semi-quantitative food frequency questionnaire from Spedkost 3

6892

SPEDKOST

Undersøkelse av kostholdet blant spedbarn

Kryss av for "Ja" i ruten under dersom du samtykker i å delta i undersøkelsen. Dersom du ikke ønsker å delta og vil reservere deg mot å bli oppringt samt å bli purret på, kryss av for "Nei" og returner skjemaet.

☐ Ja

☐ Nei

Ved utfylling er det viktig at du går frem slik:

* Sett kryss i boksene. Slik: ☒ Ikke slik: ☒

* Ved rettelser kan du markere tydelig at det er feil, slik: ■

* I de åpne feltene skriver du inn tydelig tekst

* Der det spørres etter tall, skriver du disse slik: 1 2 3 4 5 6 7 8 9

* Skjemaet må ikke brettes

* Det utfylte skjemaet vil bli lest av en maskin. **Bruk blå eller sort kulepenn**.

Fyll inn opplysninger om barnets vekt og lengde - ved fødsel og ved 6 måneders alder (fra helsekortet).

Fylles ut fra helsekortet

Dato for måling av vekt/lengde (6 mnd): ☐☐ ☐☐ ☐☐☐☐

dag mnd år

Barnets vekt (6 mnd): ☐☐☐☐☐ gram **Barnets lengde (6 mnd):** ☐☐ cm

Fødselsvekt: ☐☐☐☐ gram **Lengde ved fødsel:** ☐☐ cm

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BAKGRUNNSSPØRSMÅL OM BARNET

1. Dato for utfylling av skjemaet

Skriv inn datoen for dag, måned og år i rutene.

dag mnd år

2. Hva er barnets kjønn?

*Sett **kun** ett kryss.*

- ☐ Jente
- ☐ Gutt

3. Når ble barnet født i forhold til ultralydstermin?

*Sett **kun** ett kryss.*

- ☐ I 38. svangerskapsuke eller senere
- ☐ Før 38. svangerskapsuke

4. Hvor mange barn har mor født?

*Sett **kun** ett kryss.*

- ☐ 1 barn
- ☐ 2 barn
- ☐ 3 barn
- ☐ 4 barn eller flere

5. Hvem fyller ut skjemaet?

Her kan du sette flere kryss.

- ☐ Barnets mor
- ☐ Barnets far
- ☐ Barnets medmor

SPØRSMÅL OM MORSMELK

6. Hva slags melk og/eller annen drikke fikk barnet på føde-/barselavdelingen?

Her kan du sette flere kryss.

- ☐ Morsmelk
- ☐ Morsmelkerstatning
- ☐ Vann
- ☐ Sukkervann
- ☐ Vet ikke
- ☐ Annet, vennligst spesifiser:

7. Får barnet morsmelk nå?
*Sett **kun** ett kryss.*

- ☐ Ja, bare morsmelk (og eventuelt tran eller annet kosttilskudd) ⇨ *Gå til spm 8 og deretter til spm 11*
- ☐ Ja, morsmelk og annen mat og/eller drikke ⇨ *Gå til spm 8 og deretter til spm 11*
- ☐ Nei, men barnet har fått morsmelk tidligere ⇨ *Gå til spm 9*
- ☐ Nei, barnet har aldri fått morsmelk ⇨ *Gå til spm 10*

8. Hvor mange ganger i døgnet får barnet vanligvis morsmelk nå?
Regn også med de gangene barnet bare får morsmelk til trøst eller kos, dag- og nattetid.
*Sett **kun** ett kryss.*

- ☐ 1 gang
- ☐ 2-3 ganger
- ☐ 4-5 ganger
- ☐ 6-7 ganger
- ☐ 8-9 ganger
- ☐ 10 ganger eller flere

9. Hvor gammelt var barnet da det sluttet å få morsmelk?
*Sett **kun** ett kryss.*

Uker							Måneder								
1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

10. Hva var viktigste og nest viktigste grunn til at mor ikke ammet barnet eller har sluttet å amme det?

*Sett **kun** ett kryss for viktigste grunn og **kun** ett kryss for nest viktigste grunn.*

	Viktigste grunn	Nest viktigste grunn
Sugeproblemer	☐	☐
Barnet ville ikke	☐	☐
Barnet sykt/for tidlig født	☐	☐
Kolikk/urolig barn	☐	☐
Barnet biter/har fått tenner	☐	☐
For lite melk	☐	☐
Mor syk/medisinbruk	☐	☐
Bekymring/stress/sliten	☐	☐
Brystbetennelse	☐	☐
Tilstoppede melkeganger	☐	☐
Såre brystknopper	☐	☐
Brystoperert	☐	☐
Mor begynte å arbeide/å studere	☐	☐
Andre grunner	☐	☐
Ingen spesielle problemer, men ønsket ikke å amme (lenger)	☐	☐
Ble rådet til å slutte	☐	☐

Dersom mor ble rådet til å slutte å amme, hvem var det som rådet henne til det?
(f.eks. helsepersonell, familie, venner)

SPØRSMÅL OM MORSMELKERSTATNING/ANNEN MELK

11. Har barnet begynt å få morsmelkserstatning eller andre typer melk (kumelk, vegetabilsk melk o.l)?

Her regnes både det som drikkes og det som du selv tilsetter i grøt eller annen mat.
*Sett **kun** ett kryss.*

☐ Ja

☐ Nei ⇨ *Gå til spørsmål 15*

12. Hvor gammelt var barnet da det begynte med morsmelkerstatning / annen melk i <u>tillegg</u> til eller istedenfor morsmelk?

Her regnes både det som drikkes og det som du selv tilsetter i grøt eller annen mat.
*Sett **kun** ett kryss.*

Uker							Måneder								
1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

13. Hvor ofte <u>drikker</u> barnet vanligvis morsmelkerstatning og hvor mye drikker barnet vanligvis pr. gang?

Se mengdeangivelse på bilde 1 bakerst i spørreskjemaet. Velg mengde A, B, C eller D. Sett kryss i ruten som er nærmest den mengden barnet vanligvis drikker pr. gang. Hvis mengden varierer mye fra gang til gang, prøv å anslå en gjennomsnittsmengde. 100 ml = 1 dl.

*For hver melketype settes **kun** ett kryss for **hvor ofte,** enten ganger pr. uke eller ganger pr. døgn. I tillegg settes **kun** ett kryss for **hvor mye** barnet vanligvis drikker pr. gang.*

		Hvor ofte?							**Hvor mye?**			
		Ganger pr. uke		*eller*	Ganger pr. døgn				Mengde (ml) pr. gang			
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4	5 el. flere	60 A	120 B	180 C	240 D
NAN Pro1, NAN Organic 1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
NAN Pro2, NAN Organic 2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
NAN H.A. 1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
HiPP Combiotic 1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
HiPP Combiotic 2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Semper Allomin 1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Semper Allomin 2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Holle morsmelkerstatning 1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Holle tilskuddsblanding 2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Annen morsmelkerstatning	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Dersom barnet får annen morsmelkerstatning, oppgi type:

14. Hvor ofte drikker barnet vanligvis melk og hvor mye drikker barnet vanligvis pr. gang?

Se mengdeangivelse på bilde 2 bakerst i spørreskjemaet. Velg mengde A, B, C eller D. Sett kryss i ruten som er nærmest den mengden barnet vanligvis drikker pr. gang. Hvis mengden varierer mye fra gang til gang, prøv å anslå en gjennomsnittsmengde. 100 ml = 1 dl.

*For hver melketype settes **kun** ett kryss for **hvor ofte,** enten ganger pr. uke eller ganger pr. døgn. I tillegg settes **kun** ett kryss for **hvor mye** barnet vanligvis drikker pr. gang.*

	Hvor ofte?								**Hvor mye?**			
	Ganger pr. uke		*eller*	Ganger pr. døgn					Mengde (ml) pr. gang			
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4	5 el. flere	30 A	60 B	120 C	180 D
Helmelk (søt og sur)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lettmelk (1.0 % og 1.2 % fett)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lettmelk (0.5 % fett, tidligere ekstra lett melk)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Skummetmelk (søt og sur)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Kumelksblanding (kumelk-vann-sukker)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Annen melk	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Dersom barnet får annen melk, oppgi type:

SPØRSMÅL OM FAST FØDE

15. Har barnet begynt å få fast føde?

Med fast føde menes alle andre matvarer enn vann/melk/saft/juice/annen drikke og kosttilskudd.
Fast føde inkluderer velling selv om denne er tyntflytende.
*Sett **kun** ett kryss.*

☐ Ja

☐ Nei ⇨ *Gå til spørsmål 25*

16. Hvor gammelt var barnet da det første gang fikk fast føde?

*Sett **kun** ett kryss.*

Uker							Måneder								
1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

17. Hvor ofte pleier barnet å spise følgende mat nå?

Med melk menes her morsmelk, morsmelkerstatning eller annen melk.
*Sett **kun** ett kryss for hver matvare, enten ganger pr. uke eller ganger pr. døgn.*

		Ganger pr. uke		*eller*	Ganger pr. døgn		
INDUSTRIFREMSTILT GRØT/VELLING FRA PULVER:	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4 el. flere
Nestlé grøt	☐	☐	☐	☐	☐	☐	☐
Semper grøt	☐	☐	☐	☐	☐	☐	☐
HiPP grøt	☐	☐	☐	☐	☐	☐	☐
Holle grøt (tilberedt med vann/melk)	☐	☐	☐	☐	☐	☐	☐
Velling (fra pulver eller drikkeklar)	☐	☐	☐	☐	☐	☐	☐
INDUSTRIFREMSTILT GRØT PÅ KLEMMEPOSE:							
Nestlé, HiPP, Lillego, Lev Vel, Organix	☐	☐	☐	☐	☐	☐	☐
Ella's Kitchen	☐	☐	☐	☐	☐	☐	☐
Semper	☐	☐	☐	☐	☐	☐	☐
HJEMMELAGET GRØT:							
Grovt/sammalt mel/havregryn	☐	☐	☐	☐	☐	☐	☐
Hirse	☐	☐	☐	☐	☐	☐	☐
Fint/hvitt mel/kavring/semule/ris/mais	☐	☐	☐	☐	☐	☐	☐

18. Dersom barnet får grøt, hva slags væske tilsettes vanligvis grøten ved tilberedning/koking?

Hvis det vanligvis brukes mer enn én type væske, settes flere kryss.

☐ Vann

☐ Morsmelk

☐ Morsmelkerstatning

☐ Kumelk

☐ Annet

19. Dersom barnet får grøt, hvor store porsjoner spiser barnet vanligvis til hvert måltid?

*Se mengdeangivelse på bilde 3 bakerst i spørreskjemaet. Velg mengde A, B, C, D, E eller F. Sett kryss i ruten som er nærmest den mengden barnet vanligvis spiser pr. gang. Hvis mengden varierer mye fra gang til gang, prøv å anslå en gjennomsnittsmengde. Sett **kun** ett kryss for hver grøttype.*

	Bruker ikke	Noen ts (Bilde A)	0,5 dl (Bilde B)	1 dl (Bilde C)	1,5 dl (Bilde D)	2 dl (Bilde E)	2,5 dl (Bilde F)
Industrifremstilt grøt (inkludert grøt på klemmepose)	☐	☐	☐	☐	☐	☐	☐
Hjemmelaget grøt	☐	☐	☐	☐	☐	☐	☐

20. Hvor ofte pleier barnet å spise følgende mat nå?

*Sett **kun** ett kryss for hver matvare, enten ganger pr. uke eller ganger pr. døgn.*

		Ganger pr. uke		*eller*	Ganger pr. døgn			
INDUSTRIFREMSTILT MIDDAG PÅ GLASS/KLEMMEPOSE:	Aldri/sjeldnere enn hver uke	1-3	4-6		1	2	3	4 el. flere
Potet/grønnsaker	☐	☐	☐		☐	☐	☐	☐
Kjøtt og grønnsaker	☐	☐	☐		☐	☐	☐	☐
Fisk og grønnsaker	☐	☐	☐		☐	☐	☐	☐
HJEMMELAGET MIDDAG:								
Potet/grønnsaker	☐	☐	☐		☐	☐	☐	☐
Kjøtt og grønnsaker	☐	☐	☐		☐	☐	☐	☐
Fisk og grønnsaker	☐	☐	☐		☐	☐	☐	☐
Annen hjemmelaget middag	☐	☐	☐		☐	☐	☐	☐
INDUSTRIFREMSTILT FRUKT-/BÆR-/GRØNNSAKSMOS PÅ GLASS/KLEMMEPOSE:								
Smoothie/frukt-/bærmos, kun frukt/bær	☐	☐	☐		☐	☐	☐	☐
Smoothie/frukt-/bærmos med korn	☐	☐	☐		☐	☐	☐	☐
Smoothie/frukt-/bærmos med yoghurt, med/uten korn	☐	☐	☐		☐	☐	☐	☐
Frukt- og grønnsaksmos	☐	☐	☐		☐	☐	☐	☐
HJEMMELAGET FRUKT-/BÆR-/GRØNNSAKSMOS:								
Hjemmelaget smoothie/frukt-/bærmos	☐	☐	☐		☐	☐	☐	☐
Hjemmelaget frukt- og grønnsaksmos	☐	☐	☐		☐	☐	☐	☐
ANNEN MAT:								
Brød	☐	☐	☐		☐	☐	☐	☐
Yoghurt	☐	☐	☐		☐	☐	☐	☐
Is	☐	☐	☐		☐	☐	☐	☐
Kjeks/kaker	☐	☐	☐		☐	☐	☐	☐
Riskaker	☐	☐	☐		☐	☐	☐	☐
Spinat	☐	☐	☐		☐	☐	☐	☐

6892

21. Hvor ofte pleier barnet å få industrifremstilt mat på klemmepose?
*Sett **kun** ett kryss for hver matvare, enten ganger pr. uke eller ganger pr. døgn.*

		Ganger pr. uke		*eller*	Ganger pr. døgn		
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4 el. flere
Grøt på klemmepose	☐	☐	☐	☐	☐	☐	☐
Frukt/grønnsaker på klemmepose	☐	☐	☐	☐	☐	☐	☐
Middag på klemmepose	☐	☐	☐	☐	☐	☐	☐
Yoghurt på klemmepose	☐	☐	☐	☐	☐	☐	☐

22. Pleier barnet å få økologiske produkter?
*Sett **kun** ett kryss for hver matvare.*

	Ja, vanligvis	Ja, av og til	Nei, sjelden/aldri
Grøt/velling	☐	☐	☐
Middag	☐	☐	☐
Frukt	☐	☐	☐
Grønnsaker	☐	☐	☐
Andre økologiske produkter	☐	☐	☐

23. Hvor gammelt var barnet da det fikk følgende matvarer for første gang?
*Sett **kun** ett kryss for hver matvare.*

		Måneder					
	Ikke fått	1	2	3	4	5	6
Mais-/ris-/hirsegrøt	☐	☐	☐	☐	☐	☐	☐
Havre-/hvete-/bygg-/ kavringgrøt	☐	☐	☐	☐	☐	☐	☐
Frukt-/bærmos	☐	☐	☐	☐	☐	☐	☐
Moset potet	☐	☐	☐	☐	☐	☐	☐
Moste grønnsaker	☐	☐	☐	☐	☐	☐	☐
Moset kjøtt	☐	☐	☐	☐	☐	☐	☐
Moset fisk	☐	☐	☐	☐	☐	☐	☐
Brød	☐	☐	☐	☐	☐	☐	☐
Yoghurt	☐	☐	☐	☐	☐	☐	☐
Nøtter/nøtteprodukter (peanøttsmør o.l.)	☐	☐	☐	☐	☐	☐	☐

24. Hva var viktigste og nest viktigste grunn til at barnet begynte med fast føde?

Med fast føde menes alle andre matvarer enn vann/melk/saft/juice/annen drikke og kosttilskudd.
Fast føde inkluderer velling selv om det er tyntflytende.
*Sett **kun** ett kryss for viktigste grunn og **kun** ett kryss for nest viktigste grunn.*

	Viktigste grunn	Nest viktigste grunn
Barnet var gammelt nok til å begynne med fast føde	☐	☐
Barnet virket sultent	☐	☐
Barnet viste tydelig interesse for fast føde	☐	☐
Ingen spesiell grunn, men ønsket å gi barnet fast føde	☐	☐
Ønsket å venne barnet til nye konsistenser og smaker	☐	☐
Ønsket å forebygge utvikling av allergiske sykdommer	☐	☐
Fikk råd av lege, helsesøster eller annet helsepersonell om å starte med fast føde	☐	☐
Fikk råd av venner/familie om å starte med fast føde	☐	☐
Håpet at barnet ville sove bedre om natten	☐	☐
Mor begynte å arbeide/studere	☐	☐
Hadde for lite morsmelk	☐	☐
Barnet hadde ikke tilstrekkelig vektøkning	☐	☐
Mor var syk/medisinbruk	☐	☐
Barnet har en medisinsk tilstand som gjorde at det var gunstig å starte med fast føde	☐	☐
Andre grunner, vennligst spesifiser:	☐	☐

6892

SPØRSMÅL OM VANN, SAFT, JUICE O.L.

25. Har barnet begynt å få vann, saft, juice o.l?
*Sett **kun** ett kryss.*

☐ Ja

☐ Nei ⇨ *Gå til spørsmål 29*

26. Hvor ofte pleier barnet å drikke vann, saft, juice o.l., og hvor mye drikker barnet vanligvis pr. gang?
Se mengdeangivelse på bilde 2 bakerst i spørreskjemaet. Velg mengde A, B, C eller D. Sett kryss i ruten som er nærmest den mengden barnet vanligvis drikker pr. gang. Hvis mengden varierer mye fra gang til gang, prøv å anslå en gjennomsnittsmengde. 100 ml = 1 dl.

*For hver drikk settes **kun** ett kryss for **hvor ofte,** enten ganger pr. uke eller ganger pr. døgn. I tillegg settes **kun** ett kryss for **hvor mye** barnet vanligvis drikker pr. gang.*

	Hvor ofte?							**Hvor mye?**			
	Ganger pr. uke		*eller*	Ganger pr. døgn				Mengde (ml) pr. gang			
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2	3	4	5 el. flere	30 A	60 B	120 C	180 D
Vann	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Barnedrikk (Nestlé, HiPP o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Saft, sukret	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Saft, kunstig søtet	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Brus, sukret	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Brus, kunstig søtet	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Juice	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Nektar (eplenektar o.l.)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

27. Dersom barnet får vann nå, hvor gammelt var barnet da det begynte å få dette?
*Sett **kun** ett kryss.*

Ikke fått	Uker							Måneder								
	1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

28. Dersom barnet får saft, juice o.l. nå, hvor gammelt var barnet da det begynte å få dette? *Sett **kun** ett kryss.*

Ikke fått	Uker							Måneder								
	1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

ANDRE SPØRSMÅL OM BARNETS KOSTHOLD

29. Er det noen matvarer det kunne være aktuelt å gi barnet, men som du unngår å gi fordi du er redd barnet kan reagere med allergi/intoleranse?

*Sett **kun** ett kryss.*

☐ Ja

☐ Nei ⇨ *Gå til spørsmål 31*

30. Hvilke matvarer/ingredienser i matvarer unngår du å gi barnet?

Her kan du sette flere kryss.

☐ Glutenholdig mel/korn (hvete, rug og bygg)

☐ Vanlig kumelk

☐ Morsmelkerstatning

☐ Appelsin/appelsinjuice/annen sitrusfrukt

☐ Fisk/skalldyr

☐ Nøtter/nøtteprodukter (peanøttsmør o.l.)

☐ Belgfrukter (erter, bønner o.l.)

☐ Egg

☐ Soya

☐ Matvarer med tilsetningsstoffer

☐ Annet

31. Har barnet hatt problemer i forbindelse med spising/mat?

Her kan du sette flere kryss.

☐ Nei, har ikke hatt noen problemer

☐ Ja, dårlig matlyst

☐ Ja, problemer med svelging/suging

☐ Ja, allergi/intoleranse mot enkelte matvarer

☐ Ja, andre problemer

Oppgi hvilke:

6892

SPØRSMÅL OM KOSTTILSKUDD

32. Får barnet vitamin D-tilskudd (som vitamin D-dråper/tran) eller annet kosttilskudd nå?
*Sett **kun** ett kryss.*

☐ Ja

☐ Nei, men barnet har fått vitamin D-tilskudd/kosttilskudd tidligere ⇨ *Gå til spørsmål 34*

☐ Nei, barnet har aldri fått vitamin D-tilskudd/kosttilskudd ⇨ *Gå til spørsmål 35*

33. Hvor ofte får barnet vanligvis vitamin D-tilskudd eller annet kosttilskudd, og hvor mye får barnet pr. gang?
*For hvert kosttilskudd settes **kun** ett kryss for **hvor ofte,** enten ganger pr. uke eller ganger pr. døgn. I tillegg settes **kun** ett kryss for **hvor mye** barnet vanligvis får pr. gang.*

Det er satt opp to mengder for en teskje; 3 ml (liten teskje) og 5 ml (stor teskje).

	Hvor ofte?					**Hvor mye?**					
	Ganger pr. uke			*eller*	Ganger pr. døgn	Mengde pr. gang					
	Aldri/sjeldnere enn hver uke	1-3	4-6	1	2 el. flere	1 ts (3 ml)	1 ts (5 ml)	1 bs (7 ml)	1 ss (10 ml)		
Tran	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Vitamin D-dråper	☐	☐	☐	☐	☐	☐ 3 dråper	☐ 5 dråper				
Flytende multivitaminer (Sana-sol, Biovit, Nycoplus multi vitaminmikstur o.l.)	☐	☐	☐	☐	☐	☐ 1 ts (3 ml)	☐ 1 ts (5 ml)	☐ 1 bs (7 ml)	☐ 1 ss (10 ml)		
Joddråper	☐	☐	☐	☐	☐	☐ 1/2 dråpe	☐ 1 dråpe	☐ 2 dråper			
Tang-/taremel	☐	☐	☐	☐	☐	☐ 1/4 knivsodd	☐ 1/2 knivsodd	☐ 3/4 knivsodd	☐ 1 knivsodd		
Annet kosttilskudd	☐	☐	☐	☐	☐	☐ 1 ts (3 ml)	☐ 1 ts (5 ml)	☐ 1 bs (7 ml)	☐ 1 ss (10 ml)	☐ 3 dråper	☐ 5 dråper

Oppgi hvilke:

34. Hvor gammelt var barnet da det første gang fikk vitamin D-tilskudd?

*Sett **kun** ett kryss.*

	Uker							Måneder								
Ikke fått	1	2	3	4	5	6	7	2	2,5	3	3,5	4	4,5	5	5,5	6
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

BAKGRUNNSSPØRSMÅL OM BARNETS MOR OG FAR

35. Hva er mors alder?

Skriv inn mors alder.

☐☐ År

36. Hvilken utdannelse har barnets mor og far?

*Sett **kun** ett kryss for høyeste fullførte utdannelse hos mor og **kun** ett kryss for høyeste fullførte utdannelse hos far.*

	Barnets mor	Barnets far
9/10-årig grunnskole eller kortere	☐	☐
9/10-årig grunnskole *og* folkehøgskole eller annen ett-årig utdanning	☐	☐
Videregående opplæring (videregående skole/gymnas/fagbrev/svennebrev)	☐	☐
Fagskole	☐	☐
Høgskole- eller universitetsutdanning på 4 år eller mindre	☐	☐
Høgskole- eller universitetsutdanning på mer enn 4 år	☐	☐
Annet	☐	☐
Vet ikke	☐	☐

37. Hvordan var mors arbeidssituasjon før barnet ble født?

Sykemeldinger i forbindelse med svangerskapet skal ikke regnes med. Dersom flere alternativer passer, kryss av for det alternativet som passer best.
*Sett **kun** ett kryss.*

- ☐ Inntektsgivende arbeid heltid
- ☐ Inntektsgivende arbeid deltid
- ☐ Sykemeldt før hun ble gravid
- ☐ Permisjon
- ☐ Ufør
- ☐ Under arbeidsavklaring
- ☐ Hjemmearbeidende
- ☐ Student/skoleelev
- ☐ Arbeidsledig
- ☐ Annet

38. Har mor et vegetarisk kosthold?
*Sett **kun** ett kryss.*

- ☐ Nei
- ☐ Ja, mor er vegetarianer og inkluderer melkeprodukter og egg i kosten (ovolakto-vegetarianer)
- ☐ Ja, mor er vegetarianer og inkluderer melkeprodukter, men ikke egg i kosten (lakto-vegetarianer)
- ☐ Ja, mor er vegetarianer og utelater alle melkeprodukter og egg fra kosten (veganer)

39. Hvordan er mors familiesituasjon?
*Sett **kun** ett kryss.*

- ☐ Samboer
- ☐ Gift
- ☐ Bor alene med barnet/barna
- ☐ Annet

40. Bruker mor, eller har mor brukt snus?
*Sett **kun** ett kryss.*

- ☐ Nei
- ☐ Ja, men har sluttet
- ☐ Ja, av og til
- ☐ Ja, daglig

41. Røykte mor i svangerskapet?
*Sett **kun** ett kryss.*

- ☐ Nei
- ☐ Ja, men sluttet i 1. trimester (uke 1-12)
- ☐ Ja, men sluttet i 2. trimester (uke 13-24)
- ☐ Ja, men sluttet i 3. trimester (uke 25 frem til fødsel)
- ☐ Ja, av og til (ikke hver dag)
- ☐ Ja, 1-9 sigaretter pr. dag
- ☐ Ja, 10 sigaretter eller flere pr. dag

42. Røyker mor nå?
*Sett **kun** ett kryss.*

- ☐ Nei
- ☐ Ja, av og til (ikke hver dag)
- ☐ Ja, 1-9 sigaretter pr. dag
- ☐ Ja, 10 sigaretter eller flere pr. dag

43. Har barnets foreldre eller søsken astma/allergi, eller har de hatt slike plager tidligere?
Her kan du sette flere kryss.

- ☐ Nei
- ☐ Mor har/har hatt astma/allergi
- ☐ Far har/har hatt astma/allergi
- ☐ Barnets søsken har/har hatt astma/allergi

44. På et senere tidspunkt kan det bli aktuelt å knytte andre undersøkelser til Spedkoststudien. Kan vi kontakte deg igjen med forespørsel om å være med i denne typen undersøkelser?

- ☐ Ja
- ☐ Nei

Tusen takk for at du tok deg tid til å besvare spørsmålene!

Spørreskjemaet postlegges i vedlagte svarkonvolutt.