

# Early Inuit Child Health in Canada

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## Report 2: Breastfeeding among Inuit in Canada

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## INTRODUCTION

Reports have been emerging that suggest Inuit have rates of breastfeeding that are lower than other Aboriginal populations in Canada, and lower than the national average(1). This is in contrast to historical reports of early child feeding for Inuit in the Canadian Arctic where it is said that breastfeeding was the traditional way of feeding an infant and continued for a long time relative to general Canadian population. A child would usually be weaned when the mother became pregnant with her next child. On average this was 3 years but it was not uncommon to have children as old as five years still being breastfed(2). The Inuit Children's Health report(3) based on the Aboriginal Peoples Survey (APS) of 2001 and the Indigenous Children's Health Report: Health Assessment in Action(1) based on the Aboriginal Children's Survey (ACS) of 2006 both reported breastfeeding initiation for all Inuit children at 66% compared to 80% for the rest of Canada.

Since breastfeeding has the potential of preventing infant mortality, reducing chronic diseases, improving immunity, and strengthening maternal-infant bond, exploration of the factors influencing the breastfeeding practices of Inuit mothers might help inform efforts to increase the rate. This report used questions from the 2006 Aboriginal Children's Survey (ACS) to analyze the breastfeeding practices and the factors that maybe influencing breastfeeding among Inuit mothers.

The 2006 Aboriginal Children's Survey (ACS) was a post Statistics Canada 2006 - census survey which provides information on the health, development and well-being of First Nations, Métis and Inuit children under 6 years of age and living off reserve in urban, rural, and northern locations in Canada. The number of Inuit children included in the survey was 1, 693 of which there were 459 under one year of age and 1, 234 who were aged one to five. At the time of the 2006 census there were 7000 Inuit children under the age of six living throughout Canada. The majority of these children (about 84%) reside in Inuit Nunangat. Inuit Nunangat is an Inuktitut term used to describe the collective Inuit homeland comprised of the 4 Inuit land claim regions: Nunatsiavut, Nunavik, Nunavut and the Inuvialuit Regional Settlement (Figure 1). For the purpose of this report, analyses included only responses from biological parents of the child in order to better understand the determinants of breastfeeding for those who are able to breastfeed because the infant lives with them. This is not meant to disregard the importance of custom adoption for Inuit but rather give context to the breastfeeding information that was gathered in the Aboriginal Children's Survey 2006.



**Figure 1: The four regions of Inuit Nunangat.** This map depicts the four Inuit Regions in Canada: The Inuvialuit Settlement Region in the Northwest Territories, the territory of Nunavut, Nunavik in northern Quebec, and Nunatsiavut in northern Labrador. **Source:** Inuit Tapiriit Kanatami (ITK).

## BREASTFEEDING

Breastfeeding is important for both infants and mothers. Breast milk is widely recognized as the best source of nourishment for the baby. Human breast milk is a perfect combination of proteins, lipids, carbohydrates, vitamins, minerals, enzymes and living cells that meet the nutritional and immunological requirements of the infant(4, 5). Many essential components for the development of the brain and eye are found in the right amounts in human milk(6). Breast milk proteins contain necessary immunological components needed to fight infections when the immature infant gut is highly vulnerable. This becomes especially important in preterm birth and low birth weight infants in preventing infection(7). Health Canada states that breastfeeding contributes to the prevention of gastrointestinal tract (GI) infections, respiratory tract infections, allergies, asthma, Sudden Infant Death Syndrome (SIDS) and also enhances the cognitive development of the infant(8). The protective effects of breastfeeding against many chronic diseases such as asthma, dermatitis(9-11), respiratory tract infection(12-16), otitis media(17-19), insulin dependent diabetes mellitus(20-22), obesity(23-25), cancer(26) have been supported scientifically. Breastfeeding has been indicated in promoting faster postpartum weight loss for the mother(27), reduce arthritis risk(28) and reduce risk of breast cancer for the mother(29). Breast cancer mortality for Inuit in Nunavut is half that of the rest of Canada and is attributed to higher fertility rates and prolonged breastfeeding in Nunavut(30).

## METHODS

To analyze the breastfeeding rates of Inuit infants, questions regarding breastfeeding (Q. D), demographics of the biological mother (Q. B), birth weight of the infant (Q. C2) from the 2006 ACS were used (see Appendix 1). This analysis was carried out using a weighted sample representing 3990

Inuit infants. Regional differences were analyzed where sufficient data was available. When only limited sample sets were available responses of Inuit living in Inuit Nunangat and Inuit living outside of Inuit Nunangat was compared. The rate of breastfeeding initiation was based on any breastfeeding reported in response to question D1a. The duration of breastfeeding was calculated for 6 months and 12 months based on the question D1b which asks the length of breastfeeding. Graphpad Instat was used to perform statistical analysis(31). For comparing two groups of data, unpaired t-test with Welch’s correction was performed. For groups of more than 3, One-way ANOVA with post tests was performed.

## RESULTS

### Duration of breastfeeding for Inuit children

The rate of initiation of breastfeeding for all Inuit children aged 1-5 years in Canada surveyed in the 2006 ACS, was 76%. Twenty-four percent of children were never breastfed. Of the infants who were breastfed, 58% were breastfed for more than 6 months and 36% for more than 12 months [Figure 2]. Although the rates of initiation are lower compared to the national average of 90% (as of 2009), more Inuit infants are breastfed longer (58% breastfed at 6 months vs. 53% for the rest of Canada(32)). Only valid responses were included in the analysis.

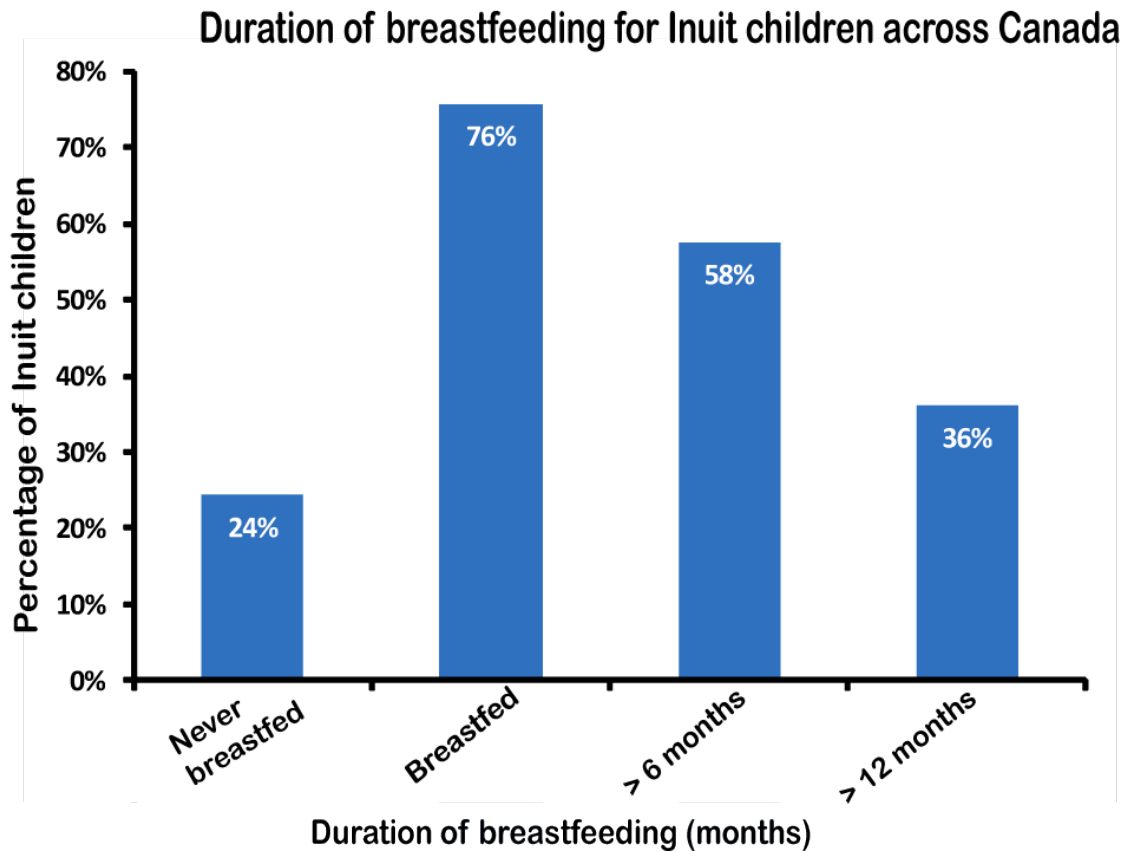


Figure 2: Duration of Breastfeeding of Inuit children across Canada.

## Duration of breastfeeding for Inuit children based on area of residence

Prolonged breastfeeding is the traditional norm for Inuit. The support of family and community plays a role in prolonged breastfeeding. We wondered if Inuit who live outside of Inuit Nunangat and therefore may lack some of this community support, breastfed for as long as Inuit living in Inuit Nunangat.

As shown in Figure 3, there was no statistically significant difference in the rate of initiation of breastfeeding between children who reside in Inuit Nunangat or live outside of Inuit Nunangat (p value 0.514); however breastfeeding beyond 6 months and 12 months was significantly higher for infants who reside in Inuit Nunangat.

In Inuit Nunangat, of those children breastfed, 60% of children were breastfed for more than 6 months compared to 49% of children living outside of Inuit Nunangat ( $p < 0.0001$ ). The difference is more striking for children breastfed for 12 months or more. Of those that were breastfed, 41% of children living in Inuit Nunangat were breastfed for 12 months or more, compared to 21% living outside of Inuit Nunangat ( $p < 0.0001$ ). The rates of breastfeeding for 6 months in the general population of Canada are 53% however the rates for 12 months are not available.

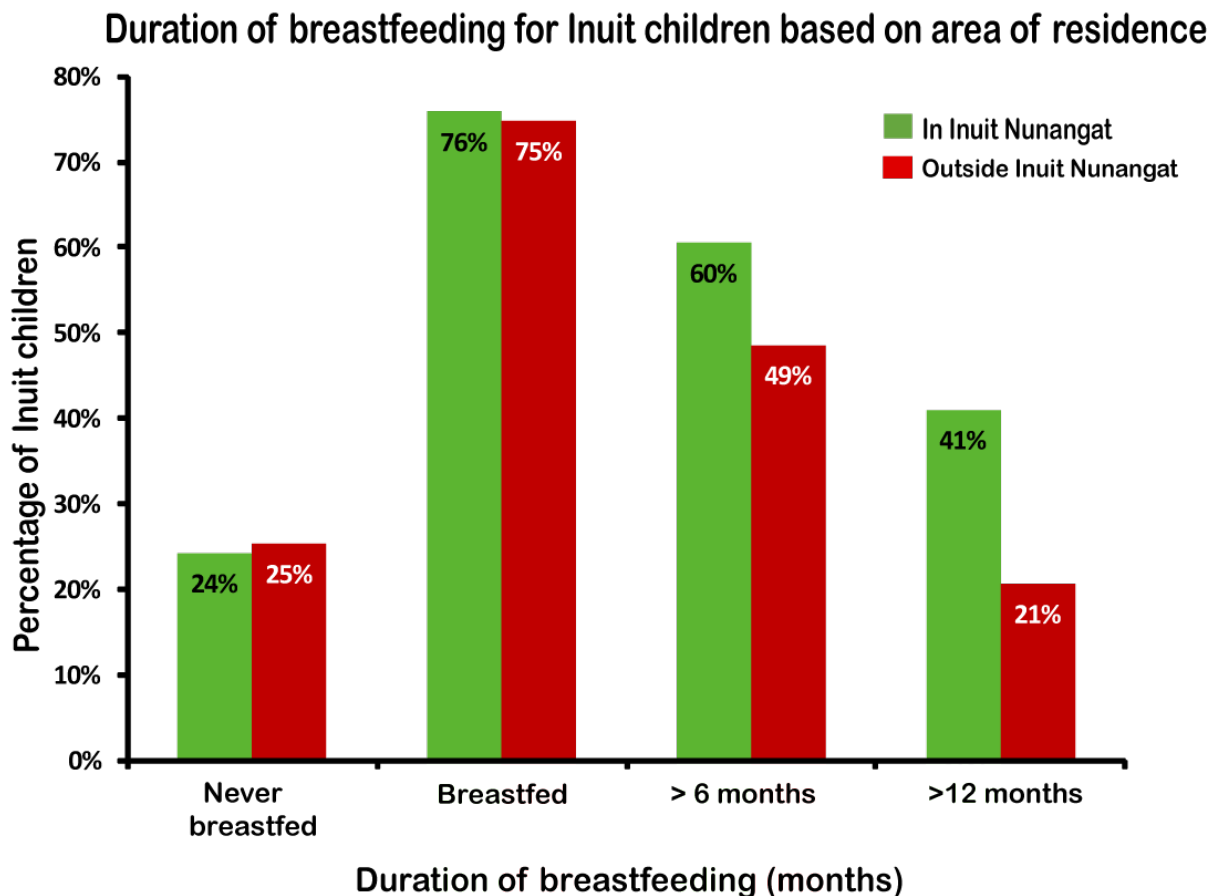
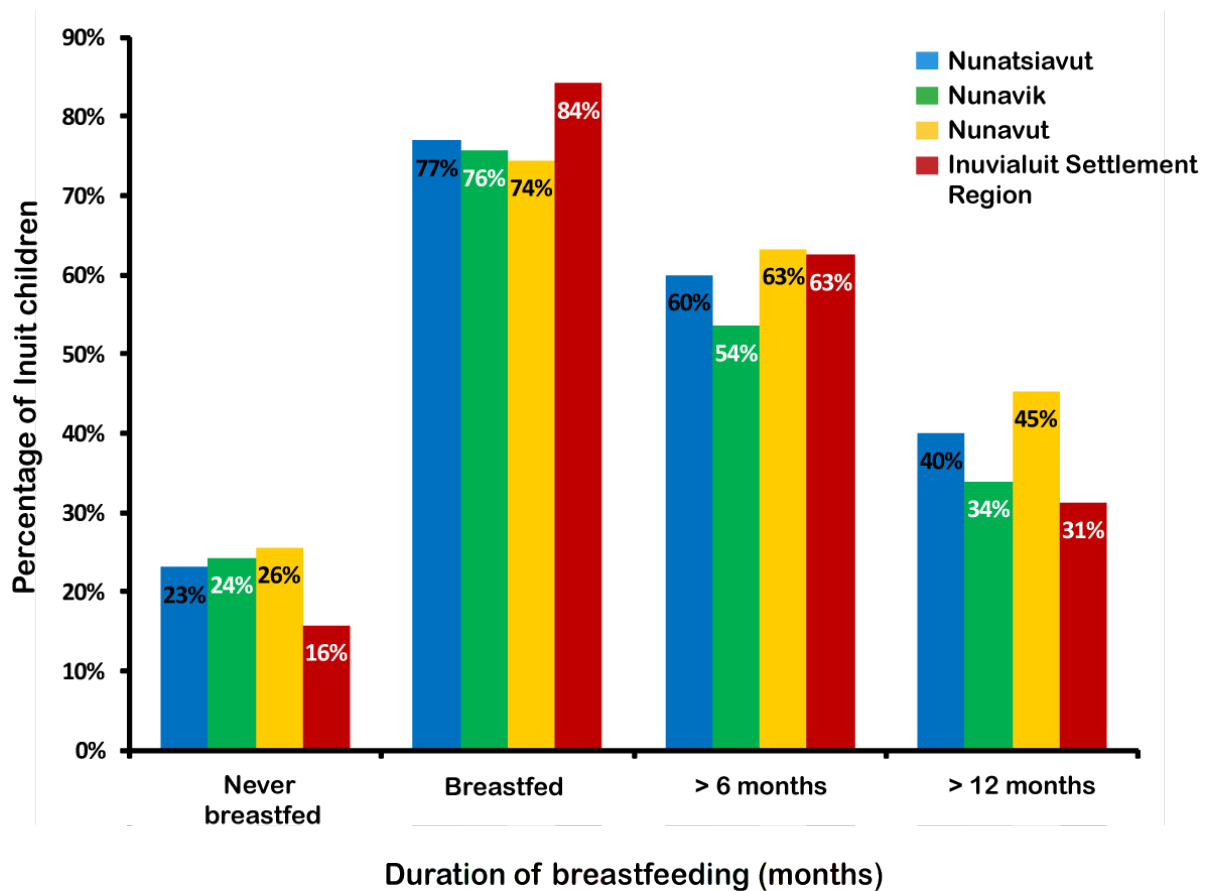


Figure 3: Duration of Breastfeeding for Inuit children based on the area of residence.

## Duration of Breastfeeding in each Inuit Region

Regional differences in breastfeeding rates within the four Inuit regions were charted as shown in Figure 4, in order to understand if regional differences exist. There was a significant difference between the number of children ever breastfed between Nunavut and Inuvialuit Settlement Region ( $p < 0.05$ ), whereas no significant differences existed between the other regions. For breastfeeding beyond 6 months, Nunavik had a lower rate and was significantly different from Nunavut ( $p < 0.001$ ). At 12 months, a significant difference in breastfeeding was seen between Nunavut and Nunavik ( $p < 0.001$ ) and Nunavut vs Inuvialuit ( $p < 0.01$ ) with more Nunavut children breastfed longer than 12 months.



**Figure 4: The duration of breastfeeding for Inuit children categorized by Inuit region in Inuit Nunangat.**

## Duration of breastfeeding based on the birth weight of the infant

The rate of low birth weight infants is higher in Inuit Nunangat compared to the rest of Canada(33). One of the challenges in caring for the low birth weight infants is initiating and sustaining breastfeeding. Our analyses wanted to include this important factor to see if low birth weight was a barrier to breastfeeding.

Infants who were born below 2500 g (5 lb 8 oz) were considered low birth weight infants in this analysis. This category includes premature infants, as well as those who were a small size at term.

As shown in Figure 5, at least 47% or maybe higher (sample size restrictions limited our ability to calculate the maximum rate) of low birth weight babies are never breastfed compared to only 20% of normal birth weight babies ( $p < 0.0001$ ).

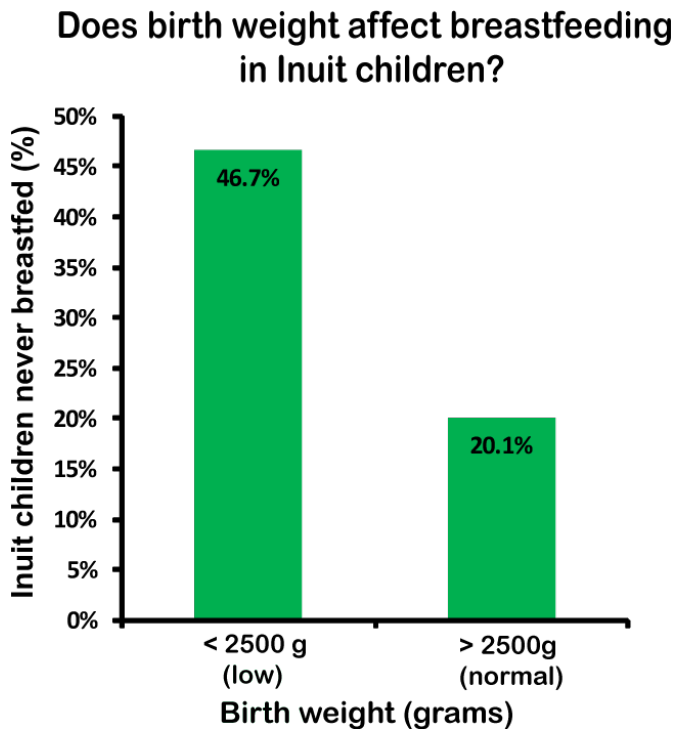


Figure 5: Percentage of never breastfed Inuit children based on birth weight.

## DISCUSSION

### Inuit breastfeeding practices compared to other populations

Health Canada recommends exclusive breastfeeding for all infants up to 6 months of age followed by breastfeeding combined with a nutrient rich diet up to 2 years or more(34). Today, more than 90% of women in the developing world and 50-90% in the industrialized nations initiate breastfeeding but only 35% of them still breastfeed at 4 months of age(35). In Canada, as of 2006, 90% of women initiated breastfeeding with 53% still breastfeeding at 6 months, but only 14.4% exclusively breastfeeding at 6 months(32, 36, 37). A 2009 report of the analysis of the 2006 Aboriginal Children's Survey reported breastfeeding initiation rates in the Aboriginal populations of Canada to be lower than the national average. The rate of initiation of breastfeeding among Inuit was reported at 66%, although sustained breastfeeding at 6 months was reported as 54% which is equivalent to the national average(1). That

report did not take into consideration the fact that up to 30% of Inuit children are involved in custom adoption(38), resulting in an underestimation of the breastfeeding rate among infants living with their biological parents. Similar to what was seen in this analyses, a recent report that took adoption into consideration suggested an 80% rate of breastfeeding among Inuit living in selected communities of Nunavut (39).

## **Factors affecting breastfeeding rates in Inuit**

The rate of breastfeeding initiation among Inuit has been reported to be 66% in both 2001(APS) and 2006 (ACS) without any increase. Our analyses does show that this may be an underestimate since breastfeeding initiation rate of infants in the care of their biological mother is 76% which is closer to but still less than the national average at 90%. However, the analyses also show that once initiated, Inuit mothers breastfeed for prolonged periods. The Canada Prenatal Nutrition Program - First Nations and Inuit Component (CPNP - FNIC) has been operating since 1994 and aims to improve maternal and infant nutritional health and increase breastfeeding initiation and duration times(40). However, even with these programs in place, the initiation rate of breastfeeding appears to not have changed since 2001. There are also regional differences seen such as Inuvialuit Regional Settlement showing a significantly higher breastfeeding initiation compared to other regions in Inuit Nunangat. Several factors may contribute to the lower initiation of breastfeeding. Custom adoption is one such factor and remains a common practice among Inuit communities today. The biological mother often retains a special relationship with the child and plays an active role in their lives(2). In some situations, the biological mother breastfeeds the infant but this information was not available in the survey. Mothers residing in Inuit communities show higher rates of prolonged breastfeeding; therefore community support for breastfeeding is beneficial. Although not explored in this study, possible deterrents of lower breastfeeding initiation could include the mother's apprehensions of the quality of her milk such as for those who smoke(41) and concerns about environmental contaminants(42-44). Access to support and a lack of lactation consultants may be another potential issue. If women who want to breastfeed but have a lot of difficulty, they may not have the support that is needed. Also important to note is that close to 50% of low birth weight babies are never breastfed. Barriers to breastfeeding the preterm and low birth weight infants might include separation of infants from mothers, or cultural barriers to breastfeeding when mothers and infants are transferred to high risk centers. Education, counseling and interventions have been shown to facilitate the increase of breastfeeding initiation and sustenance in some Aboriginal communities such as the Sagkeeng First Nation(45). Thus, identifying the needs and providing appropriate support may help overcome the hurdles in initiation of breastfeeding.

## **CONCLUSION**

The analyses of the 2006 Aboriginal Children's Survey data on breastfeeding among Inuit demonstrated positive trends with nearly 76% of Inuit infants being breastfed initially. This is higher than previous published reports of breastfeeding of Inuit children. Furthermore, a high rate of women continue breastfeeding for greater than a year. The percentage of Inuit children living in Inuit Nunangat who were breastfed for more than 12 months was 41%. This is much higher than what is seen in the general Canadian population. That being said, the rate of breastfeeding initiation among Inuit has been found to



be comparatively lower and thus warrants the need to address barriers to initiation of breastfeeding. More health promotion programs which are culturally and linguistically appropriate for Inuit available throughout Inuit Nunangat may help.

## LIMITATIONS

- Data used for the analyses is based on the data from the ACS 2006 which is a nationwide survey and hence include certain limitations. Although technical advisory groups consisting of aboriginal advisors, parents, early childhood educators were involved in the design of the survey the questions may be understood differently by people answering them.
- Although the questions were all translated into Aboriginal languages and Aboriginal interviewers were used for the most part, there is a possibility of communication barriers and cultural misunderstandings.
- The data is based on the answers provided by parents retrospectively. The time of interview is not necessarily the time during which the child was breastfed; hence the answers are based on the recollection by the parents of information that was a few months to 5 years old.
- Also, the place of residence of the mother/child at the time of breastfeeding may not be similar to their place of residence when the child was being breastfed, hence the comparison of breastfeeding rates for those living in Inuit Nunangat vs. outside of Inuit Nunangat have to be taken with that caveat.

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## APPENDIX I

Q.no	ACS Section	Question
B	Household rooster	The next section is about the people who currently live in your home. Starting with you could you give me the first name, date of birth, age, sex and marital status of all the people living in your home and their relationship to _____?
C2	Child's Health	How much did _____ weigh at birth (Interviewer: Accept respondents best estimate.) __ Pounds __ Ounces Or _____ Grams 1. Don't know 2. Refused
D1	Food and Nutrition	a. Was_____ ever breastfed? 1. Yes 2. No 3. Don't know 4. Refused b. For how long? __ Months Or __ Years 1. Less than a month 2. Don't know 3. refused