The Effects of Preconception Dietary Restriction on Subsequent Birth Outcomes

by

Alyssa Rollins

A THESIS

submitted to

Oregon State University
University Honors College

in partial fulfillment of
the requirements for the
degree of

Honors Baccalaureate of Science in Public Health
(Honors Scholar)

Presented April 4, 2016
Commencement June 2016
AN ABSTRACT OF THE THESIS OF

Alyssa Rollins for the degree of Honors Baccalaureate of Science in Public Health presented on April 4, 2016. Title: The Effects of Preconception Dietary Restriction on Subsequent Birth Outcomes.

Abstract approved: ___________________________________________________________

Viktor Bovbjerg

**Objective:** This study used the Oregon Pregnancy Risk Assessment Monitoring System (PRAMS) to explore the relationship between preconception dietary restriction and subsequent birth outcomes in an attempt to quantify their association. **Methods:** The survey question of interest focused on changing diet to lose weight during preconception. Descriptive statistics were calculated as proportions for categorical variables and as means with standard deviations for continuous variables. Associations between preconception dieting and birth outcomes were illustrated using contingency tables, odds ratios, and Pearson chi-square statistics for categorical outcomes and independent samples t-tests, t-statistics, and p-values for continuous variables. **Results:** Of the 6050 women in the study sample, 1365 (26.5%) reported dieting to lose weight before conception. White women ages 24-35 were more likely to diet. 68.8% of dieting women exercised at least 3 days a week; only 38.5% of women exercised but did not diet. The average body mass index of dieting women (28.97 ± 6.80) was 3.18 points higher than non-dieting women, and women who dieted gained more weight during pregnancy. Dieting women were also more likely to have C-sections and babies large for their gestational age (LGA). **Conclusion:** The higher preconception BMI and weight gain during pregnancy of women who dieted were likely the main factors contributing to the significant associations found between preconception dietary restriction and exercise patterns, C-section rates, and babies who were LGA.

Key Words: preconception, dietary restriction, PRAMS, pregnancy

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I understand that my project will become part of the permanent collection of Oregon State University, University Honors College. My signature below authorizes release of my project to any reader upon request.

Alyssa Rollins, Author
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Introduction

Public health has made great strides in the area of women’s health care over the past century (Centers for Disease Control and Prevention [CDC], 2015b). Significant advancements such as improved rates of breast cancer screening, more successful cervical cancer screening and prevention methods, a greater variety and availability of safe, effective forms of birth control, and mandatory maternity care coverage through the Affordable Care Act are greatly improving the health of women in the United States (Office on Women’s Health, 2014). Despite this healthier modern female population, many women are still being negatively affected by pregnancy complications and poor birth outcomes. According to the CDC, pregnancy-related mortality claimed the lives of about 700 women in 2010, which was a steady increase from the late 1980s (CDC, 2015b). The rate of women who suffered from severe maternal morbidity, or serious health complications of pregnancy, more than doubled from 2000 to 2010 (CDC, 2015b).

This persistent issue of pregnancy complications may be due in part to the fact that a woman’s reproductive health is influenced by her overall health status during her reproductive years (World Health Organization, 2009). The months leading up to conception, known as the preconception period, are a particularly formative time for a woman’s health. The health decisions she makes during this time can impact her ability to have a successful pregnancy and subsequently a healthy child (Office on Women’s Health, 2010). Preconception nutrition in particular has been associated with fertility as dietary intake affects a woman’s reproductive functioning (American Pregnancy Association, 2015). Over the past decade, dietary restriction has seen an increased presence in the media and popular culture. When women restrict their diets to lose
weight, they affect their dietary intakes and therefore their reproductive health. In particular, dietary restriction during the preconception period could potentially lead to negative birth outcomes (Office on Women’s Health, 2010).

The CDC supports an epidemiological surveillance system called the Pregnancy Risk Assessment Monitoring System, or PRAMS. Through the use of birth certificates and an extensive survey, PRAMS collects population data for each participating state on a wide variety of maternal experiences and health practices before, during, and after pregnancy (CDC, 2015a). State governments and other researchers can draw on the collected data to measure changes in maternal and child health indicators, to develop health promotion programs by identifying vulnerable populations, or to compare maternal health data between different areas of the country (CDC, 2015a). The PRAMS survey includes a question of particular interest to this project that identifies women who changed their dietary behaviors to lose weight during preconception. The survey defines preconception as the twelve months leading up to conception.

The purpose of this exploratory project was to use Oregon PRAMS data from 2009-2011 to look at the relationship between preconception dieting and subsequent birth outcomes in an attempt to quantify their association. These relationships have not been well enough explored to make firm predictions regarding the direction of any associations. The data were also used to describe the prevalence of preconception dietary restriction among Oregon PRAMS participants and identify predictors of preconception dietary restriction. A potential benefit of identifying predictive factors is that it could lead to pregnancy-related health behavior interventions that target and support the populations that can gain the most from those interventions. It was also hoped that these data could
strengthen the link between the importance of good health and balanced nutrition at any time in a woman’s life.

**Methods**

**Sample and Setting**

I used secondary data from the existing Oregon Pregnancy Risk Assessment Monitoring System (PRAMS). As previously mentioned, Oregon PRAMS collects data on maternal experiences before, during, and after pregnancy, including data on the birth outcomes of mothers who were dieting during the twelve months leading up to their pregnancy. I used Oregon PRAMS data from the 2009-2011 survey, with special focus on Question 1a: “At any time during the 12 months before you got pregnant with your new baby, did you do any of the following things? I was dieting (changing my eating habits) to lose weight. Y/N” (See Appendix 1). All PRAMS participants who provided data on this question were eligible for analysis.

**Data Analysis**

Using IBM SPSS Statistics 20 statistical software, we described the prevalence of preconception dietary restriction among Oregon PRAMS participants and determined the association between the preconception dietary restriction variable and a range of birth outcomes. We also identified predictors of preconception dietary restriction.

Prior to analyses, we conducted preliminary data cleaning and management activities. This included identifying and deleting out-of-range values and recoding variables to facilitate data analyses. We only deleted one participant because she listed her first prenatal care visit during week 52 of pregnancy. For the maternal hospital length
of stay variable, 95 participants were recoded when we combined the women who did not stay overnight with the women who did not go to the hospital at all. Using the race definitions from the United States Census Bureau, we also recoded the maternal race variable. We combined the “Other Asian” category with Chinese, Japanese, and Filipino categories to create a general Asian race classification, and we also merged Alaskan Natives and American Indians into one category. For the variable regarding insurance coverage for delivery, we chose to discard the “Other Specified” and “No Insurance” categories so as to just compare the experiences of women who had Oregon Health Plan or Indian Health Services to those who had all other types of health insurance. This removed fewer than 3% of participants.

We calculated descriptive statistics, which consisted of proportions for the categorical characteristics and means with associated standard deviations for the continuous variables.

The primary analyses contrasted women who reported dieting during the twelve months prior to conception, and women who did not, on birth outcomes and other health behaviors related to birth outcomes. To assess the unadjusted association of preconception dietary restriction to maternal and neonatal birth outcomes, we prepared a series of contingency tables crossing preconception dietary restriction with categorical outcomes. Associations between preconception dietary restriction and categorical variables were quantified with odds ratios and associated Pearson Chi-Square statistics. For continuous variables, women reporting preconception dietary restriction were compared to other women using independent samples t-tests. We used Levene’s test for equality of variances to determine which t-statistic and significance level to report.
To account for potential confounding, we also conducted a series of logistic models predicting outcomes from preconception dietary restriction status, adjusting for potential confounders: age, race/ethnicity, income, insurance status, prenatal care, and Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) status. Confounding was determined by the association of any given potential confounder to both the predictor and outcome in question, and on its effect on the model estimates.

To evaluate missing data, we contrasted women with and without data on key variables to ascertain the potential for bias. Similar to the process used for the primary analyses, the relationship between missing data and categorical outcomes was evaluated using contingency tables, and the relationship of missing data to continuous variables was assessed using independent samples t-tests.

Results

Descriptive Statistics

Only PRAMS participants who provided data on preconception dietary activity were eligible for the study, so 907 participants (13.0% of the total sample) were deleted before beginning analyses. There were 6050 women included in this study, and of these women, 1365 (26.5%) reported that they dieted to lose weight during the twelve months before conception. Maternal age, race, and preferred language were significant predictors of preconception dieting behaviors (See Table 1). Women ages 25 to 34 were more likely to have exhibited dietary restriction during preconception than women of other ages. English-speaking participants and women who identified as white, Hawaiian, Alaskan native/American Indian, or mixed race were also more likely to report dieting during the
twelve months before conception. Note however that the number of Hawaiian participants is extremely low, so we are not able to draw strong conclusions about this particular demographic.

The other important variables to note in Table 1 are income twelve months before birth, insurance status at delivery, maternal years of education, and preconception multivitamin usage. The percentage of dieting participants increased with income levels above $25,000-$34,999. Higher rates of dietary restriction were found in women who had a different insurance provider than Oregon Health Plan or Indian Health Services pay for their delivery and women with at least some years of college education. Finally, study participants who did not take multivitamins during preconception reported lower rates of preconception dieting than women who did. All other dietary predictor variables in the study did not show significant differences between women who did and did not diet.

**Primary Analyses**

Pregnancy and birth outcomes related to exercise, delivery method, birth weight, and maternal weight revealed significant patterns in relation to self-reported attempts at dietary restriction (See Table 2). Pre-pregnancy diet and exercise patterns were highly associated. Of the women who exercised three or more days per week before becoming pregnant, the number that were also dieting to lose weight was almost double the number of women who were not dieting. High blood pressure during pregnancy was also associated with preconception dietary restriction. Assisted deliveries by C-section or repeated C-section and babies that were large for their gestational age (LGA) were much more common for women who dieted during their preconception period. Consequently, unassisted vaginal deliveries and babies that were small for their gestational age were
more prevalent for women who did not restrict their dietary intake before pregnancy. In addition, maternal pre-pregnancy body mass index and maternal weight gain during pregnancy were both significantly higher for dieting women than non-dieting women.

**Missing Data Analysis**

Our sensitivity analysis exploring the extent to which missingness might have biased our results revealed only a few differences between women who did and did not answer the PRAMS survey question on preconception dieting. 23.7% of mothers whose infant was in the Neonatal Intensive Care Unit (NICU) at birth did not answer the question, compared to the 8.6% of mothers who did not have an infant in the NICU and also did not answer the question. Women who had a blood transfusion during childbirth were significantly more likely to have missing data on diet activity. Finally, women who did not answer the questions about pre-pregnancy exercise, checks or treatment for high blood pressure, and checks or treatment for diabetes were also significantly more likely to not have answered the question about pre-pregnancy diet activity.

**Discussion**

**Descriptive Statistics**

The women who reported restricting their diets during preconception to lose weight were predominantly young adults age 25-34 who identified as white, had relatively higher income, and had more education than a high school diploma. Young adults are more likely to succumb to societal pressures to lose weight, as are white women (Atlas et al., 2002). Women who are highly educated, employed, and have a stable income have a stronger sense of control over their surroundings (Lachman &
Weaver, 1998; Schieman, 2001). It is possible that they feel enough stability in the other areas of their lives to be able to devote more attention to their physical condition and appearance (Hernandez & Blazer, 2006).

**Primary Analyses**

Looking at the maternal body mass index (BMI) of study participants, one can see that women who were dieting before pregnancy had an average BMI that would be considered overweight and borderline obese, while the average BMI of women who were not dieting could be classified as just barely overweight. It is probable that this difference in initial weight of those who dieted and those who did not is a large factor in the significant associations found between preconception dieting behaviors and numerous pregnancy and birth outcomes.

Participants who restricted their pre-pregnancy dietary intake to lose weight had higher maternal weight gain during pregnancy and were more likely to give birth to babies who were LGA. A large cohort study of over 58,000 Norwegian women showed that a baby’s birth weight was strongly positively correlated with maternal pre-pregnancy BMI and weight gain during pregnancy (Stamnes Koepp et al., 2012). The heavier a woman was before becoming pregnant and the more weight she gained during pregnancy, the more likely she was to have a child that was LGA. Results from a much smaller study showed that preconception dietary restriction was associated with higher weight gain during pregnancy (Mumford et al., 2008). Though causation cannot be confirmed without an experimental study, there seems to be a very clear relationship between maternal preconception weight, pregnancy weight gain, and baby birth weight.
It is widely recognized that assisted deliveries, and C-sections in particular, are related to excessive weight or obesity (Graham et al., 2014). We found that women who dieted had a lower proportion of spontaneous vaginal deliveries and experienced a higher rate of C-sections than the other women. There is a strong possibility that this is due to the fact that Oregon PRAMS participants who restricted their food intake before pregnancy had a higher average BMI. This evidence points to encouraging women to be at a healthy weight before conception and to gain an appropriate amount of weight during pregnancy in order to decrease their likelihood of experiencing the negative effects of excessive maternal weight before and during pregnancy. If overweight women were more likely to restrict their food intake to lose weight, then preconception dietary behaviors may serve as an indicator of these pregnancy and birth outcomes.

Preconception dietary restriction and regular exercise showed a strong positive correlation. Women who were dieting to lose weight also reported regular physical activity, potentially because they were trying multiple approaches to weight loss. Though it points to health conscious attitudes in these women, there is no way to verify if the information reported was accurate or if the participants felt pressured to overestimate their physical activity levels in order to provide a satisfactory answer.

**Missing Data Analysis**

Women who had an infant in the NICU or had a blood transfusion were more likely to be missing data on their preconception dietary activity. This is likely because these women had more critical situations on which to concentrate than following up with PRAMS and completing their surveys. The group of women who did not answer the questions about pre-pregnancy diet, exercise, and checks or treatment for high blood
pressure or diabetes just skipped all of the questions related to pre-pregnancy health. It is not likely that there is any significance to their decision to ignore the preconception dieting question.

**Limitations**

The main limitation of this study was that it was centered on a single question about dieting that did not provide any details about the dieting behavior. Changing one’s diet to lose weight can be done in many different ways and this study is limited by the lack of supporting information such as how long the participants were dieting, how drastically they changed their eating habits, or whether their new dietary behaviors were healthier than their old behaviors. The aim of PRAMS is to capture information about a wide variety of topics, which is why it only contains one question about diet. A more extensive survey with follow-up questions would be needed to make stronger conclusions about the relationship between preconception dietary behaviors and pregnancy outcomes.

Another limitation of this study was that Oregon PRAMS oversamples women from minority groups to get reliable estimates for these sub-populations (CDC, 2013). While this normally would be an asset, we did not structure our methods to use the weighting variable so this sample of 6050 women may not be representative of the population as a whole and these results cannot be generalized without additional analyses. In addition, much of the information provided by the PRAMS survey is self-reported, including the main question of interest. Response bias must be taken into consideration when looking at the implications of the data. Finally, the data presented in this study can only demonstrate correlation between variables and not causation. There
will need to be more research done on the topic of preconception health and subsequent pregnancy outcomes.

In conclusion, this study further illuminated the relationship between maternal weight and birth outcomes. PRAMS participants who dieted to lose weight before becoming pregnant had higher pre-pregnancy BMIs and gained more weight on average during their pregnancies than the women who did not diet. These women also were more likely to have C-section deliveries and babies who were LGA, which are two birth outcomes positively associated with maternal weight. Overall, it is important for women to maintain a healthy weight before and during pregnancy to reduce the risk of negative effects of elevated maternal weight and weight gain.
References


Table 1. Variable predictors of preconception dietary restriction in Oregon PRAMS participants.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total (Proportion)</th>
<th>Diet – Y (%)</th>
<th>Diet – N (%)</th>
<th>$\chi^2$</th>
<th>Significance (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 17</td>
<td>147 (2.9)</td>
<td>1.4</td>
<td>3.4</td>
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<tr>
<td>18-19</td>
<td>300 (5.8)</td>
<td>5.3</td>
<td>6.0</td>
<td></td>
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<tr>
<td>20-24</td>
<td>1220 (23.7)</td>
<td>22.1</td>
<td>24.3</td>
<td></td>
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<tr>
<td>25-29</td>
<td>1473 (28.6)</td>
<td>30.1</td>
<td>28.1</td>
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<td>30-34</td>
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<td>27.3</td>
<td>23.0</td>
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<tr>
<td>35-39</td>
<td>625 (12.2)</td>
<td>11.4</td>
<td>12.4</td>
<td></td>
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<tr>
<td>40+</td>
<td>137 (2.7)</td>
<td>2.3</td>
<td>2.8</td>
<td></td>
<td></td>
</tr>
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<td>Maternal race</td>
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<td></td>
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<td></td>
<td></td>
</tr>
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<td>White</td>
<td>2096 (41.0)</td>
<td>28.1</td>
<td>71.9</td>
<td></td>
<td></td>
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<tr>
<td>Asian</td>
<td>788 (15.4)</td>
<td>21.1</td>
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<td>Hawaiian</td>
<td>7 (0.1)</td>
<td>28.6</td>
<td>71.4</td>
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<tr>
<td>Black</td>
<td>546 (10.7)</td>
<td>22.7</td>
<td>77.3</td>
<td></td>
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<tr>
<td>Ak. Native/Am. Indian</td>
<td>434 (8.5)</td>
<td>28.1</td>
<td>71.9</td>
<td></td>
<td></td>
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<tr>
<td>Other</td>
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<td>24.1</td>
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<tr>
<td>Mixed</td>
<td>927 (18.1)</td>
<td>29.4</td>
<td>70.6</td>
<td></td>
<td></td>
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<tr>
<td>Mother is Hispanic</td>
<td>1354 (26.4)</td>
<td>25.6</td>
<td>26.6</td>
<td>0.485</td>
<td>.486</td>
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<tr>
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<td></td>
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<tr>
<td>English</td>
<td>4425 (86.0)</td>
<td>88.4</td>
<td>11.6</td>
<td></td>
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<tr>
<td>Spanish</td>
<td>718 (14.0)</td>
<td>11.6</td>
<td>88.4</td>
<td></td>
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<tr>
<td>Marital status: married</td>
<td>2092 (40.7)</td>
<td>37.8</td>
<td>41.8</td>
<td>6.642</td>
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</tr>
<tr>
<td>Income, 12 mo. before birth</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>&lt; $10,000</td>
<td>1231 (25.6)</td>
<td>22.6</td>
<td>26.8</td>
<td></td>
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<tr>
<td>$10,000-14,999</td>
<td>529 (11.0)</td>
<td>9.3</td>
<td>11.7</td>
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<tr>
<td>$15,000-19,999</td>
<td>420 (8.7)</td>
<td>9.8</td>
<td>8.4</td>
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<tr>
<td>$20,000-24,999</td>
<td>429 (8.9)</td>
<td>8.6</td>
<td>9.1</td>
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<td>$25,000-34,999</td>
<td>479 (10.0)</td>
<td>10.1</td>
<td>9.9</td>
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<td>$35,000-49,000</td>
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<td>11.0</td>
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<td>$50,000-69,999</td>
<td>430 (9.0)</td>
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<td>&gt; $70,000</td>
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<td>18.5</td>
<td>16.7</td>
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<tr>
<td>Insurance that paid for delivery</td>
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<td></td>
<td></td>
<td>9.267</td>
<td>.002</td>
</tr>
<tr>
<td>Oregon Health Plan/Indian Health</td>
<td>2671 (53.7)</td>
<td>50.1</td>
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<tr>
<td>Services</td>
<td></td>
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<td>Other insurance</td>
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<td>49.9</td>
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<td>Maternal years of education</td>
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<tr>
<td>0-8 years</td>
<td>345 (6.7)</td>
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<td>9-11 years</td>
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<td>12 years</td>
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<td></td>
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<td>≥ 16 years</td>
<td>23.5</td>
<td>23.8</td>
</tr>
<tr>
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<td>-------------</td>
<td>-----------</td>
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<tr>
<td>Geographic location</td>
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<td>Urban</td>
<td>848 (31.8)</td>
<td>30.4</td>
<td>32.4</td>
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<td>69.6</td>
<td>67.6</td>
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<tr>
<td>Diabetes before pregnancy</td>
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<td>2.2</td>
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<td>.083</td>
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<tr>
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<td>.063</td>
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<td>2102 (40.9)</td>
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<td>41.9</td>
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<tr>
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<td>1637 (31.8)</td>
<td>32.1</td>
<td>31.8</td>
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<td>2</td>
<td>799 (15.5)</td>
<td>17.6</td>
<td>14.8</td>
<td></td>
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<tr>
<td>3</td>
<td>550 (10.7)</td>
<td>11.2</td>
<td>10.5</td>
<td></td>
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<td>4</td>
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<td>Kessner Index</td>
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<td>1 (Adequate)</td>
<td>3634 (70.7)</td>
<td>72.7</td>
<td>69.9</td>
<td></td>
<td></td>
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<td>2 (Intermediate)</td>
<td>1024 (19.9)</td>
<td>17.8</td>
<td>20.7</td>
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<tr>
<td>3 (Inadequate)</td>
<td>218 (4.2)</td>
<td>3.7</td>
<td>4.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 (Unknown)</td>
<td>267 (5.2)</td>
<td>5.8</td>
<td>5.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mothers with WIC support during pregnancy</td>
<td>2241 (44.5)</td>
<td>46.5</td>
<td>43.8</td>
<td>2.974</td>
<td>.085</td>
</tr>
<tr>
<td>Multivitamin (# of times per week)</td>
<td></td>
<td>19.744</td>
<td>&lt; .001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Didn’t take vitamin</td>
<td>2697 (52.9)</td>
<td>49.3</td>
<td>54.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3 days/week</td>
<td>499 (9.8)</td>
<td>11.0</td>
<td>9.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-6 days/week</td>
<td>348 (6.8)</td>
<td>9.0</td>
<td>6.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 days/week</td>
<td>1559 (30.6)</td>
<td>30.7</td>
<td>30.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2. Pregnancy and birth outcomes of Oregon PRAMS participants.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total (Proportion)</th>
<th>Diet – Y (%)</th>
<th>Diet – N (%)</th>
<th>( \chi^2 )</th>
<th>Significance (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-pregnancy checked or treated for diabetes</td>
<td>543 (10.6)</td>
<td>11.6</td>
<td>10.2</td>
<td>1.945</td>
<td>0.163</td>
</tr>
<tr>
<td>Pre-pregnancy exercise 3+ days/week</td>
<td>2370 (46.5)</td>
<td>68.8</td>
<td>38.5</td>
<td>364.714</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Pre-pregnancy checked or treated for high blood pressure</td>
<td>499 (9.7)</td>
<td>10.9</td>
<td>9.3</td>
<td>2.940</td>
<td>0.086</td>
</tr>
<tr>
<td>Mother transferred</td>
<td>27 (0.5)</td>
<td>0.4</td>
<td>0.6</td>
<td>0.260</td>
<td>0.610</td>
</tr>
<tr>
<td>Premature ruptured membrane</td>
<td>286 (5.6)</td>
<td>4.9</td>
<td>5.8</td>
<td>1.507</td>
<td>0.220</td>
</tr>
<tr>
<td>Vaginal bleeding</td>
<td>913 (18.1)</td>
<td>20.2</td>
<td>17.4</td>
<td>5.301</td>
<td>0.021</td>
</tr>
<tr>
<td>Cervix closed</td>
<td>58 (1.2)</td>
<td>1.1</td>
<td>1.2</td>
<td>0.014</td>
<td>0.907</td>
</tr>
<tr>
<td>Kidney or bladder infection</td>
<td>839 (16.7)</td>
<td>18.0</td>
<td>16.2</td>
<td>2.257</td>
<td>0.133</td>
</tr>
<tr>
<td>Preterm labor</td>
<td>1022 (20.3)</td>
<td>22.1</td>
<td>19.6</td>
<td>3.700</td>
<td>0.054</td>
</tr>
<tr>
<td>Nausea</td>
<td>1429 (28.4)</td>
<td>29.7</td>
<td>28.0</td>
<td>1.473</td>
<td>0.225</td>
</tr>
<tr>
<td>Placenta Previa</td>
<td>195 (3.9)</td>
<td>4.2</td>
<td>3.8</td>
<td>0.486</td>
<td>0.486</td>
</tr>
<tr>
<td>Blood transfusion</td>
<td>63 (1.3)</td>
<td>1.2</td>
<td>1.3</td>
<td>0.038</td>
<td>0.846</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>592 (11.8)</td>
<td>16.3</td>
<td>10.1</td>
<td>35.444</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Gestational diabetes during this pregnancy</td>
<td>637 (12.6)</td>
<td>13.6</td>
<td>12.3</td>
<td>1.405</td>
<td>0.236</td>
</tr>
<tr>
<td>Vaginal delivery</td>
<td>3527 (68.6)</td>
<td>63.3</td>
<td>70.5</td>
<td>24.058</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Vaginal delivery after C-section</td>
<td>105 (2.0)</td>
<td>2.2</td>
<td>2.0</td>
<td>0.227</td>
<td>0.634</td>
</tr>
<tr>
<td>Assisted delivery: C-section</td>
<td>963 (18.7)</td>
<td>21.3</td>
<td>17.8</td>
<td>8.217</td>
<td>0.004</td>
</tr>
<tr>
<td>Assisted delivery: Repeated C-section</td>
<td>548 (10.7)</td>
<td>13.2</td>
<td>9.7</td>
<td>12.509</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Assisted delivery: Forceps</td>
<td>35 (0.7)</td>
<td>0.4</td>
<td>0.8</td>
<td>1.596</td>
<td>0.206</td>
</tr>
<tr>
<td>Assisted delivery: Vacuum</td>
<td>155 (3.0)</td>
<td>2.0</td>
<td>3.4</td>
<td>6.820</td>
<td>0.009</td>
</tr>
<tr>
<td>Infant alive now</td>
<td>4930 (99.5)</td>
<td>99.5</td>
<td>99.4</td>
<td>0.009</td>
<td>0.923</td>
</tr>
<tr>
<td>Clinical estimate of gestational age (weeks)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \leq 27 )</td>
<td>28 (0.5)</td>
<td>0.5</td>
<td>0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28-33</td>
<td>80 (1.6)</td>
<td>1.4</td>
<td>1.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34-36</td>
<td>264 (5.1)</td>
<td>6.7</td>
<td>4.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37-42</td>
<td>4768 (92.7)</td>
<td>91.4</td>
<td>93.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43+</td>
<td>2 (0.0)</td>
<td>0.0</td>
<td>0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status</td>
<td>Sample Mean ± SD Diet – Y (x ± SD)</td>
<td>Diet – N (x ± SD)</td>
<td>t-statistic</td>
<td>Significance (p-value)</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-----------------------------------</td>
<td>------------------</td>
<td>-------------</td>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td>Maternal body mass index</td>
<td>26.63 ± 6.68</td>
<td>28.97 ± 6.80</td>
<td>-14.909</td>
<td>&lt; .001</td>
<td></td>
</tr>
<tr>
<td>Maternal weight gain (lbs.)</td>
<td>30.83 ± 14.85</td>
<td>32.18 ± 15.98</td>
<td>-3.698</td>
<td>&lt; .001</td>
<td></td>
</tr>
<tr>
<td>Week of first prenatal care visit</td>
<td>9.35 ± 4.33</td>
<td>9.29 ± 4.19</td>
<td>.700</td>
<td>.484</td>
<td></td>
</tr>
<tr>
<td>Maternal length of hospital stay</td>
<td>3.37 ± 8.70</td>
<td>3.68 ± 11.29</td>
<td>-1.504</td>
<td>.133</td>
<td></td>
</tr>
<tr>
<td>Baby length of hospital stay</td>
<td>2.45 ± 0.90</td>
<td>2.45 ± 0.86</td>
<td>.357</td>
<td>.721</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 1: Oregon PRAMS 2009-11 Survey

Please mark your answers. Follow the directions included with the questions. If no directions are presented, check the box next to your answer or fill in the blanks. Because not all questions will apply to everyone, you may be asked to skip certain questions.

BEFORE PREGNANCY

First, we would like to ask a few questions about you and the time before you got pregnant with your new baby.

1. At any time during the 12 months before you got pregnant with your new baby, did you do any of the following things? For each item, circle Y (Yes) if you did it or circle N (No) if you did not.

   a. I was dieting (changing my eating habits) to lose weight . . . . . . N Y
   b. I was exercising 3 or more days of the week . . . . . . . . . . N Y
   c. I was regularly taking prescription medicines other than birth control . . . N Y
   d. I visited a health care worker to be checked or treated for diabetes . . N Y
   e. I visited a health care worker to be checked or treated for high blood pressure . . . . . . . . N Y
   f. I visited a health care worker to be checked or treated for depression or anxiety . . . . . . . . . . N Y
   g. I talked to a health care worker about my family medical history . . . N Y
   h. I had my teeth cleaned by a dentist or dental hygienist . . . . . . . . . . . N Y

2. During the month before you got pregnant with your new baby, were you covered by any of these health insurance plans?

   Check all that apply

   - Health insurance from your job or the job of your husband, partner, or parents
   - Health insurance that you or someone else paid for (not from a job)
   - Oregon Health Plan or Medicaid
   - TRICARE or other military health care
   - Indian Health Service
   - Other source(s) Please tell us:

   ❑ I did not have any health insurance before I got pregnant

3. During the month before you got pregnant with your new baby, how many times a week did you take a multivitamin, a prenatal vitamin, or a folic acid vitamin?

   ❑ I didn’t take a multivitamin, prenatal vitamin, or folic acid vitamin at all
   ❑ 1 to 3 times a week
   ❑ 4 to 6 times a week
   ❑ Every day of the week

4. Just before you got pregnant with your new baby, how much did you weigh?

   Pounds OR Kilos

5. How tall are you without shoes?

   Feet Inches

   OR Meters
6. What is your date of birth?

Month / Day / Year

7. Before you got pregnant with your new baby, were you ever told by a doctor, nurse, or other health care worker that you had Type 1 or Type 2 diabetes? This is not the same as gestational diabetes or diabetes that starts during pregnancy.

☐ No
☐ Yes

8. Before you got pregnant with your new baby, did you ever have any other babies who were born alive?

☐ No ☐ Yes

Go to Question 11

9. Did the baby born just before your new one weigh more than 5 pounds, 8 ounces (2.5 kilos) at birth?

☐ No ☐ Yes

10. Was the baby just before your new one born more than 3 weeks before his or her due date?

☐ No ☐ Yes

11. Thinking back to just before you got pregnant with your new baby, how did you feel about becoming pregnant?

☐ I wanted to be pregnant sooner
☐ I wanted to be pregnant later
☐ I wanted to be pregnant then
☐ I didn’t want to be pregnant then or at any time in the future

Check one answer

If you wanted to be pregnant later, answer Question 12. Otherwise, go to Question 13.

12. How much later did you want to become pregnant?

☐ Less than 1 year
☐ 1 year to less than 2 years
☐ 2 years to less than 3 years
☐ 3 years to less than 4 years
☐ 4 years or more

Check one answer

13. When you got pregnant with your new baby, were you trying to get pregnant?

☐ No ☐ Yes

Go to Page 4, Question 17

Go to Question 14
14. When you got pregnant with your new baby, were you or your husband or partner doing anything to keep from getting pregnant? (Some things people do to keep from getting pregnant include not having sex at certain times [natural family planning or rhythm] or withdrawal, and using birth control methods such as the pill, condoms, vaginal ring, IUD, having their tubes tied, or their partner having a vasectomy.)

- No
- Yes

Go to Question 16

15. What were your reasons or your husband’s or partner’s reasons for not doing anything to keep from getting pregnant?

Check all that apply

- I didn’t mind if I got pregnant
- I thought I could not get pregnant at that time
- I had side effects from the birth control method I was using
- I had problems getting birth control when I needed it
- I thought my husband or partner or I was sterile (could not get pregnant at all)
- My husband or partner didn’t want to use anything
- Other

Please tell us:

If you or your husband or partner was not doing anything to keep from getting pregnant, go to Page 4, Question 17.
DURING PREGNANCY

The next questions are about the prenatal care you received during your most recent pregnancy. Prenatal care includes visits to a doctor, nurse, or other health care worker before your baby was born to get checkups and advice about pregnancy. (It may help to look at the calendar when you answer these questions.)

17. How many weeks or months pregnant were you when you were sure you were pregnant? (For example, you had a pregnancy test or a doctor or nurse said you were pregnant.)

☐ Weeks OR ☐ Months
☐ I don’t remember

18. How many weeks or months pregnant were you when you had your first visit for prenatal care? Do not count a visit that was only for a pregnancy test or only for WIC (the Special Supplemental Nutrition Program for Women, Infants, and Children).

☐ Weeks OR ☐ Months
☐ I didn’t go for prenatal care → Go to Question 20

19. Did you get prenatal care as early in your pregnancy as you wanted?

☐ No
☐ Yes → Go to Question 21

Go to Question 20

20. Did any of these things keep you from getting prenatal care at all or as early as you wanted? For each item, circle T (True) if it was a reason that you didn’t get prenatal care when you wanted or circle F (False) if it was not a reason for you or if something does not apply to you.

<table>
<thead>
<tr>
<th></th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I couldn’t get an appointment when I wanted one</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>b. I didn’t have enough money or insurance to pay for my visits</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>c. I had no transportation to get to the clinic or doctor’s office</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>d. The doctor or my health plan would not start care as early as I wanted</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>e. I had too many other things going on</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>f. I couldn’t take time off from work or school</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>g. I didn’t have my Oregon Health Plan or Medicaid card</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>h. I had no one to take care of my children</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>i. I didn’t know that I was pregnant</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>j. I didn’t want anyone else to know I was pregnant</td>
<td>T</td>
<td>F</td>
</tr>
<tr>
<td>k. I didn’t want prenatal care</td>
<td>T</td>
<td>F</td>
</tr>
</tbody>
</table>

If you did not go for prenatal care, go to Page 6, Question 27.
21. Where did you go most of the time for your prenatal care visits? Do not include visits for WIC.

[Check one answer]

- Hospital clinic
- Health department clinic
- Private doctor’s office or HMO clinic
- Midwife’s Office
- At home
- Other ________ Please tell us: __________________________

22. Did any of these health insurance plans help you pay for your prenatal care?

[Check all that apply]

- Health insurance from your job or the job of your husband, partner, or parents
- Health insurance that you or someone else paid for (not from a job)
- Oregon Health Plan or Medicaid
- TRICARE or other military health care
- Indian Health Service
- Other source(s) ________ Please tell us: __________________________

- I did not have health insurance to help pay for my prenatal care

23. During any of your prenatal care visits, did a doctor, nurse, or other health care worker talk with you about any of the things listed below? Please count only discussions, not reading materials or videos. For each item, circle Y (Yes) if someone talked with you about it or circle N (No) if no one talked with you about it.

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How smoking during pregnancy could affect my baby</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>b. Breastfeeding my baby</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>c. How drinking alcohol during pregnancy could affect my baby</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>d. Using a seat belt during my pregnancy</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>e. Medicines that are safe to take during my pregnancy</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>f. How using illegal drugs could affect my baby</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>g. Doing tests to screen for birth defects or diseases that run in my family</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>h. The signs and symptoms of preterm labor (labor more than 3 weeks before the baby is due)</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>i. What to do if my labor starts early</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>j. Getting tested for HIV (the virus that causes AIDS)</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>k. What to do if I feel depressed during my pregnancy or after my baby is born</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>l. Physical abuse to women by their husbands or partners</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>
24. **During any of your prenatal care visits,** did a doctor, nurse, or other health care worker ask if you were smoking cigarettes?  
- [ ] No  
- [ ] Yes

25. **During any of your prenatal care visits,** did a doctor, nurse, or other health care worker ask if you were drinking alcoholic beverages (beer, wine, wine cooler, or liquor)?  
- [ ] No  
- [ ] Yes

26. **During any of your prenatal care visits,** did a doctor, nurse, or other health care worker talk with you about how eating fish containing high levels of mercury could affect your baby?  
- [ ] No  
- [ ] Yes

27. **At any time during your most recent pregnancy or delivery,** did you have a test for HIV (the virus that causes AIDS)?  
- [ ] No  
- [ ] Yes  
- [ ] I don’t know

28. **At any time during your most recent pregnancy,** did a doctor, nurse, or other health care worker offer you a flu vaccination or tell you to get one?  
- [ ] No  
- [ ] Yes

29. **During your most recent pregnancy,** were you on WIC (the Special Supplemental Nutrition Program for Women, Infants, and Children)?  
- [ ] No  
- [ ] Yes

30. **During your most recent pregnancy,** were you told by a doctor, nurse, or other health care worker that you had gestational diabetes (diabetes that started during this pregnancy)?  
- [ ] No  
- [ ] Yes

31. **Did you have any of the following problems during your most recent pregnancy?** For each item, circle Y (Yes) if you had the problem or circle N (No) if you did not.  
- a. Vaginal bleeding  
- b. Kidney or bladder (urinary tract) infection  
- c. Severe nausea, vomiting, or dehydration  
- d. Cervix had to be sewn shut (cerclage for incompetent cervix)  
- e. High blood pressure, hypertension (including pregnancy-induced hypertension [PIH]), preeclampsia, or toxemia  
- f. Problems with the placenta (such as abruptio placentae or placenta previa)  
- g. Labor pains more than 3 weeks before my baby was due (preterm or early labor)  
- h. Water broke more than 3 weeks before my baby was due (premature rupture of membranes [PROM])  
- i. I had to have a blood transfusion  
- j. I was hurt in a car accident
The next questions are about smoking cigarettes around the time of pregnancy (before, during, and after).

32. Have you smoked any cigarettes in the past 2 years?
   - No
   - Yes
   
33. In the 3 months before you got pregnant, how many cigarettes did you smoke on an average day? (A pack has 20 cigarettes.)
   - 41 cigarettes or more
   - 21 to 40 cigarettes
   - 11 to 20 cigarettes
   - 6 to 10 cigarettes
   - 1 to 5 cigarettes
   - Less than 1 cigarette
   - I didn’t smoke then

34. In the last 3 months of your pregnancy, how many cigarettes did you smoke on an average day? (A pack has 20 cigarettes.)
   - 41 cigarettes or more
   - 21 to 40 cigarettes
   - 11 to 20 cigarettes
   - 6 to 10 cigarettes
   - 1 to 5 cigarettes
   - Less than 1 cigarette
   - I didn’t smoke then

35. How many cigarettes do you smoke on an average day now? (A pack has 20 cigarettes.)
   - 41 cigarettes or more
   - 21 to 40 cigarettes
   - 11 to 20 cigarettes
   - 6 to 10 cigarettes
   - 1 to 5 cigarettes
   - Less than 1 cigarette
   - I don’t smoke now

36. Which of the following statements best describes the rules about smoking inside your home now?
   - No one is allowed to smoke anywhere inside my home
   - Smoking is allowed in some rooms or at some times
   - Smoking is permitted anywhere inside my home

The next questions are about drinking alcohol around the time of pregnancy (before, during, and after).

37. Have you had any alcoholic drinks in the past 2 years? A drink is 1 glass of wine, wine cooler, can or bottle of beer, shot of liquor, or mixed drink.
   - No
   - Yes

38a. During the 3 months before you got pregnant, how many alcoholic drinks did you have in an average week?
   - 14 drinks or more a week
   - 7 to 13 drinks a week
   - 4 to 6 drinks a week
   - 1 to 3 drinks a week
   - Less than 1 drink a week
   - I didn’t drink then

38b. During the 3 months before you got pregnant, how many times did you drink 4 alcoholic drinks or more in one sitting? A sitting is a two hour time span.
   - 6 or more times
   - 4 to 5 times
   - 2 to 3 times
   - 1 time
   - I didn’t have 4 drinks or more in 1 sitting
39a. During the last 3 months of your pregnancy, how many alcoholic drinks did you have in an average week?

- 14 drinks or more a week
- 7 to 13 drinks a week
- 4 to 6 drinks a week
- 1 to 3 drinks a week
- Less than 1 drink a week
- I didn’t drink

[Go to Question 40]

39b. During the last 3 months of your pregnancy, how many times did you drink 4 alcoholic drinks or more in one sitting? A sitting is a two hour time span.

- 6 or more times
- 4 to 5 times
- 2 to 3 times
- 1 time
- I didn’t have 4 drinks or more in 1 sitting

Pregnancy can be a difficult time for some women. The next questions are about things that may have happened before and during your most recent pregnancy.

40. This question is about things that may have happened during the 12 months before your new baby was born. For each item, circle Y (Yes) if it happened to you or circle N (No) if it did not. (It may help to look at the calendar when you answer these questions.)

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. A close family member was very sick and had to go into the hospital</td>
<td>N</td>
</tr>
<tr>
<td>b. I got separated or divorced from my husband or partner</td>
<td>N</td>
</tr>
<tr>
<td>c. I moved to a new address</td>
<td>N</td>
</tr>
<tr>
<td>d. I was homeless</td>
<td>N</td>
</tr>
<tr>
<td>e. My husband or partner lost his job</td>
<td>N</td>
</tr>
<tr>
<td>f. I lost my job even though I wanted to go on working</td>
<td>N</td>
</tr>
<tr>
<td>g. I argued with my husband or partner more than usual</td>
<td>N</td>
</tr>
<tr>
<td>h. My husband or partner said he didn’t want me to be pregnant</td>
<td>N</td>
</tr>
<tr>
<td>i. I had a lot of bills I couldn’t pay</td>
<td>N</td>
</tr>
<tr>
<td>j. I was in a physical fight</td>
<td>N</td>
</tr>
<tr>
<td>k. My husband or partner or I went to jail</td>
<td>N</td>
</tr>
<tr>
<td>l. Someone very close to me had a problem with drinking or drugs</td>
<td>N</td>
</tr>
<tr>
<td>m. Someone very close to me died</td>
<td>N</td>
</tr>
</tbody>
</table>

41. During the 12 months before your new baby was born, did you ever eat less than you felt you should because there wasn’t enough money to buy food?

- No
- Yes
42. During the 12 months before you got pregnant with your new baby, did your husband or partner push, hit, slap, kick, choke, or physically hurt you in any other way?

- No
- Yes

43. During your most recent pregnancy, did your husband or partner push, hit, slap, kick, choke, or physically hurt you in any other way?

- No
- Yes

The next questions are about your labor and delivery. (It may help to look at the calendar when you answer these questions.)

44. When was your baby due?

<table>
<thead>
<tr>
<th>Month</th>
<th>Day</th>
<th>Year</th>
</tr>
</thead>
</table>

45. When did you go into the hospital to have your baby?

<table>
<thead>
<tr>
<th>Month</th>
<th>Day</th>
<th>Year</th>
</tr>
</thead>
</table>

- I didn’t have my baby in a hospital

46. When was your baby born?

<table>
<thead>
<tr>
<th>Month</th>
<th>Day</th>
<th>Year</th>
</tr>
</thead>
</table>

47. When were you discharged from the hospital after your baby was born?

<table>
<thead>
<tr>
<th>Month</th>
<th>Day</th>
<th>Year</th>
</tr>
</thead>
</table>

- I didn’t have my baby in a hospital

48. Did any of these health insurance plans help you pay for the delivery of your new baby? [Check all that apply]

- Health insurance from your job or the job of your husband, partner, or parents
- Health insurance that you or someone else paid for (not from a job)
- Oregon Health Plan or Medicaid
- TRICARE or other military health care
- Indian Health Service
- Other source(s) → Please tell us:

- I did not have health insurance to help pay for my delivery

**AFTER PREGNANCY**

The next questions are about the time since your new baby was born.

49. After your baby was born, was he or she put in an intensive care unit?

- No
- Yes
- I don’t know
50. After your baby was born, how long did he or she stay in the hospital?

- Less than 24 hours (less than 1 day)
- 24 to 48 hours (1 to 2 days)
- 3 to 5 days
- 6 to 14 days
- More than 14 days
- My baby was not born in a hospital
- My baby is still in the hospital ➔ Go to Question 53

51. Is your baby alive now?

- No ➔ Go to Question 61
- Yes ➔ Go to Question 61

52. Is your baby living with you now?

- No ➔ Go to Question 61
- Yes ➔ Go to Question 61

53. Did you ever breastfeed or pump breast milk to feed your new baby after delivery, even for a short period of time?

- No ➔ Go to Question 57b
- Yes ➔ Go to Question 57b

54. Are you currently breastfeeding or feeding pumped milk to your new baby?

- No ➔ Go to Question 55
- Yes ➔ Go to Question 55

55. How many weeks or months did you breastfeed or pump milk to feed your baby?

- Weeks OR Months
- Less than 1 week

If your baby was not born in a hospital, go to Question 57a.

56. This question asks about things that may have happened at the hospital where your new baby was born. For each item, circle Y (Yes) if it happened or circle N (No) if it did not happen.

- a. Hospital staff gave me information about breastfeeding...
- b. My baby stayed in the same room with me at the hospital...
- c. I breastfed my baby in the hospital...
- d. I breastfed in the first hour after my baby was born...
- e. Hospital staff helped me learn how to breastfeed...
- f. My baby was fed only breast milk at the hospital...
- g. Hospital staff told me to breastfeed whenever my baby wanted...
- h. The hospital gave me a breast pump to use...
- i. The hospital gave me a gift pack with formula...
- j. The hospital gave me a telephone number to call for help with breastfeeding...
- k. My baby used a pacifier in the hospital...
57a. How old was your new baby the first time he or she drank liquids other than breast milk (such as formula, water, juice, tea, or cow’s milk)?

___ Weeks OR ___ Months

☐ My baby was less than 1 week old
☐ My baby has not had any liquids other than breast milk

57b. How old was your new baby the first time he or she ate food (such as baby cereal, baby food, or any other food)?

___ Weeks OR ___ Months

☐ My baby was less than 1 week old
☐ My baby has not eaten any foods

If your baby is still in the hospital, go to Question 61.

58. In which one position do you most often lay your baby down to sleep now?

☐ On his or her side
☐ On his or her back
☐ On his or her stomach

59. Was your new baby seen by a doctor, nurse, or other health care worker for a one week check-up after he or she was born?

☐ No
☐ Yes

60. Did your new baby have any well-baby shots or vaccinations before he or she was 3 months old? Do not count shots or vaccinations given in the hospital right after birth.

☐ No
☐ Yes
☐ My child has not had any well-baby shots, but he or she is not 3 months old yet

61. Are you or your husband or partner doing anything now to keep from getting pregnant? (Some things people do to keep from getting pregnant include not having sex at certain times [natural family planning or rhythm] or withdrawal, and using birth control methods such as the pill, condoms, vaginal ring, IUD, having their tubes tied, or their partner having a vasectomy.)

☐ No
☐ Yes Go to Page 12, Question 63

62. What are your reasons or your husband’s or partner’s reasons for not doing anything to keep from getting pregnant now?

☐ I am not having sex
☐ I want to get pregnant
☐ I don’t want to use birth control
☐ My husband or partner doesn’t want to use anything
☐ I don’t think I can get pregnant (sterile)
☐ I can’t pay for birth control
☐ I am pregnant now
☐ Other Please tell us:

If you or your husband or partner is not doing anything to keep from getting pregnant now, go to Page 12, Question 64.
63. What kind of birth control are you or your husband or partner using now to keep from getting pregnant?

- [ ] Tubes tied or closed (female sterilization)
- [ ] Vasectomy (male sterilization)
- [ ] Pill
- [ ] Condoms
- [ ] Injection once every 3 months
  (Depo-Provera®)
- [ ] Contraceptive implant (Implanon®)
- [ ] Contraceptive patch (OrthoEvra®)
- [ ] Diaphragm, cervical cap, or sponge
- [ ] Vaginal ring (NuvaRing®)
- [ ] IUD (including Mirena®)
- [ ] Rhythm method or natural family planning
- [ ] Withdrawal (pulling out)
- [ ] Not having sex (abstinence)
- [ ] Emergency contraception
  (The “morning-after” pill)
- [ ] Other ———— Please tell us:

64. Below is a list of feelings and experiences that women sometimes have during pregnancy. Read each item to determine how well it describes your feelings and experiences. Then, write on the line the number of the choice that best describes how often you felt or experienced things this way during your most recent pregnancy. Use the scale when answering:

1 Never 2 Rarely 3 Sometimes 4 Often 5 Always

- a. I felt down, depressed, or sad...
- b. I felt hopeless ......................
- c. I felt slowed down .................

65. Below is a list of feelings and experiences that women sometimes have after childbirth. Read each item to determine how well it describes your feelings and experiences. Then, write on the line the number of the choice that best describes how often you have felt or experienced things this way since your new baby was born. Use the scale when answering:

1 Never 2 Rarely 3 Sometimes 4 Often 5 Always

- a. I felt down, depressed, or sad...
- b. I felt hopeless ......................
- c. I felt slowed down .................
### Question 66

Listed below are some things about quitting smoking that a doctor, nurse, or other health care worker might have done during any of your prenatal care visits. For each thing, circle Y (Yes) if it applied to you during any of your prenatal care visits or circle N (No) if it did not.

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Spend time with you discussing how to quit smoking</td>
<td>N</td>
</tr>
<tr>
<td>b.</td>
<td>Suggest that you set a specific date to stop smoking</td>
<td>N</td>
</tr>
<tr>
<td>c.</td>
<td>Suggest you attend a class or program to stop smoking</td>
<td>N</td>
</tr>
<tr>
<td>d.</td>
<td>Provide you with booklets, videos, or other materials to help you quit smoking on your own</td>
<td>N</td>
</tr>
<tr>
<td>e.</td>
<td>Refer you to counseling for help with quitting</td>
<td>N</td>
</tr>
<tr>
<td>f.</td>
<td>Ask if a family member or friend would support your decision to quit</td>
<td>N</td>
</tr>
<tr>
<td>g.</td>
<td>Refer you to a national or state quit line</td>
<td>N</td>
</tr>
<tr>
<td>h.</td>
<td>Recommend using nicotine gum</td>
<td>N</td>
</tr>
<tr>
<td>i.</td>
<td>Recommend using a nicotine patch</td>
<td>N</td>
</tr>
<tr>
<td>j.</td>
<td>Prescribe a nicotine nasal spray or nicotine inhaler</td>
<td>N</td>
</tr>
<tr>
<td>k.</td>
<td>Prescribe a pill like Zyban® (also known as Wellbutrin® or Buproprion®) or Chantix® (also known as Varenicline) to help you quit</td>
<td>N</td>
</tr>
</tbody>
</table>

### Question 67

During any of your prenatal care visits or after your most recent delivery, did a doctor, nurse, or other health care worker ever advise you to quit smoking?

- [ ] Yes, during my prenatal care visits
- [ ] Yes, after my delivery
- [ ] Yes, both times
- [ ] No
- [ ] No, I did not smoke at that time

### Question 68

At any time during your most recent pregnancy, did you stop smoking for one day or longer because you were trying to quit?

- [ ] No
- [ ] Yes

If your baby is not alive or is not living with you, go to Question 70.

### Question 69

During any of your prenatal care visits or after your most recent delivery, did a doctor, nurse, or other health care worker talk with you about how secondhand smoke could affect your baby after birth?

- [ ] Yes, during my prenatal care visits
- [ ] Yes, after my delivery
- [ ] Yes, both times
- [ ] No

### Question 70

This question is about the care of your teeth during your most recent pregnancy. For each item, circle Y (Yes) if it is true or circle N (No) if it is not true.

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>I needed to see a dentist for a problem</td>
<td>N</td>
</tr>
<tr>
<td>b.</td>
<td>I went to a dentist or dental clinic</td>
<td>N</td>
</tr>
<tr>
<td>c.</td>
<td>A dental or other health care worker talked with me about how to care for my teeth and gums</td>
<td>N</td>
</tr>
</tbody>
</table>
71. During your most recent pregnancy, did you receive any of the following services? For each one, circle Y (Yes) if you received the service or circle N (No) if you did not receive the service.

Did you receive—

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Help with an alcohol or drug problem</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>b. Help to reduce violence in your home</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>c. Counseling information for family and personal problems</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>

72. During your most recent pregnancy, would you have had the kinds of help listed below if you needed them? For each one, circle Y (Yes) if you would have had it or circle N (No) if not.

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Someone to loan me $50</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>b. Someone to help me if I were sick and needed to be in bed</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>c. Someone to take me to the clinic or doctor's office if I needed a ride</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>d. Someone to talk with about my problems</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>

If your baby is not alive or is not living with you, go to Question 74.

73. Since your new baby was born, did a doctor, nurse, or other health care worker talk with you about how to prevent your baby from getting tooth decay?

- [ ] No
- [ ] Yes

74. Since your new baby was born, did a doctor, nurse, or other health care worker offer you the Tdap (pertussis/whooping cough) vaccine for yourself?

- [ ] No
- [ ] Yes

The last questions are about the time during the 12 months before your new baby was born.

75. During the 12 months before your new baby was born, what was your yearly total household income before taxes? Include your income, your husband's or partner's income, and any other income you may have received. (All information will be kept private and will not affect any services you are now getting.)

- Less than $10,000
- $10,000 to $14,999
- $15,000 to $19,999
- $20,000 to $24,999
- $25,000 to $34,999
- $35,000 to $49,999
- $50,000 to $69,999
- $70,000 or more

76. During the 12 months before your new baby was born, how many people, including yourself, depended on this income?

   _ People

77. What is today's date?

   [ ] / [ ] / 20   
   Month  Day  Year