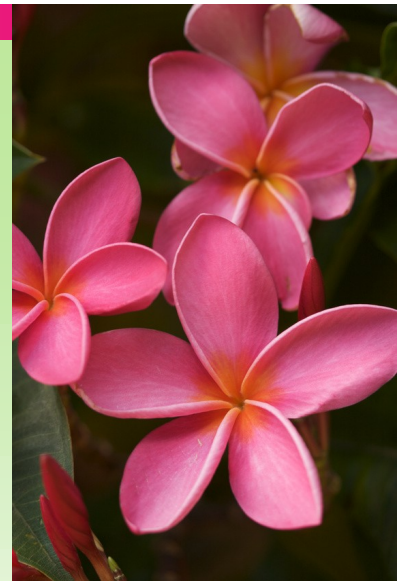


APrON Leaflet

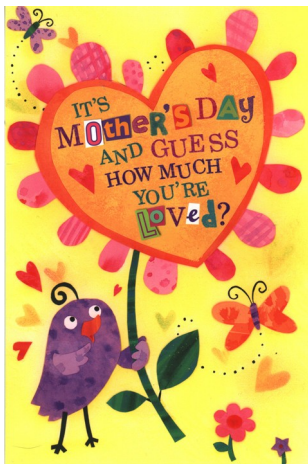


A message from Dr. Bonnie Kaplan, APrON's Team Lead

Those of us who have done clinical research for years know how long it can take to move from Idea-to-Funding-to-Implementation-to-Data Collection-to-Data Analysis-to-Interpretation-to-FINALLY *answering questions*. So we are delighted to begin a new section in our newsletter devoted solely to *research results*. Although we have already presented a couple of our results in past newsletters, with this issue we will begin presenting you with more — and believe me, we now have a lot to tell you! We hope you enjoy them — please give us your feedback! - more on pages 2-4 and 6

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We hope you had a Happy Mother's Day!

We would like to wish all of our APrON moms a very Happy Mother's Day! We hope you were spoiled—you deserve it!

Please see page 5 for an interview with Elizabeth Marck, one of APrON's participants, about how she feels to be a new mom.

RESULTS



Question: What do APrON women report as their vitamin/mineral intake the year prior to pregnancy?

What did we do?

- We looked at vitamin and mineral intake the year before pregnancy using a Food Frequency Questionnaire (FFQ) for the first 600 women
- The FFQ was written by 491 women with a mean age of 31 years and a mean body mass index (BMI) of 24.0kg/m² (considered to be within the normal range for BMI)
- So far we have looked more closely at three key nutrients: iron, calcium and vitamin D

What did we find?

- On average, intake from food and supplements combined was:
- 24.5 mg of iron
- 1225.8 mg of calcium
- 11.7 ug of vitamin D
- The proportion of women who met the recommended dietary allowance (RDA) from food and supplements was low for vitamin D (38%) and moderate for iron (64%) and calcium (62%)

Take home message: These data suggest that women in Alberta have a low to moderate intake of key nutrients prior to pregnancy, a period in time that is thought to be critical for the health of mothers and babies.

This study was presented in San Diego, California in April 2012 at the Experimental Biology meetings

Authors: Ramage Stephanie, Berglund Casey, McCargar Linda, Bell Rhonda. Dept of Agriculture, Food and Nutritional Science, University of Alberta.

Please remember that the APrON team values any data you can provide! If you've only partially completed a set of questionnaires or missed filling out an entire set, we encourage you to continue with us at the next time point.



APrON to stop recruiting in June 2012

Since we started recruiting in the summer of 2009, nearly **2200 mothers and their babies** and **1250 fathers** have joined our study. With our total number of participants reaching over 5500, the APrON team will stop taking new participants as of June 20th, 2012. Thank you all for making the APrON cohort one of the largest pregnancy cohorts in the world! We look forward to sharing more results with you as our study team changes its focus from recruitment to data collection and analysis.

Question: How many Natural Health Products (NHPs) are APrON women taking to supplement their diet over the course of pregnancy?

RESULTS

What did we do?

- We asked participants to complete a supplement intake questionnaire in each trimester to find out what NHPs they were taking
- We checked the amount of vitamins and minerals in all products from labels, packaging and websites
- We looked at reported daily intake of folic acid, vitamin D, calcium and iron from NHPs for the first 600 APrON women
- We compared average intake of these nutrients with current supplement guidelines from the Institute of Medicine

What did we find?

- More than 90% of women reported using one or more NHP in each trimester, which led to high intakes of some nutrients
- Median daily reported intakes were 1000 mcg of folic acid, 400 IU of vitamin D, 250 mg of calcium and 27 mg of iron in each trimester of pregnancy
- About 20% of women reported intakes above the upper limit (suggested max intake) for folic acid (1000 mcg) and iron (45 mg) at some point in their pregnancy
- The percentage of women who met the Institute of Medicine guidelines for supplements for each of the four nutrients we looked at are as follows:
 - More than 90% for folic acid
 - About 70% for vitamin D
 - About 80% for calcium
 - 20% for iron
- When all nutrients were considered, only 10% of the guidelines were met
- There was a notable difference in the level of education and ethnic background of women who followed the guidelines compared to those who did not

Take home message: The use of NHPs is a major contributor to vitamin and mineral intake during pregnancy in Canadian women.

This study was presented in San Diego, California in April 2012 at the Experimental Biology meetings

Authors: Fajer-Gomez Mariel (1), Thomas Stephanie(1), Loehr Sarah(1), Field Catherine(2), McCargar Linda(2)

(1) Dept of Agriculture, Food and Nutritional Science, University of Alberta

(2) Alberta Institute of Human Nutrition

We want to hear from you!

The APrON team is looking for participants to join a focus group which, we hope, will bring a participant voice to our study. Do you have ideas on how we can keep participants, like you, engaged and interested in our research? If so, we want to hear from you! Please contact us by email at infocalgary@apronstudy.ca for more information.



RESULTS

Question: How much choline do APrON women eat during pregnancy?



Background: Choline plays a key role in baby's growth and development. It also helps to improve learning and memory as well as supporting mother's overall health. As a result, pregnant and breastfeeding women need more choline in their diet. Unfortunately, we know very little about the amounts and sources of choline in the diets of pregnant women. In order to help us estimate choline intake in the Albertan population, we need a database that details the sources and mounts of choline in Albertan diets.

What did we do?

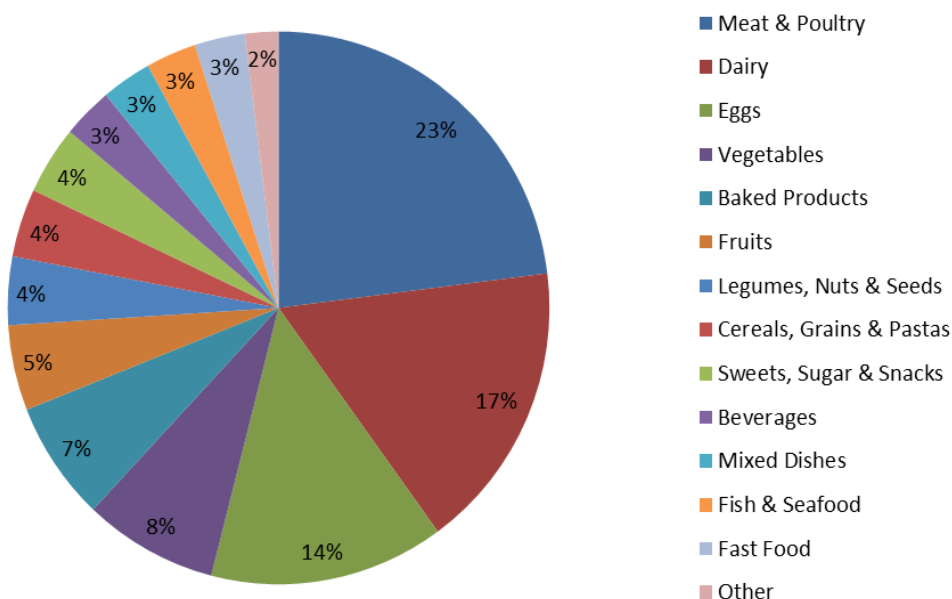
- Using a total of 488 24-hour dietary recalls from the second trimester of pregnancy, our research team developed a comprehensive choline database made up of foods eaten by the first 600 APrON women
- We then used this database to estimate choline intake, including types and sources of choline

What did we find?

- On average, pregnant women ate 345 mg of choline per day
- Only 22% of women met the current Adequate Intake for choline during pregnancy, which is 450 mg per day
- The top three sources of choline in the diet were meat/poultry, dairy and eggs
- The top three sources made up over 50% of all choline in the diet (see Figure 1 for more details on other sources that contributed to choline in the diet)

Take home message: This study is the first to look at choline in the diet of women in Alberta. We hope that this data will inform individuals and health professionals who are interested in increasing choline in the diet. The APrON team continues to look at dietary choline during other trimesters and during lactation.

Figure 1: The proportion of food categories contributing to choline in the diet of pregnant women in Alberta





APrON participants Elizabeth Marck and baby Lucy sit down with APrON Research Assistant, Natasha Koski, to talk about what it's like to be a new mom...

Can you describe what you felt the moment you first saw Lucy? I felt so happy and in love. I have never felt love like I did when she was given to me and I held her in my arms for the first time. The love I felt was true and unconditional.

How would you describe Lucy as a baby? She is so sweet, calm, funny and charming. The best thing about her is that she is so curious. She looks at and studies everything. I can't take my eyes off her—I don't want to miss anything!

"I have never felt love like I did when she was given to me and I held her in my arms for the first time"

Are there any special moments you could share that have happened since you brought Lucy home? There are so many, but one that comes to mind is when Lucy could see and recognize myself and my husband and me. When my husband comes home from work and says "Hello Lucy", she perks up and looks at him right away. She will do the same with me too. When she hears my voice, she looks for me and, when she sees me, she follows me with her eyes like a hawk. It is so sweet!

What features do you see in Lucy of yourself and your husband? Lucy mostly has her father's features: dark brown hair, brown eyes, cute chubby cheeks and a tiny little chin. She does kind of look like me when she makes certain facial expressions—she has my lips and ears! Even though she looks like her father and I, she is such an individual! It's amazing how you can see different generations of family features in your children. It depends on the faces they make and the light they're in!

Of all the baby toys/outfits/etc. that you have, what is the one thing you/Lucy couldn't live without? There are a few things we can't live without:

1. Receiving/warm blankets—you can never have enough!
2. Gripe water! - only use it if you need to, but if your baby is having a hard time at night because of colic/hiccups or an upset tummy, it really helps.
3. Nursing pillow—It comes in handy in so many ways: breastfeeding, propping up your baby, for yourself while you are in bed holding your baby and so much more!

Do you have any advice for moms-to-be? I would say a few things. Number one is relax—try not to let little things stress you out because it's not worth it! I have found that, since I've learned how to relax, life is so much easier. My baby is calm, my husband is calm and I am calm. Number two, so many people are going to give you advice about how you should raise your baby. Hear what they are saying but ultimately, you are the one to decide. Don't let people stress you out with what you should and shouldn't do. Lastly, have fun with your baby. They grow so fast, you don't want to miss out on all the good stuff!

RESULTS

Question: Is gestational weight gain associated with postpartum weight retention and infant measurements?

What did we do?

- We collected data for the first 600 APrON women on maternal weight before pregnancy, 2-3 times during pregnancy and 3 months after delivery
- We categorized women as Below, Met or Above, based on the 2010 Gestational Weight Gain Guidelines (http://www.hc-sc.gc.ca/fn-an/alt_formats/pdf/nutrition/prenatal/ewba-mbsa-eng.pdf)
- Infant birth weight, and weight and length at 3 months, were reported

What did we find?

- Over 55% of women gained above the guidelines
- Women who were overweight or obese prior to pregnancy were more likely to gain excess weight when compared to normal weight women
- When compared to women who met the recommendations for weight gain, women who gained above the recommendations were more likely to have higher postpartum weight retention, birth weight, infant weight and infant BMI at 3 months

Take home message: Gaining weight above the current guidelines for weight gain during pregnancy is associated with maternal obesity and higher infant weights. Interventions that optimize weight gain may significantly affect the long-term health of women and children.

This study was presented in San Diego , California in April 2012 at the Experimental Biology meetings.

Authors: Fatheema Begum, Ian Colman, Linda McCargar, Rhonda Bell, the APrON Study Team.



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**If you have any suggestions, questions or comments,
please send them in. We appreciate any and all feedback!**