

Slone Epidemiology Center Research News



Who Are We and Why Participate?

The **Boston University Pregnancy Study** on foot development is part of the larger research organization, Slone Epidemiology Center. Like all of the studies here at Slone, the aim of the **Pregnancy Study** is to understand the causes of health problems to work toward prevention. Examples of some of the other Slone research projects, we highlight below a few of our ongoing studies. For more details on the **Pregnancy Study**, see the 'Nuts and Bolts' article below.

Black Women's Health Study:

This is the largest follow-up study of the health of African-American women yet conducted. The purpose is to identify and evaluate causes and preventives of cancers and other serious illnesses in African-American women. With over 59,000 black women from all parts of the United States enrolled, the study has identified many important factors that increase the risk of disease, including an increase in risk of asthma among obese women, an increase in risk of diabetes when 2+ drinks of sugared soda or fruit drinks are consumed per day.

Hemifacial Microsomia Study:

Hemifacial Microsomia is characterized by an asymmetric face due to underdevelopment of the cheek, chin, mouth,

ear, and/or eye. It is one of the most common craniofacial malformations, yet there have been few studies of its impact on affected children. This study is still collecting information on children with and without hemifacial microsomia at ages 6-8 to evaluate quality of life, social well-being, and cognitive functioning. Mothers and teachers participate in this study by filling out questionnaires and administering tests to the children.

Birth Defects Study:

This study began in 1976 and continues today. It focuses on the safety and risks of a wide range of exposures in pregnancy, such as diet, illnesses, and medications. The outcomes of primary interest include many different types of birth defects and complications of pregnancy such as prematurity and pregnancy-induced hypertension. To date, over 35,800 women have been interviewed, making this one of the largest studies of its kind. Findings from the Birth Defects Study have spurred several new, spin-off studies. Both the Hemifacial Microsomia Study and the Pregnancy Study of foot development are examples of spin-off studies.

Over the years here at Slone, over 100,000 people have participated in research studies resulting in hundreds of publications on various public health and

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medical issues. This important research would not be possible without the generous contribution of our participants' time and experiences. □

For more detailed information on all the studies conducted at Slone check out our website at www.slone.bu.edu



Study Nuts and Bolts

We are inviting mothers of babies born with and without foot problems who live in Massachusetts, North Carolina or New York to participate in the **Pregnancy Study**. In collaboration with those state's health departments, we are interested in studying factors related to the development of the foot by interviewing mothers about their pregnancy.

In addition to the telephone interview, mothers are also invited to provide saliva samples from themselves and their babies. These are used to study biologic differences in families that might be related to the development of the foot. Mothers of

babies with foot problems are also asked to return a medical record release form so we can obtain complete and accurate diagnoses for valid study results.

All information we receive is kept strictly confidential. Preserving your confidentiality is a priority for us.

We recognize that the success of our research depends directly on women who have contributed their experiences to these studies. Participation really does make a difference! □

The Folic Acid Story

When the Slone Epidemiology Center at Boston University began conducting studies 32 years ago, we didn't think that any medicine or vitamin could actually *reduce* the risk of a birth defect. To our delight, we were wrong! Previous research had shown that women who already had one baby born with a neural tube defect, such as spina bifida, were much less likely to have a second baby with this problem if they took folic acid before pregnancy began. In an interview study, similar to this **Pregnancy Study**, we looked to see if folic acid also reduced the chance of having a first baby born with a neural tube defect. In 1993, Dr. Werler and colleagues¹ found that women who took a multivitamin containing folic acid around the time they became pregnant reduced the risk of neural tube defects by about half—a dramatic effect, and one that has been shown in many other studies as well. Also, our study was the first to show that the amount of folic acid (0.4mg or 400 mcg) contained in a standard multivitamin was enough to produce this effect.

Because of the clear benefit of folic acid in reducing risks of neural tube defects, we have studied whether it might reduce the risks of other birth defects as well, and we found that it might also



lower risks for heart defects, cleft lip and palate, and urinary tract defects.² It's now recommended that women who might become pregnant make sure they take enough folic acid (0.4mg) each day, either by eating lots of foods that contain folic acid or by taking a daily multivitamin. Getting enough folic acid from a normal diet can be difficult, so the government now requires that this vitamin be added to most flour, corn meal, pasta, and breakfast cereals.

When we looked at the dietary information women provided us during their interviews, we found that eating flour and cereal grains fortified with folic acid still didn't provide enough folic acid for most women. These results reinforced expert advice that the best way to get enough folic acid to



reduce certain birth defect risks is to take a daily multivitamin that contains folic acid. Since folic acid has this benefit only if it's taken around the time of conception, and since about half of all pregnancies are unplanned, it's important for all women of child-bearing potential to take a vitamin that contains folic acid every day. □

- 1 Werler MM et al. JAMA 1993; 269:1257-61.
- 2 Werler MM et al. Am J Epidemiol 1999; 150:675-82.
- 3 Werler MM et al. Am J Publ Health 1999;89:1637-40.



Fruits, Vegetables, and Upper Respiratory Infection During Pregnancy

It seems no one is spared the nuisance of a cold and some people suffer from more severe symptoms such as sinus infections and asthma. Figuring out how to prevent them or, at least, reduce the chance of getting them, would be welcome indeed. Recently, we took advantage of data obtained in an earlier, similar study here at Slone to study whether fruit and vegetable consumption decreased the risk of having an upper respiratory infection during pregnancy. We found that women who consumed an average of 7 or more servings of fruits and vege-

tables per day had a reduced risk of upper respiratory infection during pregnancy. This benefit seemed to be derived from the consumption of both fruits and vegetables as opposed to either alone. So, mom was right: eat your fruits and vegetables! □