



Focus on

# Folic Acid Use Before Pregnancy

Among Maryland Women Giving Birth 2009-2011

February 2014



**“All women between 15 and 45 years of age should consume folic acid daily**

**because half of U.S. pregnancies are unplanned and**

**because these [neural tube] birth defects occur very early in pregnancy (3-4 weeks after conception),**

**before most women know they are pregnant.”**

Centers for Disease Control and Prevention (CDC)  
2014

There is strong evidence that all women of childbearing age should take folic acid to reduce the risk of neural tube defects – defects in the development of a baby’s spine and brain. In the United States, over 2,500 babies each year are born with neural tube defects. Taking folic acid both before pregnancy and during the first trimester of pregnancy can reduce the risk of neural tube defects by up to 70%.

Therefore, it is recommended that all women ages 15-45, whether planning preg-

nancy or not, take a multivitamin with 400mcg (0.4 mg) of folic acid daily. This is especially important because roughly half of pregnancies nationwide and in Maryland are unintended. However, the most recent estimates suggest only about 30% of women take folic acid daily before pregnancy.

This brief focuses of folic acid use in Maryland. In addition to discussing use of folic acid overall, it also looks at the reasons women give for not taking folic acid.

## Prevalence of Folic Acid Use

The 2009-2011 Maryland PRAMS survey included two questions about folic acid use:

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?

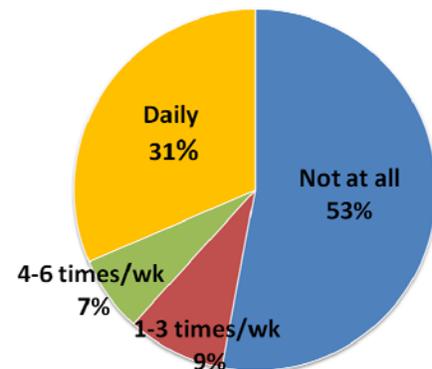
- A) I didn’t take a multivitamin, prenatal vitamin, or folic acid vitamin at all
- B) 1 to 3 times a week
- C) 4 to 6 times a week
- D) Every day of the week

If the answer to the first question was (A) women were also asked:

What were your reasons for not taking multivitamins, prenatal vitamins, or folic acid vitamins during the month before you got pregnant with your new baby? Check all that apply.

- A) I wasn’t planning to get pregnant
- B) I didn’t think I needed to take vitamins
- C) The vitamins were too expensive
- D) The vitamins gave me side effects (such as constipation)
- E) Other, please tell us: \_\_\_\_\_

Figure 1. Folic Acid Use by Maryland Women



From 2009-2011, 31.5% of postpartum mothers reported that they had used folic acid daily the month before pregnancy. The majority of women (53%) did not take folic acid at all, 8.8% took folic acid 1-3 times per week and 6.8% took folic acid 4-6 times per week (Figure 1).

## Characteristics of Women taking Folic Acid Daily

**Table 1. Percent of Mothers Taking Folic Acid Daily During the Month Before Pregnancy, Maryland, 2009-2011**

Factor	% Taking Folic Acid Daily
Age, years	
≤30	23
>30	41
Race/Ethnicity	
White, Non-Hispanic	40
Black, Non-Hispanic	22
Asian, Non-Hispanic	30
Hispanic	28
Education, highest level	
High school or less	22
Some college or more	37
Marital Status	
Married	41
Other	18
Insurance,	
Medicaid	23
Other	37
None	18
WIC during Pregnancy	
No	41
Yes	19
Stressful Event before Pregnancy*	
No	43
Yes	27
Chronic Conditions*	
No	33
Yes	28
Smoking before Pregnancy	
No	35
Yes	19
Previous Live Birth	
No	35
Yes	29
Pregnancy Intention*	
Intended	44
Unintended	17

Folic acid use was lowest among mothers who were non-Hispanic Black (22%), less than 30 years old (23%), did not attend college (22%), were not married (18%), had Medicaid (23%) or no insurance (18%), received WIC during pregnancy (19%), smoked before pregnancy (19%), or had an unintended pregnancy (17%).

In particular, the percentage of women with an unintended pregnancy who took folic acid was two and a half times lower than the percentage of women with an intended pregnancy (15% vs. 44%) (Table 1).

### \*Table 1 Definitions

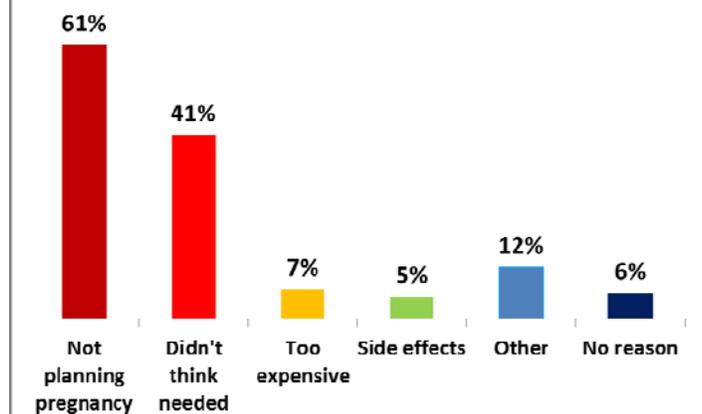
Stressful events - family illness; separation/divorce; moving or homelessness; a parent losing one's job; not being able to pay bills; fighting or arguing; someone close to the mother dying, struggling with drinking or drugs or being jailed; or a husband or partner not wanting the mother to be pregnant.

Chronic conditions - asthma, hypertension, anemia, heart problems, epilepsy/seizures, thyroid problems, depression or anxiety.

Intended pregnancy - pregnancy wanted "sooner" or "then"

unintended pregnancy - pregnancy wanted "later" or "never".

**Figure 2. Reasons for Not Taking Folic Acid Among Maryland Women**



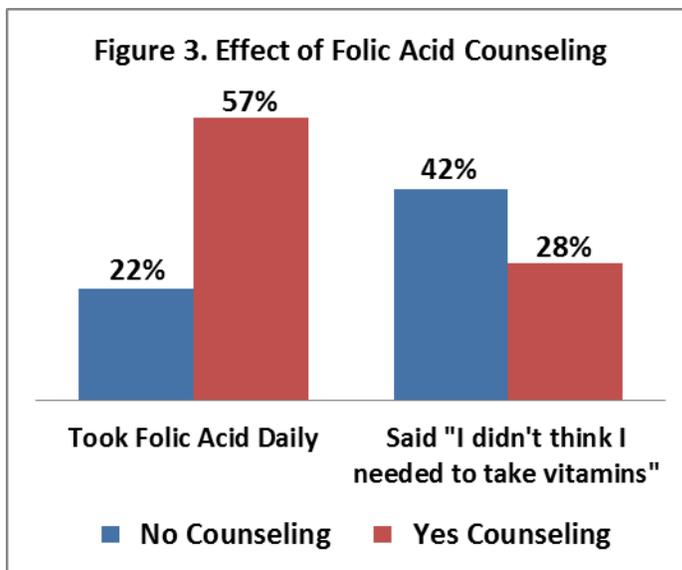
The most common reason for not taking folic acid was "I wasn't planning to get pregnant" (61%), followed by "I didn't think I needed to take vitamins" (41%). (Figure 2)

## Effect of Folic Acid Counseling

Only 27% of women received counseling about folic acid, meaning a health care worker talked to the mother about the importance of taking vitamins with folic acid before pregnancy.

However, folic acid counseling before pregnancy was found to have a strong positive effect on folic acid use. Women who reported that a doctor, nurse or other health care worker talked to them about

taking folic acid before they got pregnant took folic acid more than twice as often as those women who were not counseled (57% vs. 22%). Also women who received folic acid counseling were less likely to say they “didn’t think they needed to take folic acid” (28% vs. 42%). (Figure 3)



## Discussion

In Maryland, 32% of women reported taking folic acid daily the month before pregnancy. The most common reason for not taking folic acid was “I wasn’t planning to get pregnant” (61%), followed by “I didn’t think I needed to take vitamins” (41%).

Daily folic acid use was lower among younger women, minorities, those on Medicaid or without insurance, those who received WIC or suffered stressful events, those who smoked, and those who had a previous child. In particular, it was also much lower among women with an unintended pregnancy (15% vs. 44%).

Only 27% of women received counseling about folic acid before pregnancy. However, women who did receive folic

acid counseling were more than twice as likely to take folic acid daily (57% vs. 22%). Also women who received this counseling were less likely to say they “didn’t think they needed to take folic acid” (28% vs. 42%).

As recommended by the U.S. Public Services Task Force, all women of childbearing age, whether planning a pregnancy or not, should take a vitamin with 400 mcg of folic acid daily. There are many factors associated with less folic acid use. Counseling women about the importance of taking folic acid every day may help to increase daily folic acid use and decrease the incidence of neural tube defects.

*“No—I didn’t take vitamins before I was pregnant. Was I supposed to?”*

*“The vitamin pills were too big. I gagged on them. They also made me sick so I stopped taking them.”*

*“I took Flintstone vitamins every day of the week. I took the gummy ones. The prenatal vitamins made me sick.”*

*“I wish my doctor would have started me on a vitamin sooner than my 8 week visit.”*

**PRAMS mothers**



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## PRAMS Methodology

Data included in this report were collected from the Pregnancy Risk Assessment Monitoring System (PRAMS), a surveillance system established by the Centers for Disease Control and Prevention (CDC) to obtain information about maternal behaviors and experiences that may be associated with adverse pregnancy outcomes.

In Maryland, the collection of PRAMS data is a collaborative effort of the Department of Health and Mental Hygiene and the CDC. Each month, a

sample of approximately 200 Maryland women who have recently delivered live born infants are surveyed by mail or by telephone, and responses are weighted to make the results representative of all Maryland births.

This report is based on the responses of 4,548 Maryland mothers who delivered live born infants between January 1, 2009 and December 31, 2011 and were surveyed two to nine months after delivery.

## Limitations of Report

This report presents only basic associations between maternal factors, folic acid counseling, and folic acid use and between folic acid counseling and reasons for not taking folic acid. Unexamined inter-relationships among variables are not described and could explain some of the find-

ings in the report.

Maryland PRAMS data are retrospective and therefore subject to recall bias. They are also based on the mother's perception of events and may not be completely accurate.

## Resources

United States Public Services Task Force. Folic Acid for the Prevention of Neural Tube Defects. U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med* 2009;150:626-31.



Maryland Department of Health and Mental Hygiene  
 Maternal and Child Health Bureau • Vital Statistics Administration

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