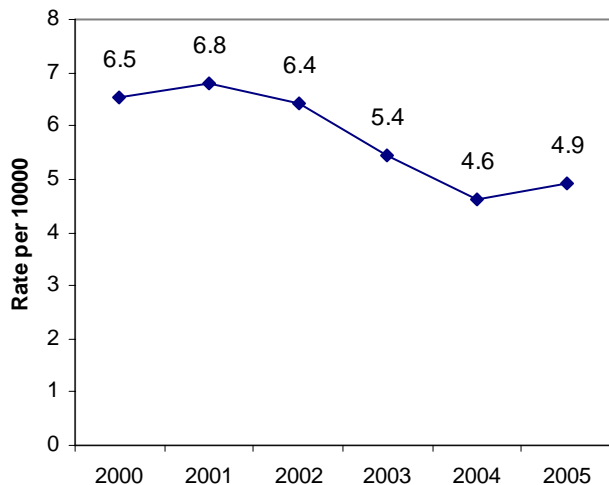




Importance of Preconception Vitamins

Multivitamins or prenatal vitamins typically contain folic acid can help reduce the risk of neural tube defects (NTD), particularly spina bifida and anencephaly, when taken in sufficient amounts during the first month of pregnancy. Studies have shown that 400 micrograms of folic acid taken daily before pregnancy can reduce the risk of having a child with a NTD by 50%.¹ The average lifetime cost of caring for an infant with a NTD is estimated at \$635,763 (\$279,210 direct cost) per year.² The national rate of spina bifida and anencephaly were 1.8 and 1.1 (per 10,000 live births) in 2005.³ The national Healthy People 2010 goal is to increase the daily intake of folic acid up to 80% for all women of childbearing age.

Three Year Rolling Average Rate of Neural Tube Defects, Hawai'i Birth Defects Program 2000-2005



Trends in Neural Tube Defects in Hawai'i

The three year rolling average rate of NTD, calculated as a composite of spina bifida and anencephaly, from the Hawai'i Birth Defects Program shows a slight increase from 4.6 (per 10,000 live births) in 2004 to 4.9 in 2005. This increase occurs after a steady decline in NTDs since 2001.

“Prescription prenatal vitamins should be included in healthcare coverage. Taking care of fetus is very important & can only ensure a healthier citizen.”

—Hawai'i PRAMS Participant

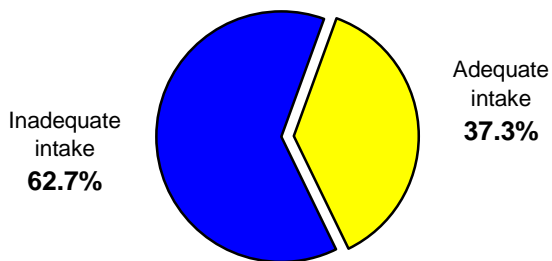
Data Highlights

- Overall, 62.7% of mothers took an inadequate amount of preconception vitamins
- Inadequate intake of preconception vitamins was more likely among Black, Hawaiian, and Samoan women
- Younger mothers, those with a high school or lower education, unmarried mothers, and those living in Hawai'i County were more likely to take an inadequate amount of preconception vitamins
- 72.6% of mothers with unintended pregnancy report taking an inadequate amount of preconception vitamins
- The rate of Neural Tube Defects has increased to 4.9 per 10,000 births

Preconception Vitamin Intake

Data from the Hawai'i PRAMS surveys (2004-2006) show that the majority (62.7%) of women took an inadequate amount of multivitamins or prenatal vitamins (defined as less than 4 days per week) in the month before pregnancy. The annual proportion of women taking an inadequate amount of preconception vitamins has increased from 60.7% in 2004 to 64.2% in 2006 coinciding with the increasing rate of NTD.

Preconception Vitamin Intake, Hawai'i PRAMS 2004-2006



For More Information Contact:

Hawai'i PRAMS Coordinator
Hawai'i Department of Health
PRAMS@doh.Hawaii.gov
(808) 733-4060

Suggested Citation

Balihe P, Hayes D, Miyashiro L, Fuddy L.
“Preconception Vitamin Fact Sheet.” Honolulu, HI: Hawai'i Department of Health, Family Health Service Division; September 2008.

Factors Associated With Inadequate Preconception Vitamin Intake

Black, Hawaiian, and Samoan women reported higher estimates of inadequate intake compared to other racial/ethnic groups. Women less than 20 years of age, a high school or lower education, unmarried, and an unintended pregnancy were at greater risk of inadequate multivitamin intake. Women who lived in Hawai'i County had the highest level of inadequate intake, compared to other counties in the State.

Discussion

This fact sheet highlights a slight increase in NTD and a decline in preconception vitamin intake. It is important to continue to monitor trends in both NTD and folic acid intake in Hawai'i. The increase in NTD was unexpected since there have been steady declines since folic acid fortification of foods began in 1998. It may be helpful to look for disparities in NTD among race/ethnic groups to see if there could be some cultural reasons such as dietary patterns that might explain this change.

In addition to decreasing NTD, there may be other benefits of folic acid. A recent study demonstrated that taking folic acid for at least one year prior to conception was associated with a reduction in early preterm delivery (<32 weeks gestation) by 50-70%, independent of age, race and other factors.⁴

In 2002, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) Services Branch in the Family Health Services Division developed a brochure in an effort to increase awareness about the importance of folic acid for a healthy pregnancy. It has been printed in five different languages: English, Ilocano, Chinese, Vietnamese, and Spanish to help reach women from these racial/ethnic groups. Other brochures from the March of Dimes are also distributed by WIC to increase awareness of folic acid. Dietary sources of folic acid include dark green and leafy vegetables, nuts and seeds, fortified cereals, and enriched grain products.^{1,2}

Approximately half of all pregnancies are unintended in the US and in Hawai'i, and the critical time for prevention of NTD is in the first month after conception so the Centers for Disease Control & Prevention (CDC) advises all women of childbearing age (15 to 45) to consume at least 400 micrograms daily through adequate dietary sources or with supplemental folic acid.¹

References

- Centers for Disease Control and Prevention. Recommendations for the use of folic acid to reduce the number of spina bifida and other neural tube defects. *MMWR Morb Wkly Rep.* 1992; 41(RR-14):1-7
- Centers for Disease Control and Prevention. Folic Acid FAQ. Accessed Sept 2008: <http://www.cdc.gov/ncbddd/folicacid/>
- Martin JA, Hamilton BE, Sutton PD, Ventura SJ, et al. Births: Final data for 2005. *National vital statistics reports.* 2007; 56(6).
- Bukowski R, Malone FD, et al. Preconceptional Folate Prevents Preterm Delivery. (Abstract, Society for Maternal-Fetal Medicine 28th Annual Meeting. Presented January 31, 2008). *American Journal of Obstetrics and Gynecology.* 2007; 197(6)S3.

Inadequate Preconception Vitamin Intake By Maternal Characteristics; Hawai'i PRAMS 2004-2006

	%	(95% CI)*
Race/Ethnicity		
White	56.6	(53.7 - 59.5)
Black	70.9	(62.0 - 78.4)
Hispanic	62.0	(52.2 - 70.9)
Hawaiian	72.6	(70.0 - 75.0)
Samoan	76.8	(69.3 - 83.0)
Other Pacific islander	62.3	(55.6 - 68.5)
Filipino	58.3	(55.4 - 61.1)
Japanese	53.8	(50.1 - 57.5)
Chinese	50.8	(47.4 - 54.2)
Korean	65.9	(60.8 - 70.6)
Other Asian	66.6	(55.9 - 75.8)
Maternal Age		
Under 20 years	78.9	(74.5 - 82.7)
20-24 years	75.3	(72.8 - 77.6)
25-34 years	60.2	(58.4 - 62.1)
35 or more years	45.1	(42.2 - 48.1)
Maternal Education		
< High School	72.0	(67.5 - 76.2)
High School	70.6	(68.6 - 72.6)
Some College	63.4	(60.8 - 65.8)
College graduate	46.2	(43.7 - 48.8)
Marital status		
Married	57.0	(55.4 - 58.6)
Unmarried	73.6	(71.5 - 75.7)
Intention of Pregnancy		
Intended	54.3	(52.5 - 56.1)
Unintended	72.6	(70.8 - 74.4)
Health Insurance Prior to Pregnancy		
Private Insurance	76.0	(72.7 - 79.0)
Medicaid/QUEST	67.9	(64.8 - 70.8)
None	58.7	(57.2 - 60.3)
County of Residence		
Hawai'i	70.8	(67.2 - 74.2)
Honolulu	61.8	(60.3 - 63.2)
Maui	63.8	(57.5 - 69.7)
Kauai	59.4	(55.2 - 63.4)
Overall	62.7	(61.5 - 66.5)

*note 95% CI refer to the 95% confidence interval around estimate.

About the Data

The **Hawai'i Pregnancy Risk Assessment Monitoring System (PRAMS)** is a self-reported survey of recent mothers conducted by mail with telephone follow-up. It is designed to monitor the health and experiences of women before, during, and just after pregnancy. Every year, about 2,000 women who deliver a live infant are randomly selected to participate.

The **Hawai'i Birth Defects Program** maintains a database of infant and young children with specific disabilities to provide reliable, valid and timely information to community agencies, hospitals, and government agencies for policy, planning, and decision making purposes.