

June 13, 2016

RE: Draft Recommendation Statement - Folic Acid for the Prevention of Neural Tube Defects: Preventive Medication

Dear Members of the U.S. Preventive Services Taskforce,

As pediatricians, public health researchers, and child health and policy experts with the nonpartisan Children's HealthWatch, we write to express concern that the Draft Recommendation Statement on Folic Acid for the Prevention of Neural Tube Defects: Preventive Medication does not mention food insecurity and its association with folate deficiency.

Food insecurity is defined as limited or uncertain access to enough food for all household members to lead a healthy and active life. It is a prevalent condition in the United States – with 14 percent of all U.S. households in 2014 experiencing food insecurity at some point in the last 12 months.<sup>1</sup> Certain groups experience much higher rates of food insecurity. For example, among all households with children under 18, 19.2 percent were food insecure. Among those with children under age 6, 19.9 percent were food insecure. In our own Children's HealthWatch dataset comprising primarily low-income families with children under age four, 23 percent were food insecure.

Food insecurity is linked to a host of negative outcomes in young children including increased risk for developmental delays,<sup>2</sup> iron-deficiency anemia,<sup>3</sup> fair or poor health, and hospitalizations.<sup>4,5</sup> Among school-aged children, food insecurity is associated with poor academic performance, poor emotional and physical health, and impaired social skills.<sup>6,7,8</sup> It is also associated with folate deficiency, particularly among women and girls.<sup>9, 10, 11</sup>

In particular, the draft document does not contain reference to the association of food insecurity with folate deficiency or with adverse pregnancy outcome, even though this association has been established in the following studies:

- Carmichael SL, Yang W, Herring A, Abrams B, Shaw GM. Maternal food insecurity is associated with increased risk of certain birth defects. *J Nutr.* 2007 Sep;137(9):2087-92.
- Devaney B, Kim M, Carriquiry A, Camano-Garcia G. Assessing the nutrient intakes of vulnerable subgroups. Washington, DC: USDA, Economic Research Service; 2005. Report No.: CCR11.
- Dixon LB, Winkleby MA, Radimer KL. Dietary intakes and serum nutrients differ between adults from food-insufficient and food-sufficient families: Third National Health and Nutrition Examination Survey, 1988-1994. *J Nutr.* 2001;131:1232-1246.

Carmichael, et al. demonstrated that maternal food insecurity ascertained retrospectively 6 weeks or longer after delivery was associated with increased risk of certain birth defects (e.g. cleft palate, spina bifida and anencephaly), controlling for maternal race-ethnicity, education, BMI, recalled intake of folic acid-containing supplements, dietary intake of folate and energy, neighborhood crime and stressful life events. These findings suggest that food insecurity in the context of the prevalent stressful life conditions in low income families is associated with risk of birth defects whether because of relative folate deficiency or some other mechanism reflecting compromised nutrition. In general, neural tube defects are thought to be 50 to 70% preventable by adequate periconceptual folic acid intake.

Devaney et al found that adolescent and adult female Food Stamp participants had a prevalence of inadequate micronutrient levels, including folate. Given selection bias (those who are food insecure seek out help from what was formerly known as the Food Stamp Program (now the Supplemental Nutrition Assistance Program, or SNAP)), the authors suggest that nutritional health, especially for women and adolescent girls, may be compromised in the context of household food insecurity.

Lastly, Dixon et al. found in age-stratified analyses between 27-50% of younger adults (ages 29-50), which includes women of child-bearing age, from food-insufficient households reported intake of folate below 50% of the recommended dietary allowance (RDA).

There is also no mention of the role of food insecurity in folate acid deficiency prevention and treatment or in future research needs. This seems to be a significant omission given the prevalence of food insecurity in the U.S., food insecurity's correlation with poor nutrition in general and folate deficiency, in particular, and the clear importance of nutrition for prevention of neural tube defects. More and more recent research on the role of nutrition assistance programs in ameliorating food insecurity and improving nutritional intake are needed, as well as whether it is economically realistic to expect low income women to meet periconceptual folate needs on a SNAP budget of \$1.40 per meal per person per day, often in the setting of food deserts. Actual measures of serum folate in impoverished young women and girls in the context of current economic circumstances and food assistance policies would be informative.

We urge the US Preventive Services Taskforce to carefully consider these concerns related to the health of women and children in their discussions of the Recommendation Statement. There is a strong evidence base for the including discussion of food insecurity's role in folate deficiency. With the high prevalence of food insecurity and its association with folate deficiency, a more comprehensive research, evaluation and treatment approach is needed to advance the health of mothers and their children.

Sincerely,



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[Children's HealthWatch](#) is a nonpartisan network of pediatricians, public health researchers, and policy and child health experts committed to improving children's health in America. Every day, in urban hospitals across the country, we collect data on children ages zero to four who are from families experiencing economic hardship. We analyze and release our findings to academics, legislators, and the public to inform public policies and practices that can give all children equal opportunities for healthy, successful lives.

For questions or further information, please contact Stephanie Ettinger de Cuba, Children's HealthWatch Research and Policy Director, at [sedc@bu.edu](mailto:sedc@bu.edu) or 617-638-5850.

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<sup>1</sup> Coleman-Jensen, A., Rabbitt, MP., Gregory, C., Singh, A. Household Food Security in the United States in 2014. USDA Economic Research Service. September 2015.

<sup>2</sup> Rose-Jacobs R, Black MM, Casey PH, et al. Household food insecurity: Associations with at-risk infant and toddler development. *Pediatrics*. 2008;121(1):65-72. doi: 10.1542/peds.2006-3717 [doi].

<sup>3</sup> Skalicky A, Meyers AF, Adams WG, Yang Z, Cook JT, Frank DA. Child food insecurity and iron deficiency anemia in low-income infants and toddlers in the United States. *Matern Child Health J*. 2006;10(2):177-185. doi: 10.1007/s10995-005-0036-0 [doi].

<sup>4</sup> Casey PH, Szeto K, Lensing S, Bogle M, Weber J. Children in food-insufficient, low-income families: Prevalence, health, and nutrition status. *Arch Pediatr Adolesc Med*. 2001;155(4):508-514. doi: pnu00206 [pii].

<sup>5</sup> Cook JT, Frank DA, Berkowitz C, et al. Food insecurity is associated with adverse health outcomes among human infants and toddlers. *J Nutr*. 2004;134(6):1432-1438.

<sup>6</sup> Alaimo K, Olson CM, Frongillo EA, Jr, Briefel RR. Food insufficiency, family income, and health in US preschool and school-aged children. *Am J Public Health*. 2001;91(5):781-786.

<sup>7</sup> Jyoti DF, Frongillo EA, Jones SJ. Food insecurity affects school children's academic performance, weight gain, and social skills. *J Nutr*. 2005;135(12):2831-2839. doi: 135/12/2831 [pii].

<sup>8</sup> Ashiabi, G. Household food insecurity and children's school engagement. *JChildren and Poverty*, 2005;11(1), 3-17.

<sup>9</sup> Carmichael SL, Yang W, Herring A, Abrams B, Shaw GM. Maternal food insecurity is associated with increased risk of certain birth defects. *J Nutr*. 2007 Sep;137(9):2087-92.

<sup>10</sup> Devaney B, Kim M, Carriquiry A, Camano-Garcia G. Assessing the nutrient intakes of vulnerable subgroups. Washington, DC: USDA, Economic Research Service; 2005. Report No.: CCR11.

<sup>11</sup> Dixon LB, Winkleby MA, Radimer KL. Dietary intakes and serum nutrients differ between adults from food-insufficient and food-sufficient families: Third National Health and Nutrition Examination Survey, 1988-1994. *J Nutr*. 2001;131:1232-1246.