

REPORT OF THE COUNCIL ON SCIENCE AND PUBLIC HEALTH

CSAPH Report 1-I-13

Subject: Inclusion of Supplement Purchases in Nutritional Assistance Programs
(Resolution 905-I-12)

Presented by: Russell W.H. Kridel, MD, Chair

Referred to: Reference Committee K
(Kenneth M. Certa, MD, Chair)

1 Resolution 905-I-12, introduced by the Medical Student Section and referred by the House of
2 Delegates, asked:

3
4 That our American Medical Association (AMA) (1) support the addition of folic acid
5 supplements in the Supplemental Nutrition Assistance Program, the Special Supplemental
6 Nutrition Program for Women, Infants, and Children, and other similarly aligned programs;
7 and (2) work with United States Department of Agriculture and other appropriate organizations
8 to encourage and procedurally facilitate the implementation of folic acid supplements in the
9 Supplemental Nutrition Assistance Program, the Special Supplemental Nutrition Program for
10 Women, Infants, and Children, and other similarly aligned programs.

11
12 INTRODUCTION

13
14 The Supplemental Nutrition Assistance Program (SNAP), formerly known as the Food Stamp
15 Program, provides a basic safety net to millions of people by providing monthly benefits to eligible
16 low-income families to purchase food. SNAP allows for the purchase of food items that the
17 household can eat and for the purchase of seeds or plants that produce foods for human
18 consumption. SNAP benefits do not extend to purchases of medicines or dietary supplements such
19 as vitamins or minerals.

20
21 The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides
22 Federal grants to states for supplemental foods, health care referrals, and nutrition education for
23 low-income pregnant women, breastfeeding and non-breastfeeding postpartum women, and to
24 infants and children up to age five years who are found to be at nutritional risk. Foods eligible for
25 purchase under WIC are determined on a state level, but generally include bread and grains,
26 cereals, milk and cheese, fruits and vegetables, and infant food and formula; often only store
27 (generic) brands are eligible. As with SNAP, vitamins and other dietary supplements are not
28 covered under WIC, which stresses the importance of maintaining adequate intake of nutrients such
29 as folate through a healthy diet.

30
31 This report examines the potential inclusion of vitamin and mineral supplements as eligible items
32 under the SNAP and WIC programs. Although Resolution 905-I-12 focused on folic acid
33 supplements, the Council believes it is most appropriate to examine the inclusion of supplements in
34 general, since optimal health is dependent on achieving recommended levels of several nutrients.

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Action of the AMA House of Delegates 2013 Interim Meeting: Council on Science and Public
Health Report 1 Recommendations Adopted as Amended, and Remainder of Report Filed.

1 The Council acknowledges the importance of folic acid in reducing the occurrence of neural tube
2 defects (NTDs), and briefly discusses the special case of folic acid in this report. It is worth noting
3 that the Council has previously examined the relationship of folic acid to NTDs, as well as the need
4 to expand fortification programs to include corn-based products.^{1,2}

5 6 METHODS

7
8 Literature searches were conducted in the PubMed database for English-language articles published
9 between 1995 and August 2013 using the search terms “supplemental nutrition assistance
10 program,” “SNAP,” “food stamp,” “WIC,” and “women infants children,” along with the terms
11 “supplements,” “vitamin,” and “mineral.” Additionally, a Google search was conducted using the
12 same search terms. A comprehensive report examining the potential use of SNAP benefits to
13 purchase supplements,³ as well as several evaluations of the SNAP and WIC programs,⁴⁻⁸ were
14 identified and relied upon for many of the report’s key discussion points.

15 16 NUTRIENT INTAKE

17 18 *Recommended Nutrient Intake for Individuals*

19
20 Recommended Dietary Allowances (RDAs), which represent the average daily dietary intake level
21 sufficient to meet the nutrient requirements of nearly all (97-98%) healthy individuals in a group,
22 have been established for nearly all nutrients and life stages, and are published by the Institute of
23 Medicine’s Food and Nutrition Board.⁹ Individual nutrient needs vary; RDA levels are set to
24 provide a safety factor for each nutrient, so recommended levels generally exceed the actual
25 requirements of most individuals. Even when nutrient intake is below the RDA, the nutrient needs
26 of any given individual may still be met.¹⁰ A well-balanced, healthy diet is recommended for
27 achieving recommended nutrients levels, however in certain circumstances, supplements may be
28 useful in providing one or more nutrients that otherwise may be consumed in less than
29 recommended amounts.¹¹ For example, it is recommended that pregnant women consume 600 µg
30 of folate daily to reduce the risk of the pregnancy being affected by an NTD,⁹ but many will find it
31 difficult to consume that level through food. A daily folic acid supplement is therefore often
32 recommended.¹²⁻¹⁵

33 34 *Average Nutrient Intake of Americans*

35
36 According to National Health and Nutrition Examination Survey (NHANES) data, 87.2%-98.3% of
37 the general population achieves adequate intake of 10 essential vitamins and minerals including
38 folate (Table).^{4,5} Adequate intake of vitamin C, potassium, vitamin A, magnesium, and vitamin E
39 are achieved by 68.8%, 57.8%, 55.4%, 44.1%, and 8.3% of the total population, respectively
40 (Table).^{4,5}

41
42 When nutrient intake is considered according to income level and participation in SNAP, those in
43 higher income groups achieve adequate nutrient intake in significantly higher proportions for 15
44 vitamins and minerals examined than those in the SNAP program.⁴ The magnitude of difference
45 varies; for example, vitamin E, magnesium, and vitamin A have the largest differences, while for
46 iron, niacin, vitamin B₁₂ and riboflavin, the differences are smaller (Table).⁴

47
48 In contrast, few significant differences in nutrient intake exist among WIC program participants
49 and non-participant higher-income individuals. Similar proportions of WIC participant children and
50 children of higher-income parents meet recommended nutrient intake (Table),^{5,16} and few

1 differences have been found in the nutrient intake of pregnant WIC participants compared with
2 pregnant non-WIC participants.¹⁷

3
4 INCLUSION OF VITAMIN AND MINERAL SUPPLEMENTS IN THE SUPPLEMENTAL
5 NUTRITION ASSISTANCE PROGRAM

6
7 Data showing that fewer SNAP participants achieve adequate nutrient intake than do higher-
8 income individuals suggests that the use of vitamin and mineral supplements among participants
9 may be beneficial. In 1999, the USDA's Food and Nutrition Service issued a Congressionally-
10 mandated report examining the merits of inclusion of vitamin and mineral supplements as eligible
11 items under the SNAP program.³ The report acknowledged small gaps in the nutrient intake of
12 SNAP participants and recognized that vitamin and mineral supplements may be beneficial for
13 some participants, but for a number of reasons summarized below, did not explicitly endorse the
14 inclusion of supplements as a SNAP benefit.

15
16 *Health Benefits of Supplement Inclusion in SNAP*

17
18 It is well known that nutrient intake affects health, but evidence establishing links between small
19 nutrient deficiencies and chronic degenerative diseases is more complex.³ While evidence supports
20 the use of supplements in certain circumstances, their effectiveness varies across the nutrients in
21 question and population subgroup. Another complicating factor is the difficult task of determining
22 the health benefit of supplements apart from nutrients acquired from food intake, especially given
23 that many foods are fortified with vitamins and minerals.³

24
25 To inform its report, the Food and Nutrition Service convened an expert panel to explore
26 supplement inclusion in SNAP. The panel recognized the benefits of nutritional supplements in
27 certain subpopulations, but it found no existing evidence indicating that the subgroups that might
28 benefit most from nutritional supplements would actually use them.³ Additionally, the panel found
29 no evidence demonstrating that the ability to purchase supplements with SNAP benefits would
30 benefit participants as a group.³

31
32 *Economic Benefits of Supplement Inclusion in SNAP*

33
34 A paucity of evidence exists examining the economic benefits of including supplement purchases
35 in the SNAP program. Cost-benefit analyses have suggested that nutritional supplements can
36 reduce health care costs due to hospitalizations for birth defects, low birthweight premature births,
37 and coronary artery disease; however, those findings are based on narrow population subgroups
38 and therefore cannot be generalized to the larger population of SNAP participants.^{3,18} Studies more
39 directly addressing the economic benefit of supplement inclusion in SNAP would need to include
40 factors such as which supplements could be purchased, who would buy them, and how dietary
41 patterns might change as a result.³

42
43 *Determination of Supplement Eligibility and Administrative Implementation*

44
45 The Food and Nutrition Act of 2008 defines eligible items for purchase under the SNAP program.
46 Eligible items are any food or food product for home consumption, and seeds and plants that
47 produce food for consumption by SNAP households. The following items are not eligible for
48 purchase with SNAP benefits: alcoholic beverages; tobacco products; hot food and any food sold
49 for on-premises consumption; and nonfood items such as pet foods, soaps, paper products,
50 medicines, vitamin and mineral supplements, household supplies, grooming items, and cosmetics.
51 A change in the eligibility status of vitamins and supplements would require legislative action.³

1 If vitamin and mineral supplements were authorized as eligible items for purchase under SNAP, a
2 clear definition of what constitutes an eligible product would be needed. A supplement is defined
3 by the Dietary Supplement Health and Education Act (DSHEA) of 1994 as a product taken by
4 mouth that contains a “dietary ingredient” intended to supplement the diet. The definition is broad,
5 and includes vitamins, minerals, herbs or other botanicals, amino acids, and substances such as
6 enzymes, organ tissues, glandulars, and metabolites.¹⁹ It is estimated that more than 55,000 dietary
7 supplements are available for purchase.²⁰ Options for product eligibility could range from making
8 eligible all supplements carrying a supplement facts label (and therefore considered by the FDA to
9 be a supplement), to limiting eligibility to only vitamin and mineral supplements with established
10 health benefits.³ While the latter may seem like the most reasonable option, its implementation
11 would be difficult given the number of supplement products that contain ingredient combinations;
12 it is difficult to determine whether many of these combination products are primarily vitamin or
13 mineral supplements with established health benefits.³ Retailers selling supplements would also
14 face challenges in distinguishing eligible and ineligible supplement products.³

15 16 *Changes to the SNAP Program Model*

17
18 SNAP exists to provide assistance to low-income Americans in purchasing food items; it focuses
19 on achieving adequate nutrient intake through a healthful diet. The introduction of dietary
20 supplements as eligible items calls into question whether the existing food model would remain
21 adequate for defining a healthful diet, estimating associated food costs, and determining benefit
22 amounts.³ Currently, SNAP participants are provided with education focusing on the purchase,
23 preparation, and consumption of a combination of foods that are consistent with maintaining a
24 healthful diet. If supplements were eligible items, recipients would need to be provided with
25 guidance on how to use information in the marketplace to make supplement purchases that meet
26 their individual needs and represent good value.³ Additionally, it is questionable whether the ability
27 to purchase supplements without a concomitant increase in monetary benefits to support such
28 purchases would enable families to continue purchasing enough healthy food to meet basic hunger
29 needs.³

30 31 **PROPOSED IMPROVEMENTS TO THE SNAP PROGRAM**

32
33 Several barriers have been identified as standing in the way of SNAP participants eating
34 nutritiously.⁷ For example, food markets and/or restaurants that offer a good selection of healthy,
35 value-oriented foods are often located far from participants. SNAP participants, like most
36 Americans, face widespread marketing of unhealthy foods, and the food industry and other
37 corporate interests have pushed back on program changes designed to place emphasis on healthier
38 food choices. Healthier foods are often more expensive, and working families lack the time to plan
39 meals and shop. Lower health literacy among people with less education has generally been noted,
40 and the nutrition education component of SNAP receives modest funding. Further, the USDA does
41 not currently collect point-of-purchase data about the foods that are bought by SNAP recipients or
42 make publicly available information about where benefits are redeemed; these data are important in
43 understanding how to improve nutrition among SNAP participants.⁷

44
45 The SNAP (and former Food Stamp) program has been evaluated a number of times throughout its
46 existence, with several recommendations having been made to strengthen its mission to alleviate
47 hunger and improve the nutritional status of low-income Americans. In 2012, the Center for the
48 Study of the Presidency and Congress (CSPC) developed a comprehensive evaluation of the SNAP
49 program, including ten recommendations intended to reformulate SNAP as a program that serves
50 both as an invaluable safety net for low-income households and also as a tool to fight the
51 concurrent threats of food insecurity, poor nutrition, and obesity that are prevalent in contemporary

1 American society.⁷ The recommendations largely echo those of other evaluations and include
2 protection of funding levels for SNAP; integration of strategies to align purchases to the 2010
3 Dietary Guidelines for Americans;¹¹ focusing attention on children's health; incentivizing the
4 purchase of fruits, vegetables, and whole grains; and establishing stronger food stocking standards
5 for SNAP retailers.^{7,8} The full set of CSPC recommendations can be found in the Appendix.
6 Notably, neither the CSPC nor an additional expert group that recently evaluated the SNAP
7 program recommended the inclusion of supplement purchases as a way to strengthen the
8 program.^{7,8}

9
10 Since 1994, nearly a dozen bills seeking to include the purchase of supplements as a SNAP benefit
11 have been introduced in Congress, many as part of the Farm Bill reauthorizations.¹⁰ The
12 supplement provisions of the various bills either were never passed by both chambers or were
13 dropped in the conference process. The bills generated opposing views from stakeholders. The
14 Council for Responsible Nutrition (a trade organization representing the supplement industry) and
15 a number of individual nutrition experts supported several of the bills, arguing that vitamin and
16 mineral supplements can provide a vital safety net when food intake is inadequate.²¹ The American
17 Academy of Pediatrics (AAP), American Heart Association, the Food Research and Action Center,
18 and several individual nutrition experts opposed the bills, believing that the ability to purchase
19 supplements without a concomitant increase in monetary benefits to support such purchases would
20 ultimately reduce the amount of healthy food purchased and increase the chance that families
21 would be hungrier more often and for longer durations.²¹

22 23 AMA POLICY ON SUPPLEMENTAL NUTRITION PROGRAMS

24
25 The AMA has historically been supportive of improvements to supplemental nutrition programs
26 that would increase nutrient intake. Policy D-150.983 (Food Stamp Incentive Program) supports
27 legislation that would provide a meaningful increase in the value of food stamps when used to
28 purchase fruits and vegetables. Similarly, Policy H-150.937 (Reducing the Price Disparity Between
29 Calorie-Dense, Nutrition-Poor Foods and Nutrition-Dense Foods) supports programs that would
30 extend SNAP and WIC benefits to fruit and vegetable purchases at farmer's markets. Adequate
31 funding for programs that seek to improve nutrition and obesity, such as the WIC and SNAP
32 programs, also is supported by the AMA (H-150.937; H-245.979, Opposition to Proposed Budget
33 Cuts in WIC and Head Start).

34 35 SPECIAL CONSIDERATION FOR FOLIC ACID

36
37 Folic acid reduces the occurrence of NTDs, including spina bifida and anencephaly.²²⁻²⁵ Citing its
38 protective effect, the U.S. Public Health Service in 1992 recommended that all women of child-
39 bearing age consume 400 µg of folic acid daily, through both foods rich in folate and vitamin
40 supplementation.²⁶ To further promote folic acid intake, the FDA mandated in 1996 that all
41 enriched grain products sold in the U.S. must be fortified with folic acid by 1998.²⁷ Following
42 implementation of the fortification mandate, the number of pregnancies in the U.S. affected by an
43 NTD decreased by 36%, from approximately 4,000 per year during 1995-1996 to 3,000 per year
44 during 1999-2000.^{28,29} The percentage of the population with low serum folate declined from 21
45 percent in 1988-1994 to less than one percent in 1999-2000.³⁰ A list of foods high in folate, as well
46 as popular breakfast cereals fortified with folic acid, can be found on the Web sites of the National
47 Institutes of Health Office of Dietary Supplements and the Centers for Disease Control and
48 Prevention (CDC), respectively.^{31,32} Most state Medicaid programs cover the purchase of folic acid
49 supplements for beneficiaries.³³

50 The medical community has collectively supported folic acid supplementation and fortification
51 strategies. The United States Preventive Services Task Force, American Congress of Obstetricians

1 and Gynecologists, American Academy of Family Physicians, and American Academy of
2 Neurology recommend that women of child-bearing age take a 400 µg/day folic acid supplement,
3 and the AAP endorses the U.S. Public Health Service recommendation.^{12-15,34} The AMA supports
4 “broad-based public educational programs about the need for women of child-bearing potential to
5 consume adequate folic acid through nutrition, food fortification, and vitamin supplementation to
6 reduce the risk of neural tube defects” (H-440.898), and has urged manufacturers to fortify corn-
7 grain products (D-150.985).

8
9 The CDC recently evaluated the effectiveness of current approaches to increasing folic acid
10 intake.³⁵ It found that supplementation alone has not been effective since approximately half of
11 pregnancies are unplanned; however, fortification has been highly effective since it makes folic
12 acid accessible to all women of child-bearing age without requiring the behavior changes
13 associated with daily supplement use or dietary improvement.³⁵ Based on its findings, the CDC
14 recommends expansion of fortification efforts, including for corn-based foods that are staples in the
15 Hispanic population, which continues to experience higher rates of NTDs than other racial/ethnic
16 groups in the U.S.³⁵

17 18 CONCLUSIONS

19
20 A smaller proportion of SNAP participants achieves adequate nutrient intake compared to higher-
21 income individuals. Among WIC program participants, few differences in nutrient intake have
22 been noted compared to higher-income individuals. The inclusion of supplement purchases under
23 the SNAP program has been proposed as a mechanism to improve nutrient intake among
24 participants, but for a number of reasons, the administrators of the program have not instituted such
25 benefits. Although the Council sees merit in the idea of using supplements to increase nutrient
26 intake of SNAP participants, it believes that improvements proposed as a result of extensive SNAP
27 program evaluations are more likely to increase nutrient intake while also addressing food
28 insecurity and obesity. Consistent with AMA policy, the Council believes that the SNAP and WIC
29 programs are essential for ensuring the health of millions of Americans, and supports
30 improvements that will address contemporary nutrition needs. Regarding folic acid, the Council
31 strongly supports continued efforts to ensure that all women of child-bearing age reach
32 recommended levels. Since supplementation alone has been mostly unsuccessful in widely
33 increasing folic acid intake, the Council believes that the addition of folic acid supplements as
34 eligible items in supplemental nutrition programs is not appropriate at this time.

35 36 RECOMMENDATION

37
38 The Council on Science and Public Health recommends that the following statement be adopted in
39 lieu of Resolution 905-I-12, and that the remainder of the report be filed.

- 40
41 1. That our American Medical Association support improvements to the Supplemental
42 Nutrition Assistance Program (SNAP) and Special Supplemental Nutrition Program for
43 Women, Infants, and Children (WIC) that are designed to promote adequate nutrient intake
44 and reduce food insecurity and obesity. (New HOD Policy)
- 45
46 2. That our AMA reaffirm Policy D-150.985, which urges fortification of all grain products,
47 including those that are corn-based, as a means to increase folic acid intake in all women of
48 child-bearing age. (Reaffirm HOD Policy)
- 49
50 3. That our AMA reaffirm Policy H-440.898, which encourages education of women on the
51 need to achieve adequate folic acid intake. (Reaffirm HOD Policy)

Fiscal note: No significant fiscal impact

REFERENCES

1. American Medical Association Council on Science and Public Health. Folic Acid Relationship to Spinal Closure Birth Defects and Adult Vascular Disease. November 1995. <http://www.ama-assn.org/resources/doc/csaph/csai-95.pdf>. Accessed 9-10-13.
2. American Medical Association Council on Science and Public Health. Folic Acid Fortification of Grain Products. June 2006. <http://www.ama-assn.org/resources/doc/csaph/a06csaph6-fulltext.pdf>. Accessed 9-10-13.
3. United States Department of Agriculture Food and Nutrition Service. The Use of Food Stamps to Purchase Vitamin and Mineral Supplements. September 1999. <http://www.fns.usda.gov/ora/MENU/Published/snap/FILES/ProgramDesign/vitamin.pdf>. Accessed 8-12-13.
4. United States Department of Agriculture Food and Nutrition Service. Diet Quality of Americans by Food Stamp Participation Status: Data from the National Health and Nutrition Examination Survey, 1999-2004. July 2008. <http://www.fns.usda.gov/ora/menu/published/SNAP/FILES/Participation/NHANES-FSP.pdf>. Accessed 8-12-13.
5. United States Department of Agriculture Food and Nutrition Service. Diet Quality of American Young Children by WIC Participation Status: Data from the National Health and Nutrition Examination Survey, 1999-2004. July 2008. <http://www.fns.usda.gov/Ora/menu/Published/WIC/FILES/NHANES-WIC.pdf>. Accessed 8-12-13.
6. Institute of Medicine Food and Nutrition Board, Committee on Dietary Risk Assessment in the WIC Program. Dietary Risk Assessment in the WIC Program. 2002. <http://www.fns.usda.gov/Ora/menu/Published/WIC/FILES/WICDietaryRisk.pdf>. Accessed 8-12-13.
7. Center for the Study of the Presidency and Congress, Health and Medicine Program. SNAP to Health: A Fresh Approach to Strengthening the Supplemental Nutrition Assistance Program. July 2012. http://www.thepresidency.org/storage/documents/CSPC_SNAP_Report.pdf. Accessed 8-12-13.
8. Leung CW, Hoffnagle EE, Lindsay AC, Lofink HE, Hoffman VA, et al. A qualitative study of diverse experts' views about barriers and strategies to improve the diets and health of Supplemental Nutrition Assistance Program (SNAP) beneficiaries. *J Acad Nutr Diet*. 2013;113(1):70-6.
9. Institute of Medicine Food and Nutrition Board. Dietary Reference Intakes (DRIs): Recommended Dietary Allowances and Adequate Intakes. http://iom.edu/Activities/Nutrition/SummaryDRIs/~media/Files/Activity%20Files/Nutrition/DRIs/RDA%20and%20AIs_Vitamin%20and%20Elements.pdf. Accessed 8-12-13.
10. Porter DV, Congressional Research Service. Dietary Supplements: Purchase with Food Stamps. 2002. <http://crs.wikileaks-press.org/RL31452.pdf>. Accessed 8-12-13.

11. United States Department of Agriculture and United State Department of Health and Human Services. Dietary Guidelines for Americans 2010. <http://health.gov/dietaryguidelines/dga2010/dietaryguidelines2010.pdf>. Accessed 8-12-13.
12. United States Preventive Services Task Force. Recommendation Statement: Folic Acid for the Prevention of Neural Tube Defects. *Ann Intern Med.* 2009;150:626-31.
13. American College of Obstetricians and Gynecologists Committee on Practice Bulletins. Clinical management guidelines for obstetrician-gynecologists. Number 44, Neural Tube Defects. *Obstet Gynecol.* 2003;102:203–13
14. American Academy of Family Physicians. Summary of Recommendations for Clinical Preventive Services. October 2012. http://www.aafp.org/dam/AAFP/documents/patient_care/clinical_recommendations/October2012SCPS.pdf. Accessed 9-10-13.
15. American Academy of Neurology. AAN Summary of Evidence-based Guideline for Clinicians. Management Issues for Women With Epilepsy – Focus on Pregnancy. 2009. <http://www.aan.com/Guidelines/home/GetGuidelineContent/345>. Accessed 9-10-13.
16. Oliveira V, Gunderson C. for the United States Department of Agriculture Economic Research Service. March 2000. <http://naldc.nal.usda.gov/download/38274/PDF>. Accessed 8-12-13.
17. Institute of Medicine Food and Nutrition Board. Nutrition During Pregnancy, Chapter 13: Dietary Intake During Pregnancy. 1990. http://www.nap.edu/openbook.php?record_id=1451&page=258. Accessed 8-12-13.
18. Bendich A, Mallick R, Leader S. Potential health economic benefits of vitamin supplementation. *West J Med.* 1997;166(5):306-12.
19. United States Food and Drug Administration. Q&A on Dietary Supplements. <http://www.fda.gov/Food/DietarySupplements/QADietarySupplements/default.htm>. Accessed 8-12-13.
20. National Institutes of Health Office of Dietary Supplements. Dietary Supplement Label Database. http://ods.od.nih.gov/Research/Dietary_Supplement_Label_Database.aspx. Accessed 8-12-13.
21. Scholnik AA. Experts Debate Food Stamp Revision. *JAMA.* 1995;274(10):781-3.
22. MRC Vitamin Study Research Group. Prevention of neural tube defects: results of the Medical Research Council Vitamin Study. *Lancet.* 1991; 338(8760):131-137.
23. Czeizel AE, Dudas I. Prevention of the first occurrence of neural-tube defects by periconceptional vitamin supplementation. *N Engl J Med.* 1992; 327(26):1832-1835.
24. Smithells RW, Nevin NC, Seller MJ, Sheppard S, Harris R, Read AP et al. Further experience of vitamin supplementation for prevention of neural tube defect recurrences. *Lancet.* 1983; 1(8332):1027-1031.

25. Berry RJ, Li Z, Erickson JD, Li S, Moore CA, Wang H et al. Prevention of neural-tube defects with folic acid in China. China-U.S. Collaborative Project for Neural Tube Defect Prevention. *N Engl J Med.* 1999; 341(20):1485-1490.
26. Centers for Disease Control and Prevention. Recommendations for the use of folic acid to reduce the number of cases of spina bifida and other neural tube defects. *MMWR Recomm Rep.* 1992; 41(RR-14):1-7.
27. U.S. Food and Drug Administration. Food standards: amendment of standards of identity for enriched grain products to require addition of folic acid. Final Rule. 21 CFR Parts 136, 137, and 139. *Fed Reg.* 1996; 61:8781-8807.
28. Centers for Disease Control and Prevention. Spina bifida and anencephaly before and after folic acid mandate—United States, 1995–1996 and 1999–2000. *MMWR.* 2004;53:362–5.
29. National Birth Defects Prevention Network. Neural tube defect ascertainment project 2010. Available at http://www.nbdpn.org/current/resources/ntd_fa_info.html. Accessed 9-10-13.
30. Pfeiffer CM, Johnson CL, Jain RB, et al. Trends in blood folate and vitamin B-12 concentrations in the United States, 1988–2004. *Am J Clin Nutr.* 2007;86:718–27.
31. National Institutes of Health Office of Dietary Supplements. Dietary Supplement Fact Sheet: Folate. Updated December 2012. <http://ods.od.nih.gov/factsheets/Folate-HealthProfessional/>. Accessed 9-10-13.
32. Centers for Disease Control and Prevention. Cereals that Contain 100% of the Daily Value (DV) of Folic Acid. <http://www.cdc.gov/ncbddd/folicacid/cereals.html>. Accessed 9-10-13.
33. Kaiser Family Foundation. Medicaid and the Uninsured: Coverage of Preventive Services for Adults in Medicaid. September 2012. <http://kaiserfamilyfoundation.files.wordpress.com/2013/01/8359.pdf>. Accessed 9-10-13.
34. Klein JD; American Academy of Pediatrics Committee on Adolescence. Adolescent pregnancy: current trends and issues. *Pediatrics.* 2005;116:281-6.
35. Centers for Disease Control and Prevention. CDC Grand Rounds: Additional Opportunities to Prevent Neural Tube Defects with Folic Acid Fortification. *MMWR.* 2010;59:980-984.

Table. Percentage of Americans achieving adequate intake of selected vitamins and minerals.^{4,5}

				Children ages 1-4 yrs		
	Total persons	Food Stamp Program participants	Higher-income non-participants	Total children	WIC participants	Higher-income non-participants
Vitamin A	55.4	41.5	59.8	98.4	97.6	99.0
Vitamin C	68.8	60.8	70.3	99.7	99.6	99.6
Vitamin B ₆	87.2	77.8	89.3	100.0	99.9	100.0
Vitamin B ₁₂	96.0	92.5	97.0	100.0	100.0	100.0
Vitamin E	8.3	5.5	8.9	17.1	23.5	12.9
Folate	90.3	82.4	92.2	99.9	99.9	99.8
Niacin	98.3	94.9	98.8	99.7	99.7	99.7
Riboflavin	97.5	93.4	98.3	100.0	100.0	100.0
Thiamin	94.6	89.0	95.9	100.0	99.9	100.0
Iron	95.5	92.6	96.4	99.9	99.9	99.9
Magnesium	44.1	33.6	46.8	99.7	99.3	99.8
Phosphorous	94.6	89.9	95.4	99.8	99.7	99.9
Zinc	88.0	80.1	89.8	99.9	99.8	99.9
Calcium*	88.1	78.2	91.4	172.8	167.8	176.7
Potassium*	57.8	53.4	58.9	67.9	69.9	66.6

Values reflect the proportion with daily intake greater than Estimated Average Requirement (EAR), which is used to estimate the prevalence of adequate daily intakes.

*EARs not available. Values based on Adequate Intake (AI), which is the usual daily intake level of apparently healthy people who are maintaining a defined nutritional state or criterion of adequacy.

Appendix. Center for the Study of the Presidency and Congress (CSPC) Recommendations for Improving Nutrition among SNAP Participants, released in 2012.⁷

1. Protect Current Funding Levels for SNAP

A reduction in SNAP spending would jeopardize the health and well-being of the 1 out of 7 Americans for whom SNAP is a food lifeline—nearly half of whom are children. Cuts would hurt the working poor, strain already-stressed charitable safety net programs, and threaten the frail economies of low-income communities.

2. Collect Data on SNAP Purchases

Require the U.S. Department of Agriculture (USDA) to collect and make public data on SNAP product purchases to help improve participants' nutritional quality as well as to increase the program's effectiveness, efficiency, and transparency.

3. Identify a Set of Integrated Strategies that Would Help Align SNAP Purchases with the 2010 Dietary Guidelines for Americans

As a complement to other USDA nutrition assistance programs, especially WIC and the National School Meal Program, identify and test a set of transformative improvements for SNAP that would build program infrastructure to promote healthier nutrition for low-income Americans.

4. Focus Attention on Children's Health in SNAP

Half of all youth in the United States will have been enrolled in SNAP at some time before their 19th birthday. SNAP is a missed opportunity for improving children's nutrition and preventing obesity. Adequate nutrition is essential to their development, learning, and growth. Strengthen nutrition in SNAP to improve children's health by pilot-testing a defined food package for youth.

5. Use Incentives to Make Fruits, Vegetables, and Whole Grains the Easy Choice

Encourage public and private support for programs that incentivize the purchase and/or reduce the price of nutrient-dense foods in grocery stores and farmers' markets.

6. Establish Stronger Food Stocking Standards for SNAP Retailers

Strengthen stocking standards for a variety of healthy foods (e.g. fruits and vegetables) in order to be certified as a SNAP retailer.

7. Provide States with Flexibility to Evaluate Fresh Approaches to SNAP

The USDA should grant states greater flexibility for waivers to pilot test and evaluate program changes in SNAP that would improve nutrition (e.g. pilot projects to assess the feasibility of incentivizing the purchase of healthy foods and/or limiting the purchase of high-calorie, nutrient-poor products with SNAP benefits).

8. Promote Innovation in SNAP

Establish a Center for Health and Nutrition Innovation at the USDA, headed by a Chief Public Health Officer, to promote novel strategies and support pilot projects that enhance healthy nutrition for SNAP beneficiaries. Apply information technology and social media to promote healthy food choices.

9. Create a Partnership to Move SNAP towards Health

Establish a strong partnership between the USDA and the U.S. Department of Health and Human Services (as occurs with the *Dietary Guidelines for Americans*) to ensure that promoting health is central to the mission of this federal nutrition assistance program.

10. Establish a National Strategy of Fresh Approaches to Strengthen SNAP

Create a National Strategy for strengthening SNAP under the auspices of a Federal Interagency Taskforce. The plan should identify the actions needed to promote research, program policy change, technological innovation, and evaluation that will improve nutrition and prevent and reduce obesity and its health damaging consequences among SNAP beneficiaries.