

Published Online: February 4, 2013. doi:10.1001/jamainternmed.2013.2965

**Author Affiliations:** Department of Medicine, University of California, San Francisco, and the San Francisco Veterans Affairs Medical Center.

**Correspondence:** Dr Steinman, San Francisco Veterans Affairs Medical Center, PO Box 181G, 4150 Clement St, San Francisco, CA 94121 (mike.steinman@ucsf.edu).

**Conflict of Interest Disclosures:** None reported.

**Funding/Support:** This work was supported by National Institute on Aging and the American Federation for Aging Research grant 1K23-AG030999.

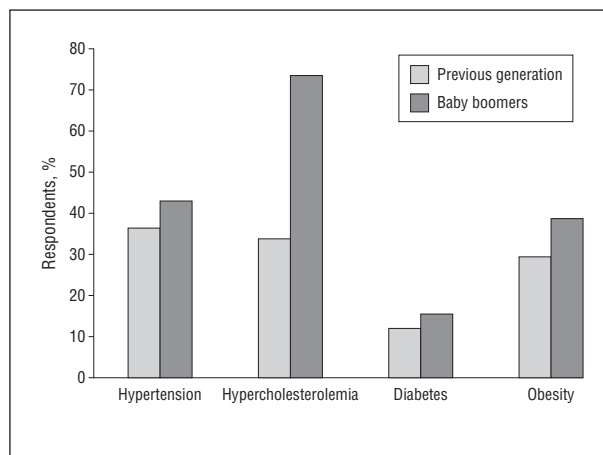
1. Steinman MA, Handler SM, Gurwitz JH, Schiff GD, Covinsky KE. Beyond the prescription: medication monitoring and adverse drug events in older adults. *J Am Geriatr Soc.* 2011;59(8):1513-1520.
2. Weingart SN, Gandhi TK, Seger AC, et al. Patient-reported medication symptoms in primary care. *Arch Intern Med.* 2005;165(2):234-240.
3. Sleath B, Roter D, Chewning B, Svarstad B. Asking questions about medication: analysis of physician-patient interactions and physician perceptions. *Med Care.* 1999;37(11):1169-1173.
4. Rochon PA, Gurwitz JH. Optimising drug treatment for elderly people: the prescribing cascade. *BMJ.* 1997;315(7115):1096-1099.
5. Forster AJ, Auger C; ISTOP ADE Investigators. Using information technology to improve the monitoring of outpatient prescribing. *JAMA Intern Med.* 2013;173(5):382-384.
6. Mistiaen P, Poot E. Telephone follow-up, initiated by a hospital-based health professional, for postdischarge problems in patients discharged from hospital to home. *Cochrane Database Syst Rev.* 2006;(4):CD004510.
7. Rennke S, Kesh S, Neeman N, Sehgal NL. Complementary telephone strategies to improve postdischarge communication. *Am J Med.* 2012;125(1):28-30.
8. Coleman EA, Parry C, Chalmers S, Min SJ. The care transitions intervention: results of a randomized controlled trial. *Arch Intern Med.* 2006;166(17):1822-1828.

## RESEARCH LETTERS

### The Status of Baby Boomers' Health in the United States: The Healthiest Generation?

From 1946 through 1964, 78 million children ("baby boomers") were born in the United States. In 2010, baby boomers made up 26.1% of the US population.<sup>1</sup> Medicine has improved significantly during baby boomers' lifetimes. Although these advantages have led to a progressively increasing life expectancy,<sup>2</sup> previous studies have shown mixed results regarding whether baby boomers are healthier than prior generations.<sup>3,4</sup> The present study examined the health status of aging baby boomers relative to the previous generation to provide a vitally important context for health workforce and policy planning in the coming years.

**Methods.** We analyzed data from the National Health and Nutrition Examination Survey (NHANES), including NHANES III (1988-1994) (for previous generation) and the NHANES for 2007 to 2010 (for baby boomers), focusing on respondents who were aged 46 to 64 years during either period. The 2 cohorts were compared with regard to health status, functional and work disability, healthy lifestyle characteristics, and presence of chronic disease. Further details of the methods can be found in the eAppendix (<http://www.jamainternalmed.com>).



**Figure.** Proportion of each cohort (baby boomers and previous generation at age 46-64 years) with hypertension, hypercholesterolemia, diabetes, or obesity in the 1988-1994 and 2007-2010 NHANES. The difference between cohorts was statistically significant for prevalence of hypertension ( $P < .001$ ), hypercholesterolemia ( $P < .001$ ), diabetes ( $P = .003$ ), and obesity ( $P < .001$ ). Obesity is defined as the proportion of individuals who exceeded a body mass index of 30 (calculated as weight in kilograms divided by height in meters squared). NHANES indicates National Health and Nutrition Examination Survey.

**Results.** The demographic characteristics of the cohorts were very similar except for the proportions in each racial/ethnic group, with greater proportions of non-Hispanic blacks (11.3% vs 9.4%) and Hispanics (9.8% vs 3.7%) in the 2007-2010 group compared with the 1988-1994 group ( $P < .001$ ). The mean (SD) ages were 54.1 (0.03) years in the 2007-2010 group and 54.5 (0.03) years in the 1988-1994 group; there was no difference in sex between the 2 cohorts (49.1% male [2007-2010 group] vs 47.5% male [1988-1994 group]). Overall health status was lower in baby boomers, with 13.2% reporting "excellent" health compared with 32% of individuals in the previous generation ( $P < .001$ ). Of the sampled baby boomers, compared with the previous generation, 6.9% vs 3.3% used a walking assist device ( $P < .001$ ), 13.8% vs 10.1% were limited in work ( $P = .003$ ), and 13.5% vs 8.8% had a functional limitation ( $P < .001$ ).

With regard to healthy lifestyle factors, obesity was more common among baby boomers (38.7% obese vs 29.4% [previous generation];  $P < .001$ ) (Figure), and regular exercise was significantly less frequent (35.0% vs 49.9% exercise  $> 12$  times per month;  $P < .001$ ); more than half of baby boomers reported no regular physical activity (52.2% vs 17.4%;  $P < .001$ ). Moderate drinking was higher in the baby boomer cohort compared with the previous generation (67.3% vs 37.2%;  $P < .001$ ). There were fewer current smokers in the baby boomer cohort than in the previous generation (21.3% vs 27.6%;  $P < .001$ ).

The percentage of individuals with hypertension (Figure) was more common among baby boomers than among individuals from the previous generation (43.0% vs 36.4%;  $P < .001$ ), as was the percentage of individuals who take medication for hypertension (35.4% vs 23.2%;  $P < .001$ ). Among baby boomers, hypercholesterolemia was more common (73.5% vs 33.8%;  $P < .001$ ).

[Figure]), and medication use for hypercholesterolemia was more than 10 times greater (25.9% vs 1.5%;  $P < .001$ ). Baby boomers were also more likely to have diabetes (15.5% vs 12.0%;  $P = .003$  [Figure]) and take medication for diabetes (11.3% vs 6.2%;  $P < .001$ ). The slight trend toward higher prevalence of cancer in baby boomers vs the previous generation was not significant (10.6% vs 9.5%;  $P = .25$ ). The frequency of emphysema decreased in the baby boomer generation (2.3%) relative to the previous generation (3.5%) ( $P = .03$ ). Baby boomers were also less likely to have had a myocardial infarction (3.6%) compared with the previous generation (5.3%) ( $P = .004$ ).

A logistic regression was conducted to control for changes in demographic characteristics (age, sex, race, and socioeconomic status) of the population between 1988-1994 and 2007-2010. The results indicated, after adjustment, that baby boomers remained more likely than the previous generation to have diabetes (odds ratio [OR], 1.46; 95% CI, 1.16-1.83); hypertension (OR, 1.38; 95% CI, 1.14-1.67); and hypercholesterolemia (OR, 5.94; 95% CI, 4.94-7.14).

**Comment.** Despite their longer life expectancy over previous generations, US baby boomers have higher rates of chronic disease, more disability, and lower self-rated health than members of the previous generation at the same age. On a positive note, baby boomers are less likely to smoke cigarettes and experience lower rates of emphysema and myocardial infarction than the previous generation.

The findings from the present study documenting poorer health status and increased rates of obesity, hypertension, diabetes, and hypercholesterolemia support an increased likelihood for continued rising health care costs and a need for increased numbers of health professionals as baby boomers age.<sup>5,6</sup> Given the link between positive healthy lifestyles and subsequent health in this age group,<sup>7</sup> the present study demonstrates a clear need for policies that expand efforts at prevention and healthy lifestyle promotion in the baby boomer generation.

Dana E. King, MD, MS  
Eric Matheson, MD, MS  
Svetlana Chirina, MPH  
Anoop Shankar, MD, PhD, MPH  
Jordan Broman-Fulks

**Published Online:** February 4, 2013. doi:10.1001/jamainternmed.2013.2006

**Author Affiliations:** Departments of Family Medicine (Dr King) and Epidemiology (Dr Shankar), West Virginia University School of Medicine, Morgantown; and Department of Family Medicine, Medical University of South Carolina, Charleston (Drs Matheson and Ms Chirina). Mr Broman-Fulks is a medical student at Medical University of South Carolina.

**Correspondence:** Dr King, Department of Family Medicine, West Virginia University School of Medicine, Robert C. Byrd Health Sciences Center, 1 Medical Center Dr, PO Box 9152, Morgantown, WV 26506 (kingdana@wvuhealthcare.com).

**Author Contributions:** *Study concept and design:* King and Chirina. *Analysis and interpretation of data:* King, Matheson, Chirina, Shankar, and Broman-Fulks. *Drafting of the manuscript:* King, Matheson, Chirina, and Broman-Fulks. *Critical revision of the manuscript for important intellectual content:* Chirina and Shankar. *Statistical analysis:* Chirina. *Study supervision:* King and Matheson.

**Conflict of Interest Disclosures:** None reported.

**Funding/Support:** This study was supported in part by grants 1R01ES021825-01 and 5R03ES018888-02 from the National Institutes of Health.

**Additional Contributions:** Alexander Brown, MA, assisted in the preparation of the manuscript.

**Online-Only Material:** The eAppendix is available at <http://www.jamainternalmed.com>.

1. US Bureau of the Census. Selected characteristics of Baby Boomers 42-60 years old in 2006. <http://www.census.gov/population/age/publications/files/2006babyboomers.pdf>. Accessed August 1, 2012.
2. Martin LG, Freedman VA, Schoeni RF, Andreski PM. Health and functioning among baby boomers approaching 60. *J Gerontol B Psychol Sci Soc Sci*. 2009;64(3):369-377.
3. Rice DP, Fineman N. Economic implications of increased longevity in the United States. *Annu Rev Public Health*. 2004;25:457-473.
4. Sturm R, Ringel JS, Andreyeva T. Increasing obesity rates and disability trends. *Health Aff (Millwood)*. 2004;23(2):199-205.
5. Olshansky SJ, Goldman DP, Zheng Y, Rowe JW. Aging in America in the twenty-first century: demographic forecasts from the MacArthur Foundation Research Network on an Aging Society. *Milbank Q*. 2009;87(4):842-862.
6. Ricketts TC. The health care workforce: will it be ready as the boomers age? a review of how we can know (or not know) the answer. *Annu Rev Public Health*. 2011;32:417-430.
7. King DE, Mainous AG III, Geesey ME. Turning back the clock: adopting a healthy lifestyle in middle age. *Am J Med*. 2007;120(7):598-603.

---

## LESS IS MORE

### Ascorbic Acid Supplements and Kidney Stone Incidence Among Men: A Prospective Study

U rinary oxalate is an important determinant of calcium oxalate kidney stone formation.<sup>1</sup> Vitamin C is excreted in urine both in its unmetabolized form and as oxalate; however, there remains considerable uncertainty over the kidney stone risk that may be associated with ascorbic acid supplement use.<sup>2</sup>

We examined whether ascorbic acid supplements (approximately 1000 mg) were associated with kidney stones in a population-based, prospective cohort of men.

*See also Invited Commentary at end of letter and page 355*

**Methods.** The Cohort of Swedish Men (COSM) has been described elsewhere.<sup>3</sup> In brief, 48 850 men, aged 45 to 79 years at baseline, were recruited in 1997 (response rate, 49%). Detailed diet and lifestyle data were collected at baseline using a self-administered questionnaire. Based on validated questions, men reported their use of ascorbic acid (sensitivity=67% and specificity=93%)<sup>4</sup> and of 20 other supplement types. We excluded those with incorrect national registration numbers, implausible energy intake, pre-