Supplementary Online Content


eAppendix. Methods

This supplementary material has been provided by the authors to give readers additional information about their work.
Methods:

We analyzed data from the National Health and Nutrition Examination survey (NHANES) including NHANES III (1988-1994) and the NHANES for 2007-2010. These publicly available data were exempted from review by the Institutional Review Board. Analysis was restricted to respondents who were 46-64 years old during the period of NHANES III as well as during NHANES 2007-2010.

Demographic factors including age, gender, race, and socioeconomic status (income, education level attained) were collected. Race was categorized as: non-Hispanic White, non-Hispanic Black, Hispanic, and Other.

Body mass index was obtained and categorized based on the Centers for Disease Control and Prevention breakdown of: <18.5 (underweight), ≥18.5 and ≤24.9 (normal weight), ≥25 and ≤29.9 (overweight), and ≥30 (obese). Smoking status was determined based on the individual’s response to a question regarding whether or not they currently smoke.

We evaluated alcohol consumption based on the following variables: 1) whether the respondent had at least 12 drinks in the past year, 2) the number of days in a week, month, or year the person drank alcohol, and 3) the number of drinks per day. The results were categorized into average number of drinks per week and into three groups for analysis purposes: Non-drinker: 0 drinks/week; Healthy drinker: >0 but ≤14 drinks/week for males and >0 but ≤7 drinks/week for females; Excessive drinker: >14 drinks/week for males and >7 drinks/week for females.

In regard to physical activity level, in the NHANES III it was ascertained by combining the monthly frequency of recreational activities with an intensity level of 4 or greater. For NHANES 2007-2010, only moderate and vigorous recreational activities were counted towards physical activity, and the number of days in a typical week of performing either one was converted into a monthly frequency by multiplying by 4.3. For both time periods, exercise was categorized into 0 times per month, 1-12 times per month, or greater than 12 times per month (healthy level).

Health Status

NHANES III relied upon a physician’s impression of health status, classified as excellent, very good, good, fair, or poor. Alternately, NHANES 2007-2010 asked a similar question, but instead asked respondents to self-rate their health status.

Functional Limitations

Both NHANES III and NHANES 2007-2010 assessed functional limitations by combining multiple questions that related to impairments and activity limitations.
Examples include difficulty with walking a quarter mile, climbing 10 steps, stooping, crouching, or kneeling, lifting and carrying 10 pounds, doing chores around the house, preparing meals, dressing self, and using a device for walking. If respondents’ answers to any of the above questions were that they have “much difficulty” completing or are “unable to do” any of the above activities, this was considered to indicate functional limitations. Another question was included about whether impairment limited the type of work the respondent could complete.

Medical Conditions

Some medical conditions NHANES III and NHANES 2007-2010 evaluated included diabetes, hypertension, hypercholesterolemia, cancer, emphysema, and heart attack. The patient was classified as having diabetes if he or she answered “yes” to any of the following: “ever being told by a doctor that you have diabetes or high sugar,” “now taking insulin,” “now taking diabetes pills,” or “having a glycohemoglobin of greater than or equal to 6.5.” Also, prescription drugs for diabetes were evaluated and included if a respondent was taking medication for diabetes not mentioned in any of the previous responses. A similar approach and similar questions were used for determining the presence of hypertension and hypercholesterolemia. For cancer, emphysema, and heart attack, a response to the question of “whether a doctor has ever told you that you have one of the conditions” was used to indicate the presence of the condition. (NHANES III and NHANES 2007-2010).

Because NHANES III and NHANES 2007-2010 asked food consumption questions in very different ways, we did not feel that it would be scientifically reasonable to create comparable categories for dietary component consumption per day.

Statistical Analysis

Data were analyzed using SAS (version 9.2, Cary, NC) and SAS-callable SUDAAN (RTI International, Raleigh, NC). All estimates for NHANES III were weighted using 6 year weights from the MEC examination weights provided by NCHS. For NHANES 2007-2010 analysis, the estimates were weighted using 4 year MEC examination weights. A chi-square analysis was performed to determine the presence of any difference between the two NHANES time eras for the variables listed above. A logistic regression was conducted to examine the association between birth cohort and prevalence of chronic disease, to control for changes in demographic characteristics (age, gender, race, and socioeconomic status) of the population between 1988-1994 and 2007-2010.