

Sample Health Literacy Assessment Question

Respondents who participated in the 2003 assessment were asked to complete prose, document, and quantitative literacy tasks of varying levels of difficulty. The sample question on the following page illustrates the type of task used to measure the health literacy of America's adults. This question was originally developed for the 1992 survey and reused in 2003.

Consistent with the design of the assessment, the sample question appears before the text needed to answer the question. The percentage of respondents who answered the question correctly is reported, as well as the percentage of correct responses for each of the four health literacy assessment levels.

More information about the sample assessment questions can be found on the Internet at <http://nces.ed.gov/naal>.

Prose and Health Literacy Question

Refer to the article on the next page to answer the following question.

According to the brochure, why is it difficult for people to know if they have high blood pressure?

Correct answer

Any statement such as the following:
Symptoms are not usually present
High blood pressure is silent

Percentage of adults who answered the question correctly, health literacy scale: 2003

All Adults	<i>Below Basic</i>	<i>Basic</i>	<i>Intermediate</i>	<i>Proficient</i>
74	10	71	94	100

NOTE: Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from these data.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

TOO MANY BLACK ADULTS DIE FROM THE EFFECTS OF HIGH BLOOD PRESSURE

DID YOU KNOW?

More than one out of every four Black adults has high blood pressure, according to a two-year survey by Public Health Service in the 1960's. Other studies show as many as one out of three Black adults has high blood pressure.

High blood pressure is the most common chronic disease treated by practitioners in the Black community.

More Black people die as a result of high blood pressure than any other disease.

For every Black person who dies of sickle-cell anemia, at least 100 others die from the effects of high blood pressure.

The rate of death from the effects of high blood pressure for Black people is nearly one and one-half times the rate for White people.

High blood pressure, along with cigarette smoking, contributes greatly to the apparent increased number of heart attacks among Black adults.

If high blood pressure is controlled, strokes, heart attacks and kidney disease can be substantially reduced.

YES, HIGH BLOOD PRESSURE CAN BE TREATED... AND CONTROLLED.

WHAT YOU CAN DO

Have your blood pressure checked regularly

Unfortunately, high blood pressure is a silent killer and crippler. At least half of the people who have high blood pressure don't know it because symptoms usually are not present. The only way you can be sure is to have the doctor check your blood pressure. You should have your blood pressure checked at least once a year, especially if: (1) you are Black, (2) if you are over 40, (3) if members of your family or close relatives have had high blood pressure or the complications of high blood pressure (stroke, heart attack, or kidney disease), or (4) if you have frequent headaches, dizziness, or other symptoms that may occasionally be related to high blood pressure.

Follow your doctor's instructions

High blood pressure can't be cured, but it can be kept under control. Control means keeping your blood pressure as close to normal as possible. That's very important to you — it can prevent a crippling stroke or other serious illness in the future.

The doctor will find a way to control your blood pressure that's most comfortable for you. Then it will be up to you — to take the medicine and follow the prescribed diet, to follow the instructions carefully and to come back regularly for checkups.

Yes, high blood pressure can be controlled, but only if *you* cooperate fully with your doctor.

Definitions of All Subpopulations and Background Variables Reported

For the exact wording of background questions, see <http://nces.ed.gov/naal>.

Chapter 2

Total Population

The 2003 National Assessment of Adult Literacy included two samples: (1) adults ages 16 and older living in households and (2) inmates ages 16 and older in federal and state prisons. The household sample also included adults in six states that chose to participate in a concurrent State Assessment of Adult Literacy: Kentucky, Maryland, Massachusetts, Missouri, Oklahoma, and New York. Each sample was weighted to represent its share of the total population of the United States (99 percent for the household sample and 1 percent for the prison sample). The household and prison samples were combined to create a nationally representative sample of America's adults. Household data collection was conducted from March 2003 through February 2004; prison data collection was conducted from March through July 2004.

Gender

Interviewers recorded the gender of each respondent.

Race and Ethnicity

In 2003, all respondents were asked two or three questions about their race and ethnicity. The first question asked them to indicate whether they were Hispanic or Latino.

If a respondent answered that he or she was Hispanic or Latino, the respondent was asked to choose one or more of the following groups to describe his or her Hispanic origin:

- Mexican, Mexican American, or Chicano
- Puerto Rican or Puerto Rican American
- Cuban or Cuban American
- Central or South American
- Other Hispanic or Latino background

Respondents who identified more than one of the groups to describe their Hispanic origin were classified as “Other Hispanic or Latino background.”

Then, all respondents, including those who indicated they were Hispanic or Latino, were asked to choose one or more of the following groups to describe themselves:

- White
- Black or African American
- Asian
- American Indian or Alaska Native
- Native Hawaiian or other Pacific Islander

Individuals who responded “yes” to the first question were coded as Hispanic, regardless of their answer to the second question. Individuals who identified more than one group on the second question were coded as Multiracial. Respondents of Native

Hawaiian or Pacific Islander origin were grouped with those of Asian origin. The White, Black, and Hispanic groups are reported separately. The interviewer recorded the race/ethnicity of respondents who refused to answer the question.

Age

All respondents were asked to report their birth dates, and this information was used to calculate their age. Age groups reported are 16 to 18, 19 to 24, 25 to 39, 40 to 49, 50 to 64, and 65 and older. Age groups were selected to correspond to key life stages of many adults:

- 16-18: Completion of secondary education
- 19-24: College or job training
- 25-39: Early career
- 40-49: Mid-career
- 50-64: Late career
- 65 and older: Retirement

Highest Level of Educational Attainment

All respondents were asked to indicate the highest level of education they had completed. The following options were provided:

- Still in high school
- Less than high school
- Some high school
- GED or high school equivalency
- High school graduate
- Vocational, trade, or business school after high school
- College: less than 2 years
- College: Associate's degree (A.A.)
- College: 2 or more years, no degree
- College graduate (B.A. or B.S.)

- Postgraduate, no degree
- Postgraduate degree (M.S., M.A., Ph.D., M.D., etc.)

Respondents who reported less than high school or some high school were asked how many years of education they completed. For certain analyses, some of these groups were collapsed. For example, respondents who reported some postgraduate study but no degree were generally combined with those who had completed a postgraduate degree.

Chapter 3

Self-Assessment of Overall Health

Respondents were asked how, in general, they would rate their overall health. They were given the following response options: excellent, very good, good, fair, poor.

Health Insurance

Respondents were asked whether they received the following types of health insurance: health insurance through your work (school) or a family member's work, Medicare, health insurance you or someone else in your family purchased directly from an insurance

company or other organization that is not related to past or current employment, health insurance provided as part of military service, Medicaid. Respondents could indicate that they received multiple types of health insurance. Adults who received more than one type of health insurance were included in multiple categories for the analyses in this report. Adults in prisons were not asked this question and they are not included in the analyses.

Sources of Information About Health Issues

Household respondents were asked how much information about health issues, such as diet, exercise, disease prevention, or a specific disease or health condition, they got from newspapers, magazines, the Internet, radio and television, books or brochures; family members, friends, or coworkers; or talking to doctors, nurses, therapists, or psychologists. They were given the following response options: a lot, some, a little, none. Prison respondents were asked the same question, but instead of "family members, friends, or coworkers," they were asked about "family members, friends, other inmates, or staff." Prison respondents were not asked about the Internet because most prison inmates do not have access to the Internet.

Technical Notes

This appendix describes the sampling, data collection, weighting and variance estimation, scaling, and statistical testing procedures used to collect and analyze the data for the 2003 National Assessment of Adult Literacy (NAAL). Household data collection was conducted from March 2003 through February 2004; prison data collection was conducted from March through July 2004.

Sampling

The 2003 National Assessment of Adult Literacy included two samples: (1) adults ages 16 and older living in households (99 percent of the sample weighted) and (2) inmates ages 16 and older in federal and state prisons (1 percent of the sample weighted). Each sample was weighted to represent its share of the total population of the United States, and the samples were combined for reporting.

Household Sample

The 2003 National Assessment of Adult Literacy household sample included a nationally representative probability sample of 35,365 households. The household sample was selected on the basis of a four-stage, stratified area sample: (1) primary sampling units (PSUs) consisting of counties or groups of contiguous counties; (2) secondary sampling units (referred to as segments) consisting of area blocks; (3) housing units containing households; and (4) eligible persons within households. Person-level data were collected through a screener,

a background questionnaire, the literacy assessment, and the oral module. Of the 35,365 sampled households, 4,671 were either vacant or not a dwelling unit, resulting in a sample of 30,694 households.¹ A total of 25,123 households completed the screener, which was used to select survey respondents. The final screener response rate was 81.2 percent weighted.

On the basis of the screener data, 23,732 respondents ages 16 and older were selected to complete the background questionnaire and the assessment; 18,186 actually completed the background questionnaire. Of the 5,546 respondents who did not complete the background questionnaire, 355 were unable to do so because of a literacy-related barrier, either the inability to communicate in English or Spanish (the two languages in which the background questionnaire was administered) or a mental disability.

The final response rate for the background questionnaire, which included respondents who completed the background questionnaire and respondents who were unable to complete the background questionnaire because of language problems or a mental disability, was 76.6 percent weighted. Of the 18,186 adults ages 16 and older who completed the background questionnaire, 17,178 completed at least one question on each of the three scales—prose, document, and quantitative—measured in the adult literacy assessment. An additional 149 were unable to answer at least one question on each of the three scales for literacy-related reasons.² The final response rate for the literacy assessment, which included

respondents who answered at least one question on each scale plus the 149 respondents who were unable to do so because of language problems or a mental disability, was 96.6 percent weighted.

Cases were considered complete if the respondent completed the background questionnaire and at least one question on each of the three scales or if the respondent was unable to answer any questions because of language issues (an inability to communicate in English or Spanish) or a mental disability. All other cases that did not include a complete screener, a background questionnaire, and responses to at least one question on each of the three literacy scales were considered incomplete or missing. Before imputation, the overall response rate for the household sample was 60.1 percent weighted.

For respondents who did not complete any literacy tasks on any scale, no information is available about their performance on the literacy scale they were missing. Completely omitting these individuals from the analyses would have resulted in unknown biases in estimates of the literacy skills of the national population because refusals cannot be assumed to have occurred randomly. For 859 respondents³ who answered the background questionnaire but refused to complete the assessment for reasons other than language issues or a mental disability, regression-based imputation procedures were applied to impute responses to one assessment item on each scale by using the NAAL background data on age, gender, race/ethnicity, education level, country of birth, census region, and metropolitan statistical area status.

On the prose and quantitative scales, a response was imputed for the easiest task on each scale. On the

¹To increase the number of Black and Hispanic adults in the NAAL sample, segments with moderate to high concentrations of Black and Hispanic adults were given a higher selection probability. Segments in which Blacks or Hispanics accounted for 25 percent or more of the population were oversampled at a rate up to three times that of the remainder of the segments.

² Of the 149 respondents who were unable to answer at least one question on each of the three scales for literacy-related reasons, 65 respondents answered at least one question on one scale. The remaining 84 respondents did not answer any questions on any scale.

³ Of the 18,186 household respondents who completed the background questionnaire, 17,178 completed at least one question on each of the three scales and 149 were unable to answer at least one question on one or more of the scales for literacy-related reasons. The remaining 859 respondents completed the background questionnaire but refused to complete the assessment.

document scale, a response was imputed for the second easiest task because that task was also included on the health literacy scale. In each of the logistic regression models, the estimated regression coefficients were used to predict missing values of the item to be imputed. For each nonrespondent, the probability of answering the item correctly was computed and then compared with a randomly generated number between 0 and 1. If the probability of getting a correct answer was greater than the random number, the imputed value for the item was 1 (correct). Otherwise it was 0 (wrong). In addition, a wrong response on each scale was imputed for 65 respondents who started to answer the assessment but were unable to answer at least one question on each scale because of language issues or a mental disability.⁴

The final household reporting sample—including the imputed cases—consisted of 18,102 respondents. These 18,102 respondents are the 17,178 respondents who completed the background questionnaire and the assessment, plus the 859 respondents who completed the background questionnaire but refused to do the assessment for non-literacy-related reasons and have imputed responses to one item on each scale, plus the 65 respondents who started to answer the assessment items but were unable to answer at least one question on each scale because of language issues or a mental disability. After including the cases for which responses to the assessment questions were imputed, the weighted response rate for the household sample was 62.1 percent (18,102 cases with complete or imputed data and an additional 439 cases that had no assessment data because of language issues or a mental disability).⁵

⁴ For a more detailed discussion of imputation see Little and Rubin (2002).

⁵ The 439 cases that had no assessment data because of language issues or a mental disability include the 355 respondents who were unable to complete the background questionnaire for one of these reasons, plus the 84 respondents who did not answer any questions on any scale because of language issues or a mental disability.

The household sample was subject to unit nonresponse from the screener, background questionnaire, literacy assessment, and oral module and to item nonresponse to background questionnaire items. Although all background questionnaire items had response rates of more than 85 percent, two stages of data collection—the screener and the background questionnaire—had unit response rates below 85 percent and thus required an analysis of the potential for nonresponse bias.

Table C-1 presents a summary of the household response rate.

Table C-1. Weighted and unweighted household response rate, by survey component: 2003

Survey component	Weighted Response rate (percent)	Unweighted Response rate (percent)
Screener	81.2	81.8
Background questionnaire	76.6	78.1
Literacy assessment	96.6	97.2
Overall response rate before imputation	60.1	62.1
Overall response rate after imputation	62.1	63.9

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Prison Sample

The 2003 assessment also included a nationally representative probability sample of inmates in federal and state prisons. A total of 114 prisons were selected to participate in the adult literacy assessment. Of these 114 prisons, 107 agreed to participate, 3 refused, and 4 were ineligible. The final prison response rate was 97.3 percent weighted. From among the inmates in those prisons, 1,298 inmates ages 16 and older were randomly selected to complete the background questionnaire and assessment. Of those 1,298 selected inmates, 1,161 completed the background questionnaire. Of the 137 who did not complete the background questionnaire, 12 were unable to do so because of a literacy-related barrier, either the inability

ity to communicate in English or Spanish (the two languages in which the background questionnaire was administered) or a mental disability.

The final response rate for the prison background questionnaire, which included respondents who completed the background questionnaire and respondents who were unable to complete the background questionnaire because of language problems or a mental disability, was 90.6 percent weighted. Of the 1,161 inmates who completed the background questionnaire, 1,125 completed at least one question on each of the three scales—prose, document, and quantitative—measured in the adult literacy assessment. An additional eight were unable to answer at least one question on each of the three scales for literacy-related reasons. The final response rate for the literacy assessment, which included respondents who answered at least one question on each scale or were unable to do so because of language problems or a mental disability, was 98.9 percent weighted.

The same definition of a complete case used for the household sample was also used for the prison sample, and the same rules were followed for imputation. Before imputation, the final response rate for the prison sample was 87.2 percent weighted.

One response on each scale was imputed on the basis of background characteristics for 28 inmates who completed the background questionnaire but had incomplete or missing assessments for reasons that were not literacy related. The statistical imputation procedures were the same as for the household sample. The background characteristics used for the missing data imputation for the prison sample were prison security level, region of country/prison type, age, gender, educational attainment, country of birth, race/ethnicity, and marital status. A wrong response on each scale was imputed for the three inmates who started to answer the assessment but were unable to answer at least one question on each scale because of

language issues or a mental disability. The final prison reporting sample—including the imputed cases—consisted of 1,156 respondents. After the cases for which responses to the assessment questions were imputed were included, the weighted response rate for the prison sample was 88.3 percent (1,156 cases with complete or imputed data and an additional 17 cases that had no assessment data because of language issues or a mental disability).

Table C-2 presents a summary of the prison response rate.

Table C-2. Weighted and unweighted prison response rate, by survey component: 2003

Survey component	Weighted Response rate (percent)	Unweighted Response rate (percent)
Prison	97.3	97.3
Background questionnaire	90.6	90.4
Literacy assessment	98.9	98.8
Overall response rate before imputation	87.2	86.8
Overall response rate after imputation	88.3	87.9

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Nonresponse Bias

NCES statistical standards require a nonresponse bias analysis when the unit response rate for a sample is less than 85 percent. The nonresponse bias analysis of the household sample revealed differences in the background characteristics of respondents who participated in the assessment compared with those who refused.

In bivariate unit-level analyses at the screener and background questionnaire stages, estimated percentages for respondents were compared with those for the total eligible sample to identify any potential bias owing to nonresponse. Although some statistically significant differences existed, the potential for bias was small because the absolute difference between estimated percentages was less than 2 percent for all domains considered. Multivariate analyses were con-

ducted to further explore the potential for nonresponse bias by identifying the domains with the most differential response rates. These analyses revealed that the lowest response rates for the screener were among dwelling units in segments with high median income, small average household size, and a large proportion of renters. The lowest response rates for the background questionnaire were among males ages 30 and older in segments with high median income. However, the variables used to define these areas and other pockets with low response rates were used in weighting adjustments. The analysis showed that weighting adjustments was highly effective in reducing the bias. The general conclusion was that the potential amount of nonresponse bias attributable to unit nonresponse at the screener and background questionnaire stages was likely to be negligible.

Data Collection

Household interviews took place in respondents' homes; prison interviews generally took place in a classroom or library in the prison. Whenever possible, interviewers administered the background questionnaire and assessment in a private setting. Unless there were security concerns, a guard was not present in the room when inmates were interviewed.

Interviewers used a computer-assisted personal interviewing (CAPI) system programmed into laptop computers. The interviewers read the background questions from the computer screen and entered all responses directly into the computer. Skip patterns and follow-up probes for contradictory or out-of-range responses were programmed into the computer.

After completing the background questionnaire, respondents were handed a booklet with the assessment questions. The interviewers followed a script that introduced the assessment booklet and guided the respondent through the assessment.

Each assessment booklet began with the same seven questions. After the respondent completed those questions, the interviewer asked the respondent for the book and used an algorithm to determine on the basis of the responses to the first seven questions whether the respondent should continue in the main assessment or be placed in the Adult Literacy Supplemental Assessment (ALSA). Three percent of adults weighted (5 percent unweighted) were placed in the ALSA.

ALSA was a performance-based assessment that allowed adults with marginal literacy to demonstrate what they could and could not do when asked to make sense of various forms of print. The ALSA started with simple identification tasks and sight words and moved to connected text, using authentic, highly contextualized material commonly found at home or in the community. Respondents placed in the ALSA are included in the NAAL sample based on their responses to the seven questions. Because the ALSA respondents got most or all of the seven questions at the beginning of the assessment wrong, they would have been classified into the *Below Basic* level on the health scale.

A respondent who continued in the main assessment was given back the assessment booklet, and the interviewer asked the respondent to complete the tasks in the booklet and guided the respondent through the tasks. The main assessment consisted of 12 blocks of tasks with approximately 11 questions in each block, but each assessment booklet included only 3 blocks of questions. The blocks were spiraled so that across the 26 different configurations of the assessment booklet, each block was paired with every other block and each block appeared in each of the three positions (first, middle, last) in a booklet.

For ALSA interviews, the interviewer read the ALSA script from a printed booklet and classified the respondent's answers into the response categories in

the printed booklet. ALSA respondents were handed the materials they were asked to read

Following the main assessment or ALSA, all respondents were administered the oral fluency assessment (not discussed in this report). Respondents were handed a booklet with passages, number lists, letter lists, word lists, and pseudoword lists to read orally. Respondents read into a microphone that recorded their responses on the laptop computer.

Weighting and Variance Estimation

A complex sample design was used to select assessment respondents. The properties of a sample selected through a complex design could be very different from those of a simple random sample in which every individual in the target population has an equal chance of selection and in which the observations from different sampled individuals can be considered to be statistically independent of one another. Therefore, the properties of the sample for the complex data collection design were taken into account during the analysis of the data. Standard errors calculated as though the data had been collected from a simple random sample would generally underestimate sampling errors. One way of addressing the properties of the sample design was by using sampling weights to account for the fact that the probabilities of selection were not identical for all respondents. All population and subpopulation characteristics based on the NAAL data used sampling weights in their estimation.

The statistics presented in this report are estimates of group and subgroup performance based on a sample of respondents, rather than the values that could be calculated if every person in the nation answered every question on the instrument. It is therefore important to have measures of the degree of uncertainty of the estimates. Accordingly, in addition to providing estimates of percentages of respondents

and their average scale score, this report provides information about the uncertainty of each statistic.

Because the assessment used clustered sampling, conventional formulas for estimating sampling variability that assume simple random sampling and hence independence of observations are inappropriate. For this reason, the NAAL assessment uses a Taylor series procedure based on the *sandwich estimator* to estimate standard errors (Binder 1983).

Scaling

As discussed above, each respondent to the NAAL received a booklet that included 3 of the 13 assessments blocks. Because each respondent did not answer all of the NAAL items, item response theory (IRT) methods were used to estimate average scores on the health, prose, document, and quantitative literacy scales; a simple average percent correct would not allow for reporting results that are comparable for all respondents. IRT models the probability of answering a question correctly as a mathematical function of proficiency or skill. The main purpose of IRT analysis is to provide a common scale on which performance on some latent trait can be compared across groups, such as those defined by sex, race/ethnicity, or place of birth (Hambleton and Swaminathan 1985).

IRT models assume that an examinee's performance on each item reflects characteristics of the item and characteristics of the examinee. All models assume that all items on a scale measure a common latent ability or proficiency dimension (e.g., prose literacy) and that the probability of a correct response on an item is uncorrelated with the probability of a correct response on another item given fixed values of the latent trait. Items are measured in terms of their difficulty as well as their ability to discriminate among examinees of varying ability.

The assessment used two types of IRT models to estimate scale scores. The two-parameter logistic (2PL) model, which was used for dichotomous items (that is, items that are scored either right or wrong) takes the form

$$P(x_{ij}=1 | \theta_j, a_i, b_i) = \frac{1}{1 + e^{-1.7a_i(\theta_j - b_i)}},$$

where x_{ij} is the response of person j to item i , θ_j is the proficiency of person j , a_i is the *slope* or *discrimination* parameter for item i , and b_i is the *location* or *difficulty* parameter for item i .

For the partial credit items, the graded response logistic (GRL) model was used. This model follows the 2PL model for the probability of a score of 1 (at least partially correct):

$$P(x_{ij} \geq 1 | \theta_j, a_i, b_{i1}) = \frac{1}{1 + e^{-1.7a_i(\theta_j - b_{i1})}}.$$

It also follows the 2PL model for the probability of a score of 2 (completely correct):

$$P(x_{ij}=2 | \theta_j, a_i, b_{i2}) = \frac{1}{1 + e^{-1.7a_i(\theta_j - b_{i2})}}.$$

In the equations above, b_{i1} and b_{i2} are the step parameters corresponding to the response categories of partially or fully correct.

The scale indeterminacy was solved by setting an origin and unit size to the reported scale means and

standard deviations from the 1992 assessment.⁶ Linear transformation was performed to transform the original scale metric to the final reporting metric.

Levels were set and items were mapped to scales based on the scores corresponding to a 67 percent success rate on the tasks.

Statistical Testing

The statistical comparisons in this report were based on the t statistic. Statistical significance was determined by calculating a t value for the difference between a pair of means, or proportions, and comparing this value with published tables of values at a certain level of significance, called alpha level. The alpha level is an a priori statement of the probability of inferring that a difference exists when, in fact, it does not. The alpha level used in this report is .05, based on a two-tailed test. The formula used to compute the t statistic was as follows:

$$t = \frac{(P_1 - P_2)}{\sqrt{(SE_1^2 + SE_2^2)}},$$

where P_1 and P_2 are the estimates to be compared and SE_1 and SE_2 are their corresponding standard errors.

⁶ The means for the 1992 assessment were 276 for prose, 271 for document, and 275 for quantitative. The standard deviations for the 1992 assessment were 61 for prose, 61 for document, and 66 for quantitative. The standard deviations for the 2003 assessment were 59 for prose, 57 for document, and 61 for quantitative.



Standard Errors for Tables and Figures

Table D2-1. Estimates and standard errors for Figure 2-1. Percentage of adults in each health literacy level: 2003

Literacy level	Percentage
Below Basic	14 (0.5)
Basic	22 (0.4)
Intermediate	53 (0.6)
Proficient	12 (0.5)

NOTE: Detail may not sum to totals because of rounding. Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table D2-2. Estimates and standard errors for Figure 2-2. Average health literacy scores of adults, by gender: 2003

Gender	Average
Men	242 (1.3)
Women	248 (1.5)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table D2-3. Estimates and standard errors for Figure 2-3. Percentage of adults in each health literacy level, by gender: 2003

Gender	Below Basic	Basic	Intermediate	Proficient
Men	16 (0.6)	22 (0.4)	51 (0.7)	11 (0.5)
Women	12 (0.7)	21 (0.6)	55 (0.8)	12 (0.7)

NOTE: Detail may not sum to totals because of rounding. Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table D2-4. Estimates and standard errors for Figure 2-4. Average health literacy scores of adults, by race/ethnicity: 2003

Race/ethnicity	Average
White	256 (1.4)
Black	216 (2.1)
Hispanic	197 (3.3)
Asian/Pacific Islander	255 (5.6)
American Indian/Alaska Native	227 (10.3)
Multiracial	238 (3.9)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. All adults of Hispanic origin are classified as Hispanic, regardless of race. The Asian/Pacific Islander category includes Native Hawaiians.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table D2-5. Estimates and standard errors for Figure 2-5. Percentage of adults in each health literacy level, by race/ethnicity: 2003

Race/ethnicity	Below Basic	Basic	Intermediate	Proficient
White	9 (0.6)	19 (0.7)	58 (0.9)	14 (0.9)
Black	24 (2.1)	34 (1.5)	41 (2.3)	2 (0.5)
Hispanic	41 (1.7)	25 (0.6)	31 (1.2)	4 (0.4)
Asian/Pacific Islander	13 (2.1)	18 (1.6)	52 (2.4)	18 (2.5)
American Indian/Alaska Native	25 (5.4)	23 (2.8)	45 (5.2)	7 (2.9)
Multiracial	9 (3.7)	28 (4.7)	59 (6.1)	3 (2.3)

NOTE: Detail may not sum to totals because of rounding. Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. All adults of Hispanic origin are classified as Hispanic, regardless of race. The Asian/Pacific Islander category includes Native Hawaiians.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table D2-6. Estimates and standard errors for Table 2-1. Average health literacy scores of adults, by language spoken before starting school: 2003

Language spoken before starting school	Average
English only	251 (1.2)
English and Spanish	232 (3.6)
English and other	244 (4.3)
Spanish	174 (4.2)
Other language	229 (6.4)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. The English and Spanish category includes adults who spoke languages in addition to both English and Spanish. The Spanish category includes adults who spoke Spanish and additional non-English languages.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table D2-7. Estimates and standard errors for Figure 2-6. Average health literacy scores of adults, by age: 2003

Age	Average
16–18	244 (3.6)
19–24	249 (2.5)
25–39	256 (1.6)
40–49	249 (1.9)
50–64	246 (2.1)
65+	214 (2.0)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table D2-8. Estimates and standard errors for Figure 2-7. Percentage of adults in each health literacy level, by age: 2003

Age	Below Basic	Basic	Intermediate	Proficient
16–18	11 (2.0)	23 (2.3)	58 (2.9)	8 (2.0)
19–24	10 (1.2)	21 (1.2)	58 (1.7)	11 (1.4)
25–39	10 (0.6)	18 (0.6)	55 (0.9)	16 (0.9)
40–49	11 (0.9)	21 (0.9)	56 (1.2)	12 (1.0)
50–64	13 (0.9)	21 (0.7)	53 (1.1)	12 (0.9)
65+	29 (1.4)	30 (0.8)	38 (1.3)	3 (0.5)

NOTE: Detail may not sum to totals because of rounding. Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table D2-9. Estimates and standard errors for Figure 2-8. Average health literacy scores of adults, by highest educational attainment: 2003

Educational attainment	Average
Still in high school	241 (4.6)
Less than/some high school	184 (2.6)
GED/high school equivalency	232 (2.8)
High school graduate	232 (1.8)
Vocational/trade/business school	241 (2.9)
Some college	253 (1.6)
Associate's/2-year degree	264 (2.3)
College graduate	280 (2.2)
Graduate studies/degree	287 (2.4)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table D2-10. Estimates and standard errors for Table 2-2. Average health literacy scores of adults, by poverty threshold: 2003

Poverty threshold	Average
Below poverty threshold	205 (2.6)
100–125% of poverty threshold	222 (3.0)
126–150% of poverty threshold	224 (3.6)
151–175% of poverty threshold	231 (3.1)
Above 175% of poverty threshold	261 (1.2)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. Poverty thresholds are determined by the U.S. Census Bureau and are based on family income, family size, and the ages of family members. Because adults provided their income in ranges rather than by precise dollar figures, adults could not be exactly matched to a federal poverty category. The categories shown in this table represent the best matches possible based on the categorical data.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table D2-11. Estimates and standard errors for Figure 2-9. Percentage of adults in each health literacy level, by highest educational attainment: 2003

Educational attainment	Below Basic	Basic	Intermediate	Proficient
Still in high school	13 (2.7)	24 (2.5)	56 (3.5)	7 (2.2)
Less than/some high school	49 (1.6)	27 (0.8)	23 (1.2)	1 (0.2)
GED/high school equivalency	14 (2.4)	30 (2.8)	54 (3.6)	3 (1.2)
High school graduate	15 (1.4)	29 (1.4)	53 (1.9)	4 (0.7)
Vocational/trade/business school	12 (1.8)	25 (2.1)	57 (2.7)	7 (1.6)
Some college	5 (0.9)	20 (1.6)	67 (2.0)	8 (1.4)
Associate's/2-year degree	4 (0.9)	15 (1.7)	66 (2.2)	15 (2.3)
College graduate	3 (0.5)	10 (0.9)	60 (1.8)	27 (2.2)
Graduate studies/degree	3 (0.5)	8 (0.9)	57 (2.0)	33 (2.4)

NOTE: Detail may not sum to totals because of rounding. Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table D3-1. Estimates and standard errors for Figure 3-1. Average health literacy scores of adults, by self-assessment of overall health: 2003

Self-assessment of overall health	Average
Excellent	262 (1.8)
Very good	254 (1.4)
Good	234 (1.7)
Fair	207 (2.5)
Poor	196 (3.9)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 1992 National Adult Literacy Survey and 2003 National Assessment of Adult Literacy.

Table D3-2. Estimates and standard errors for Figure 3-2. Percentage of adults in each health literacy level, by self-assessment of overall health: 2003

Self-assessment of overall health	Below Basic	Basic	Intermediate	Proficient
Excellent	8 (0.6)	17 (0.7)	57 (1.0)	19 (1.1)
Very good	9 (0.7)	19 (0.7)	59 (0.9)	13 (0.9)
Good	16 (1.1)	27 (0.9)	51 (1.3)	6 (0.7)
Fair	33 (1.7)	30 (1.0)	34 (1.6)	3 (0.5)
Poor	42 (2.3)	27 (1.3)	29 (1.8)	3 (0.6)

NOTE: Detail may not sum to totals because of rounding. Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table D3-3. Estimates and standard errors for Figure 3-3. Average health literacy scores of adults, by type of health insurance coverage: 2003

Type of health insurance	Average
Employer provided	259 (1.2)
Military	248 (4.3)
Privately purchased	243 (2.3)
Medicare	216 (1.9)
Medicaid	212 (2.7)
No insurance	220 (2.4)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this figure. Adults who reported they had more than one type of health insurance are included in each applicable category in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table D3-4. Estimates and standard errors for Figure 3-4. Percentage of adults in each health literacy level, by type of health insurance coverage: 2003

Type of health insurance	Below Basic	Basic	Intermediate	Proficient
Employer provided	7 (0.5)	17 (0.6)	62 (0.9)	14 (0.9)
Military	12 (2.1)	21 (2.0)	56 (2.7)	11 (2.2)
Privately purchased	13 (1.2)	24 (1.2)	54 (1.6)	9 (1.2)
Medicare	27 (1.4)	30 (0.9)	40 (1.4)	3 (0.5)
Medicaid	30 (1.8)	30 (1.0)	38 (1.7)	3 (0.6)
No insurance	28 (1.3)	25 (0.6)	41 (1.1)	7 (0.5)

NOTE: Detail may not sum to totals because of rounding. Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this figure. Adults who reported they had more than one type of health insurance are included in each applicable category in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table D3-5. Estimates and standard errors for Figure 3-5. Percentage of adults who got information about health issues from printed and written media: newspapers, magazines, books or brochures, and the Internet, by health literacy level: 2003

Sources and literacy level	None	A little	Some	A lot
Newspapers				
Below Basic	37 (1.6)	22 (1.4)	29 (1.5)	12 (1.0)
Basic	24 (0.9)	27 (0.9)	35 (1.0)	15 (0.8)
Intermediate	19 (0.7)	31 (0.7)	36 (0.8)	14 (0.5)
Proficient	20 (1.3)	38 (1.9)	32 (1.7)	10 (1.2)
Magazines				
Below Basic	41 (1.7)	23 (1.4)	27 (1.5)	10 (1.0)
Basic	22 (0.8)	25 (0.9)	37 (1.1)	17 (0.9)
Intermediate	14 (0.6)	28 (0.7)	41 (0.8)	18 (0.7)
Proficient	12 (1.1)	35 (1.9)	40 (2.1)	12 (1.5)
Books or brochures				
Below Basic	41 (1.6)	21 (1.3)	28 (1.5)	11 (0.9)
Basic	20 (0.8)	25 (0.9)	39 (1.1)	16 (0.8)
Intermediate	13 (0.5)	28 (0.7)	41 (0.8)	18 (0.6)
Proficient	11 (1.0)	35 (2.0)	36 (2.1)	18 (1.5)
Internet				
Below Basic	80 (1.5)	5 (0.9)	7 (1.1)	7 (0.8)
Basic	58 (1.5)	12 (1.0)	16 (1.2)	14 (0.8)
Intermediate	33 (1.1)	19 (0.7)	27 (0.9)	21 (0.6)
Proficient	15 (1.5)	22 (2.4)	37 (2.7)	26 (2.1)

NOTE: Detail may not sum to totals because of rounding. Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. Prison inmates are not included in the Internet category because they do not have access to the Internet.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table D3-6. Estimates and standard errors for Figure 3-6. Percentage of adults who got information about health issues from nonprint media: radio and television, by health literacy level: 2003

Literacy level	None	A little	Some	A lot
Below Basic	14 (0.9)	19 (1.3)	34 (1.7)	33 (1.8)
Basic	8 (0.4)	21 (0.9)	40 (1.1)	31 (1.1)
Intermediate	7 (0.3)	24 (0.7)	44 (0.8)	25 (0.8)
Proficient	9 (0.8)	30 (1.8)	43 (2.0)	17 (1.6)

NOTE: Detail may not sum to totals because of rounding. Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 1992 National Adult Literacy Survey and 2003 National Assessment of Adult Literacy.

Table D3-7. Estimates and standard errors for Figure 3-7. Percentage of adults who got information about health issues from personal contacts: family, friends, or coworkers; or health care professionals, by health literacy level: 2003

Sources and literacy level	None	A little	Some	A lot
Family, friends, or coworkers				
Below Basic	24 (1.4)	23 (1.4)	35 (1.7)	19 (1.3)
Basic	15 (0.7)	25 (0.9)	40 (1.0)	20 (0.8)
Intermediate	9 (0.4)	28 (0.7)	44 (0.8)	19 (0.6)
Proficient	5 (0.6)	31 (2.0)	48 (2.0)	17 (1.4)
Health care professionals				
Below Basic	18 (1.1)	17 (1.2)	29 (1.6)	36 (1.6)
Basic	11 (0.5)	19 (0.8)	33 (1.1)	37 (1.1)
Intermediate	8 (0.4)	21 (0.6)	37 (0.8)	34 (0.9)
Proficient	8 (0.7)	23 (1.7)	39 (2.1)	30 (1.7)

NOTE: Detail may not sum to totals because of rounding. Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. Adults living in households were asked about getting information from "family members, friends, or coworkers"; prison inmates were asked about getting information from "family members, friends, other inmates, or staff."

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.



E

APPENDIX E

Additional Analyses

Health Literacy by Occupation

Table E-1. Average health literacy scores of adults, by occupational group: 2003

Occupational group	Average
Management, business, and financial	275 (3.1)
Professional and related	281 (1.8)
Service	233 (2.5)
Sales and related	253 (2.7)
Office and administrative support	255 (2.1)
Farming, fishing, and forestry	191 (11.6)
Construction and extraction	228 (3.6)
Installation, maintenance, and repair	244 (3.6)
Production	228 (2.9)
Transportation and material moving	226 (2.9)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Health Literacy by Self-Assessment of Overall Health

Table E-2. Average health literacy scores of adults, by self-assessment of overall health and gender: 2003

Self-assessment of overall health	Men	Women
Poor	186 (6.4)	205 (5.4)
Fair	204 (3.4)	210 (3.0)
Good	232 (2.7)	235 (1.8)
Very good	251 (2.0)	257 (1.9)
Excellent	257 (2.6)	267 (2.6)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-3. Average health literacy scores of adults, by self-assessment of overall health and race/ethnicity: 2003

Self-assessment of overall health	White	Black	Hispanic	Other
Poor	206 (5.2)	175 (6.6)	157 (9.2)	179 (17.2)
Fair	219 (3.0)	193 (4.1)	155 (6.4)	210 (5.4)
Good	242 (2.1)	216 (2.6)	187 (5.1)	244 (5.8)
Very good	264 (1.7)	225 (2.6)	211 (4.1)	254 (7.8)
Excellent	274 (2.1)	223 (3.2)	212 (4.2)	259 (8.5)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. The "Other" category includes Asians, Pacific Islanders, Native Hawaiians, American Indians, Alaska Natives, and multiracial adults. All adults of Hispanic origin are classified as Hispanic, regardless of race.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-4. Average health literacy scores of adults, by self-assessment of overall health and age: 2003

Self-assessment of overall health	16–24	25–39	40–49	50–64	65+
Poor	—	227 (14.2)	189 (7.4)	201 (7.3)	179 (8.6)
Fair	226 (8.1)	207 (6.0)	214 (6.0)	215 (4.8)	192 (3.8)
Good	235 (4.8)	243 (2.8)	238 (3.1)	238 (3.0)	213 (3.2)
Very good	252 (3.0)	262 (2.9)	257 (2.7)	255 (3.2)	232 (4.0)
Excellent	252 (3.7)	268 (2.8)	266 (3.8)	273 (4.0)	231 (6.4)

—Not available due to small sample size.

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-5. Average health literacy scores of adults, by self-assessment of overall health and highest educational attainment: 2003

Self-assessment of overall health	Less than/ some high school	High school graduate/GED/ high school equivalency	At least some college	College graduate/ graduate studies/degree
Poor	155 (5.6)	207 (6.3)	234 (9.6)	217 (22.8)
Fair	168 (4.3)	211 (3.0)	233 (4.4)	256 (6.5)
Good	185 (3.9)	226 (2.3)	246 (2.6)	273 (3.9)
Very good	202 (3.4)	242 (2.4)	261 (2.2)	285 (3.4)
Excellent	189 (3.6)	241 (3.8)	262 (2.3)	291 (2.9)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Health Literacy by Health Insurance Status

Table E-6. Average health literacy scores of adults, by type of health insurance coverage and gender: 2003

Type of health insurance	Men	Women
Employer provided	255 (1.4)	262 (1.7)
Military	243 (5.0)	258 (5.3)
Privately purchased	244 (4.0)	241 (2.6)
Medicare	215 (3.1)	217 (2.3)
Medicaid	201 (5.1)	217 (2.7)
No insurance	216 (3.1)	224 (3.1)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. Adults who reported they had more than one type of health insurance are included in each applicable category in this table.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-7. Average health literacy scores of adults, by type of health insurance coverage and race/ethnicity: 2003

Type of health insurance	White	Black	Hispanic	Other
Employer provided	266 (1.4)	226 (2.5)	229 (2.6)	258 (4.4)
Military	255 (5.1)	224 (6.8)	225 (10.1)	—
Privately purchased	246 (2.4)	212 (4.3)	224 (8.8)	243 (9.0)
Medicare	222 (2.2)	178 (5.3)	161 (7.6)	—
Medicaid	224 (4.4)	202 (3.1)	181 (4.7)	228 (10.2)
No insurance	241 (2.5)	212 (2.8)	170 (5.2)	229 (10.6)

—Not available due to small sample size.

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. All adults of Hispanic origin are classified as Hispanic, regardless of race. Adults who reported they had more than one type of health insurance are included in each applicable category in this table.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-8. Average health literacy scores of adults, by type of health insurance coverage and age: 2003

Type of health insurance	16–24	25–39	40–49	50–64	65+
Employer provided	258 (3.1)	269 (1.7)	259 (2.0)	257 (2.3)	231 (3.3)
Military	262 (11.9)	277 (5.1)	271 (12.5)	240 (6.1)	224 (8.2)
Privately purchased	261 (8.2)	266 (6.5)	263 (8.1)	252 (4.1)	219 (3.4)
Medicare	—	239 (11.1)	220 (6.4)	214 (6.5)	216 (2.1)
Medicaid	224 (4.2)	229 (4.0)	201 (5.6)	192 (5.8)	185 (8.0)
No insurance	227 (3.9)	221 (3.1)	224 (4.9)	207 (5.1)	169 (9.5)

—Not available due to small sample size.

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. Adults who reported they had more than one type of health insurance are included in each applicable category in this table.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-9. Average health literacy scores of adults, by type of health insurance coverage and highest educational attainment: 2003

Type of health insurance	Less than/ some high school	High school graduate/GED/ high school equivalency	At least some college	College graduate/ graduate studies/degree
Employer provided	205 (3.5)	241 (2.0)	261 (1.5)	288 (1.9)
Military	206 (13.5)	233 (8.5)	257 (6.7)	272 (9.3)
Privately purchased	193 (6.2)	228 (3.1)	253 (4.0)	272 (4.6)
Medicare	171 (4.5)	215 (2.5)	229 (3.4)	251 (4.5)
Medicaid	177 (4.9)	221 (3.5)	237 (4.0)	247 (13.4)
No insurance	171 (4.5)	223 (2.9)	246 (3.0)	262 (7.4)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. Adults who reported they had more than one type of health insurance are included in each applicable category in this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Health Literacy by Sources of Health Information

Printed and Written Information

Table E-10. Average health literacy scores of adults who got information about health issues from newspapers, magazines, and books or brochures, by gender: 2003

Source and amount of information	Men	Women
Newspapers		
None	228 (3.2)	232 (2.5)
A little	249 (2.3)	258 (2.4)
Some	245 (1.6)	248 (1.8)
A lot	241 (3.3)	245 (2.3)
Magazines		
None	219 (2.9)	214 (3.6)
A little	250 (2.3)	254 (2.7)
Some	249 (2.2)	252 (1.7)
A lot	243 (2.7)	251 (1.9)
Books or brochures		
None	218 (3.0)	208 (3.7)
A little	252 (2.0)	253 (2.8)
Some	245 (1.8)	251 (1.9)
A lot	246 (2.5)	255 (2.2)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-11. Average health literacy scores of adults who got information about health issues from the Internet, by gender: 2003

Amount of information from the Internet	Men	Women
None	213 (1.8)	220 (1.9)
A little	259 (2.9)	267 (2.8)
Some	265 (2.4)	266 (2.0)
A lot	264 (2.8)	262 (2.1)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. Prison inmates are not included in the Internet category because they do not have access to the Internet.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-12. Average health literacy scores of adults who got information about health issues from newspapers, magazines, and books or brochures, by race/ethnicity: 2003

Source and amount of information	White	Black	Hispanic	Other
Newspapers				
None	246 (2.4)	202 (3.8)	172 (5.1)	242 (8.1)
A little	264 (2.0)	222 (2.9)	203 (5.4)	248 (6.5)
Some	255 (1.8)	220 (2.1)	213 (2.8)	249 (7.5)
A lot	253 (2.6)	216 (4.1)	207 (5.9)	240 (9.1)
Magazines				
None	234 (2.8)	193 (3.5)	163 (5.7)	218 (12.5)
A little	262 (2.2)	219 (3.1)	197 (4.9)	247 (6.9)
Some	259 (1.8)	222 (2.3)	215 (3.3)	255 (6.0)
A lot	258 (2.2)	223 (3.6)	221 (5.6)	241 (8.2)
Books or brochures				
None	231 (3.0)	188 (5.9)	159 (5.6)	225 (15.0)
A little	262 (2.0)	219 (3.0)	202 (5.8)	245 (5.8)
Some	257 (1.9)	221 (2.5)	212 (3.4)	249 (7.3)
A lot	262 (2.3)	222 (3.6)	225 (4.2)	257 (7.5)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. The "Other" category includes Asians, Pacific Islanders, Native Hawaiians, American Indians, Alaska Natives, and multiracial adults. All adults of Hispanic origin are classified as Hispanic, regardless of race.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-13. Average health literacy scores of adults who got information about health issues from the Internet, by race/ethnicity: 2003

Amount of information from the Internet	White	Black	Hispanic	Other
None	229 (1.5)	198 (2.7)	162 (4.0)	221 (9.4)
A little	270 (2.6)	230 (3.9)	239 (5.2)	255 (8.9)
Some	273 (2.1)	232 (3.3)	234 (3.7)	268 (7.9)
A lot	272 (2.1)	234 (3.0)	235 (4.0)	249 (6.3)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. The "Other" category includes Asians, Pacific Islanders, Native Hawaiians, American Indians, Alaska Natives, and multiracial adults. All adults of Hispanic origin are classified as Hispanic, regardless of race. Prison inmates are not included in the Internet category because they do not have access to the Internet.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-14. Average health literacy scores of adults who got information about health issues from newspapers, magazines, and books or brochures, by age: 2003

Source and amount of information	16–24	25–39	40–49	50–64	65+
Newspapers					
None	241 (4.2)	245 (3.0)	229 (4.4)	217 (3.6)	182 (5.7)
A little	256 (3.7)	267 (2.5)	260 (3.5)	250 (3.5)	208 (3.8)
Some	243 (3.2)	256 (2.4)	251 (2.6)	252 (3.5)	222 (2.7)
A lot	243 (5.8)	242 (4.2)	247 (4.3)	254 (4.2)	227 (4.9)
Magazines					
None	236 (4.5)	232 (3.9)	218 (4.3)	207 (4.8)	171 (4.5)
A little	247 (3.4)	263 (2.9)	260 (3.6)	251 (4.6)	213 (4.6)
Some	253 (3.6)	259 (2.2)	254 (2.6)	253 (3.1)	227 (2.6)
A lot	252 (3.5)	261 (3.6)	248 (3.7)	251 (4.1)	223 (3.6)
Books or brochures					
None	236 (4.6)	222 (3.4)	221 (6.0)	198 (4.8)	172 (5.1)
A little	254 (4.0)	265 (3.1)	248 (4.0)	253 (4.6)	217 (4.0)
Some	246 (3.5)	258 (2.4)	254 (2.9)	252 (2.7)	223 (2.3)
A lot	253 (5.7)	266 (3.4)	255 (4.6)	249 (3.7)	228 (4.3)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-15. Average health literacy scores of adults who got information about health issues from the Internet, by age: 2003

Amount of information from the Internet	16–24	25–39	40–49	50–64	65+
None	224 (4.3)	222 (3.2)	218 (2.4)	222 (2.5)	203 (2.2)
A little	257 (3.7)	262 (3.4)	272 (5.0)	270 (4.7)	249 (7.5)
Some	257 (3.8)	274 (3.2)	266 (2.9)	266 (3.7)	250 (5.1)
A lot	255 (4.0)	274 (2.7)	262 (4.1)	260 (4.5)	235 (6.1)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. Prison inmates are not included in the Internet category because they do not have access to the Internet.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-16. Average health literacy scores of adults who got information about health issues from newspapers, magazines, and books or brochures, by highest educational attainment: 2003

Source and amount of information	Less than/ some high school	High school graduate/GED/ high school equivalency	At least some college	College graduate/ graduate studies/degree
Newspapers				
None	167 (4.5)	228 (2.3)	252 (2.2)	280 (5.2)
A little	192 (4.0)	238 (2.9)	262 (2.4)	289 (3.2)
Some	195 (3.0)	230 (2.2)	255 (1.9)	281 (3.0)
A lot	191 (3.7)	229 (3.7)	245 (3.5)	281 (4.6)
Magazines				
None	160 (3.4)	223 (2.7)	244 (3.3)	273 (6.2)
A little	194 (4.2)	237 (3.0)	261 (2.3)	289 (3.8)
Some	196 (3.3)	234 (2.2)	256 (1.8)	283 (2.7)
A lot	203 (3.8)	229 (3.0)	253 (2.9)	280 (3.1)
Books or brochures				
None	162 (3.6)	221 (2.6)	241 (4.1)	267 (7.2)
A little	194 (4.7)	239 (3.2)	258 (1.6)	289 (3.3)
Some	194 (3.2)	232 (2.2)	256 (2.2)	284 (3.0)
A lot	204 (3.6)	232 (3.3)	258 (2.9)	281 (3.7)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-17. Average health literacy scores of adults who got information about health issues from the Internet, by highest educational attainment: 2003

Amount of information from the Internet	Less than/ some high school	High school graduate/GED/ high school equivalency	At least some college	College graduate/ graduate studies/degree
None	172 (2.7)	220 (1.5)	237 (2.2)	258 (3.0)
A little	217 (5.7)	253 (4.0)	260 (2.7)	289 (4.1)
Some	210 (4.6)	244 (3.0)	266 (2.9)	291 (2.9)
A lot	221 (5.6)	244 (4.2)	264 (2.3)	288 (3.5)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. Prison inmates are not included in the Internet category because they do not have access to the Internet.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Nonprint Media

Table E-18. Average health literacy scores of adults who got information about health issues from radio and television, by gender: 2003

Amount of information from radio and television	Men	Women
None	237 (4.6)	234 (4.6)
A little	249 (2.5)	256 (2.8)
Some	247 (1.8)	251 (1.9)
A lot	229 (2.3)	239 (2.8)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-19. Average health literacy scores of adults who got information about health issues from radio and television, by race/ethnicity: 2003

Amount of information from radio and television	White	Black	Hispanic	Other
None	249 (3.8)	202 (5.4)	195 (6.3)	223 (11.9)
A little	262 (2.2)	220 (3.8)	203 (5.8)	243 (7.3)
Some	258 (1.8)	219 (2.5)	202 (4.1)	257 (6.4)
A lot	247 (2.0)	214 (3.5)	187 (4.9)	239 (5.9)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. The "Other" category includes Asians, Pacific Islanders, Native Hawaiians, American Indians, Alaska Natives, and multiracial adults. All adults of Hispanic origin are classified as Hispanic, regardless of race.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-20. Average health literacy scores of adults who got information about health issues from radio and television, by age: 2003

Amount of information from radio and television	16–24	25–39	40–49	50–64	65+
None	246 (6.4)	252 (6.3)	245 (6.2)	223 (5.9)	192 (6.9)
A little	248 (4.4)	265 (3.9)	258 (3.6)	254 (4.1)	223 (4.7)
Some	252 (3.6)	257 (2.3)	253 (2.9)	253 (2.7)	219 (2.7)
A lot	240 (3.7)	246 (3.0)	237 (3.3)	231 (3.0)	204 (3.5)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-21. Average health literacy scores of adults who got information about health issues from radio and television, by highest educational attainment: 2003

Amount of information from radio and television	Less than/ some high school	High school graduate/GED/ high school equivalency	At least some college	College graduate/ graduate studies/degree
None	172 (5.5)	219 (5.2)	256 (4.4)	282 (7.7)
A little	186 (5.1)	238 (3.0)	258 (2.6)	289 (2.9)
Some	187 (3.3)	235 (2.1)	257 (1.9)	283 (2.7)
A lot	183 (3.4)	227 (2.9)	250 (2.9)	277 (4.8)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Personal Contacts

Table E-22. Average health literacy scores of adults who got information about health issues from family, friends, or coworkers, by gender: 2003

Amount of information from family, friends, or coworkers	Men	Women
None	215 (3.3)	217 (3.0)
A little	249 (2.2)	251 (2.6)
Some	246 (2.0)	253 (1.8)
A lot	240 (2.5)	245 (2.3)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. Adults living in households were asked about getting information from "family members, friends, or coworkers"; prison inmates were asked about getting information from "family members, friends, other inmates, or staff."

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-23. Average health literacy scores of adults who got information about health issues from health care professionals, by gender: 2003

Amount of information from health care professionals	Men	Women
None	228 (3.6)	223 (4.4)
A little	249 (2.5)	252 (2.9)
Some	248 (2.3)	251 (2.3)
A lot	236 (1.7)	245 (1.8)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-24. Average health literacy scores of adults who got information about health issues from family, friends, or coworkers, by race/ethnicity: 2003

Amount of information from family, friends, or coworkers	White	Black	Hispanic	Other
None	229 (2.8)	200 (4.9)	170 (5.3)	219 (11.6)
A little	260 (2.5)	224 (3.2)	201 (4.5)	243 (7.3)
Some	259 (1.6)	220 (3.1)	203 (4.3)	257 (7.1)
A lot	255 (2.3)	212 (2.7)	198 (6.2)	244 (6.5)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. The "Other" category includes Asians, Pacific Islanders, Native Hawaiians, American Indians, Alaska Natives, and multiracial adults. All adults of Hispanic origin are classified as Hispanic, regardless of race. Adults living in households were asked about getting information from "family members, friends, or coworkers"; prison inmates were asked about getting information from "family members, friends, other inmates, or staff."

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-25. Average health literacy scores of adults who got information about health issues from health care professionals, by race/ethnicity: 2003

Amount of information from health care professionals	White	Black	Hispanic	Other
None	246 (3.4)	208 (3.2)	172 (5.7)	231 (10.2)
A little	260 (2.2)	221 (3.9)	196 (4.7)	252 (10.0)
Some	259 (2.1)	220 (2.7)	199 (4.1)	252 (7.7)
A lot	252 (1.6)	215 (2.9)	209 (5.0)	240 (5.2)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. The "Other" category includes Asians, Pacific Islanders, Native Hawaiians, American Indians, Alaska Natives, and multiracial adults. All adults of Hispanic origin are classified as Hispanic, regardless of race.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-26. Average health literacy scores of adults who got information about health issues from family, friends, or coworkers, by age: 2003

Amount of information from family, friends, or coworkers	16–24	25–39	40–49	50–64	65+
None	218 (5.5)	227 (5.6)	229 (5.4)	219 (4.3)	197 (3.4)
A little	252 (4.6)	258 (3.7)	255 (3.3)	252 (3.4)	222 (4.5)
Some	251 (3.0)	261 (2.3)	252 (2.6)	250 (3.2)	219 (3.0)
A lot	246 (3.3)	253 (3.3)	239 (4.6)	242 (4.4)	209 (5.1)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. Adults living in households were asked about getting information from "family members, friends, or coworkers"; prison inmates were asked about getting information from "family members, friends, other inmates, or staff."

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-27. Average health literacy scores of adults who got information about health issues from health care professionals, by age: 2003

Amount of information from health care professionals	16–24	25–39	40–49	50–64	65+
None	239 (5.1)	230 (4.5)	230 (5.7)	221 (6.4)	178 (6.6)
A little	255 (4.2)	254 (2.9)	251 (3.7)	256 (4.8)	213 (5.8)
Some	249 (4.1)	263 (2.9)	253 (3.0)	253 (3.8)	218 (3.0)
A lot	242 (3.0)	258 (2.3)	247 (2.5)	238 (3.3)	216 (2.3)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-28. Average health literacy scores of adults who got information about health issues from family, friends, or coworkers, by highest educational attainment: 2003

Amount of information from family, friends, or coworkers	Less than/ some high school	High school graduate/GED/ high school equivalency	At least some college	College graduate/ graduate studies/degree
None	166 (3.7)	214 (3.1)	239 (4.2)	255 (4.7)
A little	184 (4.0)	235 (2.5)	258 (2.2)	288 (3.8)
Some	190 (3.8)	235 (2.6)	257 (1.8)	287 (2.6)
A lot	188 (4.8)	233 (2.7)	254 (3.0)	282 (4.2)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table. Adults living in households were asked about getting information from “family members, friends, or coworkers;” prison inmates were asked about getting information from “family members, friends, other inmates, or staff.”

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

Table E-29. Average health literacy scores of adults who got information about health issues from health care professionals, by highest educational attainment: 2003

Amount of information from health care professionals	Less than/ some high school	High school graduate/GED/ high school equivalency	At least some college	College graduate/ graduate studies/degree
None	167 (5.2)	225 (4.4)	251 (4.6)	280 (9.0)
A little	185 (5.3)	243 (3.5)	258 (2.6)	284 (3.4)
Some	184 (3.7)	234 (2.2)	259 (1.7)	285 (2.7)
A lot	190 (3.6)	226 (2.3)	251 (2.1)	283 (2.7)

NOTE: Standard errors are in parentheses. Adults are defined as people 16 years of age and older living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3 percent in 2003) are excluded from this table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003 National Assessment of Adult Literacy.

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