

ADHD Questions additional information:

Section E: Source of Questions

1. What is the source of the question(s)? Why are questions from those currently used by the NHIS?

- ☐ We developed the question(s) **{skip to Q4}**
- ☒ The question(s) is/are from an existing instrument or adapted from an existing instrument. Please provide details on the use of the questions by other surveys.

The questions were included in the NCHS Rapid Survey System Round 2 in 2023 and in the 2025 NHIS. The question about having ever been diagnosed with ADHD was also implemented on the 2007 and 2012 NHIS survey for adults.

The 2 new treatment questions were included in the 2025 NHIS and were adapted from questions used for the NCHS Rapid Survey System Round 2 in 2023.

Section F: Performance

If the question(s) was not developed by your program, then answer Q2-3; otherwise, skip to Q4

2. Please provide the name of the original instrument or source for each question. Please provide links to online sources using the questions if applicable:

List all federal/state surveys that have used the questions and the dates of use in the table below:

Name of survey(s)	Dates the	Are the questions	Provide comment on
-------------------	-----------	-------------------	--------------------

(include hyperlink to survey)	questions were included in the survey	proposed the EXACT language of previous use (Y/N)	why wording has changed from use by other surveys (if applicable)
Ever diagnosed:			
NHIS	2007	N	This survey used a slightly different introductory sentence and an older variation of the term ADHD <i>"Have you EVER been told by a doctor or other health professional that you had Attention Deficit Disorder or Hyperactivity?"</i>
NHIS	2012	N	This survey used a slightly different introductory sentence <i>"Have you EVER been told by a doctor or other health professional that you had Attention Deficit Hyperactivity Disorder (ADHD) or Attention Deficit Disorder (ADD)?"</i>
NCHS Rapid Survey System Round 2	Fall 2023	N	This survey used a slightly different introductory sentence: <i>"Have you ever been diagnosed</i>

			<i>with attention-deficit/hyperactivity disorder, or ADHD, by a doctor or other health professional?"</i> Proposed changes are to adapt to the introductory sentence used in the BRFSS.
Current ADHD:			
NCHS Rapid Survey System Round 2 Questionnaire Programming Specifications RSS-2 (English version)	Fall 2023	N	The survey uses a slightly different way to ask for current diagnosis "<i>Do you currently have ADHD</i>" Proposed changes are to adapt to the way this is asked in the BRFSS, e.g., CCHC.05 'Do you still have Asthma'
NHIS	2025	N	This survey uses a slightly different introductory sentence: "<i>Has a <u>doctor or other health professional</u> ever told you that you had Attention Deficit/Hyperactivity Disorder or ADHD, or Attention Deficit Disorder or ADD?</i>" Proposed changes are to adapt to the

			introductory sentence used in the BRFSS.
Medication treatment:			
NCHS Rapid Survey System Round 2 Questionnaire Programming Specifications RSS-2 (English version)	Fall 2023	N	The survey uses a slightly different way to ask for medication treatment: During the past 12 months, were you prescribed medication to help you with your ADHD? We propose using the version tested for and included in the NHIS
NHIS 2025 English National Health Interview Survey (NHIS) Questionnaire	2025	Y	
Counseling, therapy, behavioral treatment:			
NCHS Rapid Survey System Round 2 Questionnaire Programming Specifications RSS-2 (English version)	Fall 2023	N	The survey uses a slightly different way to ask for therapy "During the past 12 months, did you receive counseling or therapy from a

			mental health professional to help you with your ADHD? Mental health professionals can include psychiatrists, psychologists, psychiatric nurses, or clinical social workers” We propose using the version tested for and included in the NHIS
NHIS 2025 English National Health Interview Survey (NHIS) Questionnaire	2025	Y	

3. Have these questions been part of a human subjects review determination? Yes

Please enter name of state/agency conducting IRB review: NHIS

Please enter protocol # 2007 - #2004-13, 2012 - #2009-19.

4. Have the question(s) undergone validation testing?

- ☐ Yes
- ☒ No
- ☐ Yes – but not completed

If yes, please provide evidence of the extent of validity testing by providing the following information for each study conducted:

Citation (if applicable):

5. Has the reliability of question(s) been tested?

- ☐ Yes
- ☒ No
- ☐ Yes – but not completed

If yes, please provide evidence of the extent of reliability testing by providing the following information for each study conducted:

6. Have the question(s) undergone cognitive testing?

- ☒ Yes (skip next question and go to Date of testing Question)
- ☐ No

Regarding (NO) response:

If no, does program want PHSB to have testing conducted?

- ☐ Yes (go to Question 8) —be sure to complete Part II: Funding Form to provide CAN number(s) to cover costs of cognitive testing.
- ☐ No (go to Question 8)

If yes, please describe the study design and results:

Date of testing: Fall 2024, June-2024 to January 2025

Study design: Purposeful sampling, 24 participants to date and 34 English-speaking adult respondents, age 18 or over. Purposeful sampling: In addition to key demographic factors such as age, sex, educational attainment, and race, respondents were recruited according to whether they said they did or did not have ADHD. Of the 34 participants, 21 had been diagnosed with ADHD by a health professional, 9 suspected they had ADHD due to self- or informal diagnosis, and 4 did not have or suspect they had ADHD.

Results: Question is considered valid, easy to understand, responses are consistent with other information provided.

7. Please indicate approximate total time to administer the set of questions in a telephone survey, including instructions.

- ☐ <30seconds
 - ☒ 30s-1min
 - ☐ 1-2 min
 - ☐ >2 min
- ☐ Unknown

8. Please indicate the average time to administer per question.

- ☐ <5 seconds
- ☒ 5-10 seconds
- ☐ >10-20 seconds

☐ Unknown

Please provide the methods used to obtain timing data:

9. Are the question(s) telephone-survey ready?

- ☒ Yes
- ☐ No

Please describe how you determined readiness of the questions.

The submitted questions follow the format already used for the core health condition question and have been cognitively tested for an interview-style administration by telephone.

Section G: Public Health Importance

10. Please provide a rationale for why the question(s) is/are important to health behavior or chronic disease by addressing the following:

Prevalence or disease burden:

Based on [estimates from the 2023 Rapid Survey System](#), 7.8% of U.S. adults reported being diagnosed with ADHD, and 6% (15.5 million) currently have ADHD. ADHD recognition and diagnosis have increased in the past decade, therefore there are significant cohort effects. Among adults ages 18-44, 12.7% reported being diagnosed, and 9.9% currently have ADHD. Half of adults with ADHD were diagnosed in adulthood.

Estimated costs to the public and healthcare:

Estimates using data from 2017, [based on a prevalence of around 8 million using older estimates, showed a total societal excess cost attributable to ADHD of \\$122.8 billion \(\\$14,092 per adult\)](#). Excess costs of unemployment (\$66.8 billion; 54.4%) comprised the largest proportion of the total, followed by productivity loss (\$28.8 billion; 23.4%) and health care services (\$14.3 billion; 11.6%). Current cost data are not available. However, given that the current estimated prevalence is double the prevalence used for these cost calculations, costs may also have doubled. In addition, ADHD is associated with a [significantly increased risk of mortality](#). Both medication and non- pharmacological treatment for ADHD are [considered to be cost-effective](#).

How the topic is related to a state or national initiative (e.g. Healthy People 2030):

People with ADHD are at [increased risk for a large range of negative health outcomes](#). Understanding the association with those outcomes and ADHD can help states plan targeted interventions and health promotion.

The negative health outcomes that are associated with ADHD include many of the Healthy People 2030 objectives. For example, ADHD is associated with most of the Leading Health Indicators

- School achievement AH-05 (lower for people with ADHD)
- Adolescent depression MHMD-06 (higher for people with ADHD)
- Childhood obesity NWS-04 (higher for people with ADHD)
- Adolescent tobacco use TU-04 (higher for people with ADHD)
- Adult Binge drinking SU-10 (higher for people with ADHD)
- High blood pressure HDS-05 (higher for people with ADHD)
- Cigarette smoking TU-02 (higher for people with ADHD)
- Employment SDOH-02 (lower for people with ADHD)
- Diabetes D-01 (higher for people with ADHD)

Although there is insufficient evidence to link ADHD to maternal death MICH-04, ADHD in women is significantly associated [with a range of perinatal risk factors](#).

Besides your program, how will other states, programs or agencies benefit from the inclusion of these question(s) in the BRFSS?

ADHD is not currently included in any nationally representative survey that allows state-based estimates. ADHD diagnosis in children [varies significantly among U.S. states](#), with estimates ranging from 6%-16% across states. Thus, the inclusion of ADHD questions will have broad benefits for states, programs, and agencies who use the BRFSS to address health outcomes including injury and chronic disease. Given that ADHD is associated increased risk for injury, chronic disease, and other health risks, understanding the prevalence of adult ADHD and the association with risk factors that states, programs, or agencies are addressing will allow them to identify populations at increased risk that may need targeted support and interventions.

For existing intervention and prevention programs that states, programs, or agencies are conducting, understanding who have ADHD will also provide benefits. Comparing people with ADHD to those without may provide opportunities to tailor interventions and increase participation and success in the ongoing programs. For example, ADHD may interfere with medication adherence. For conditions such as obesity and high blood pressure for which medications may be needed to control and improve the condition, knowing whether a person has ADHD may indicate whether they may have difficulty adhering to their medication treatment. This information can allow states, programs, or agencies to develop targeted strategies to support adherence that address the executive function weaknesses that are characteristic of ADHD and may increase the effectiveness of treatment for a range of health conditions.

Section H: Analytic Plan

Please explain why state-level estimates are desired (e.g., impact for your program/agency, local/state/national policy implications, support to research funding.)

The prevalence of ADHD varies by geographic location. There are no state-based estimates for adults in the U.S., but data on children shows that prevalence rates range from [6% to 16%](#) depending on the state. Treatment varies greatly by state, prevalence of ADHD medication treatment ranges from 38% to 81% and behavior treatment ranges from 39% to 62%. Therefore state-level estimates for adults are needed to properly document the condition.

11. Please explain why there is a need to measure the question(s) over time and/or the periodicity of the data.

The prevalence of ADHD has increased over time. Historically, it was considered a disorder of childhood, but it is increasingly recognized as a life-long condition. [Recent data show](#) that about half of adults with ADHD were diagnosed in adulthood, and that prevalence varies by age. It is expected that with increased recognition of ADHD among adults, diagnosis rates may continue to increase, and tracking prevalence over time is needed to understand whether such increases occur. In addition, recent data show increases in stimulant prescription prescribing over time; comprehensive data on adult ADHD diagnoses and treatment over time are needed to contextualize these data and treatment needs.

12. Please describe how calculated variable(s) will be constructed from the question(s)

The prevalence estimate for 'Ever ADHD' will be calculated as the proportion of survey participants who respond with Yes to the question 'have you ever been told ... you had ADHD', compared to the overall survey participant population. The prevalence estimate for 'Current ADHD' will be calculated as the proportion of

survey participants who respond with Yes to the question 'do you still have ADHD', compared to the overall survey participant population.

13. Please describe how the variable(s) will be used in analyses (e.g., outcome, predictor, etc.).

For prevalence, the variables of 'ever ADHD' and 'current ADHD' will function as outcome.

In addition, ADHD will also be used as a predictor to examine the range of health risks and health outcomes as well as questions about treatment and functioning that are available on the BRFSS, to document the relative risk associated with ADHD. For example, it will be possible to compare the proportion of adults with ADHD who have had their cholesterol checked to those who have not, to understand whether ADHD is associated with a lower prevalence of preventive health care use.

14. Based on your questions of interest and anticipated effect size, please provide an estimate for required sample size and the rationale/calculations used to determine the size.

Rationale/calculations: We used sample sizes at the state level from the 2023 BRFSS to determine whether the previously collected samples were large enough to achieve sufficient power for our analyses. We calculated minimum sample sizes for both the 'ever ADHD' and 'current ADHD' items assuming prevalences of 7.8% and 6% ([Rapid Survey System in 2023](#)), respectively. All calculations assumed a medium effect size (i.e., Cohen's $h = 0.5$), $\alpha = .05$, a design effect of 2, and power = .80. Calculations were conducted using the "samplesize4surveys" package in R.

Estimated Sample Sizes: First, we calculated the sample sizes required to determine whether the prevalences of 7.8% and 6% were significantly different from 0 for each state. A minimum of 53 to 55 people who have ever had ADHD, and 49 to 50 who currently have ADHD are required to achieve a power of .80.

These minimums are well below 6% of the sample sizes collected for each state in 2023. As a result, these analyses would achieve sufficient power in 100% of states.

Next, we calculated the sample sizes required to detect differences in prevalence of covariates between those who replied “yes” vs “no” to the ‘ever ADHD’ item and those who replied “yes” vs “no” to the ‘now ADHD’ item for each state. Moreover, we did this for two covariates: diabetes (prevalence of 12%) and a hypothetical covariate with a prevalence of 50%.

To detect differences in the prevalence of diabetes for ‘ever ADHD’, minimum sample sizes were 114 to 123. Sufficient power was achieved across all states. For ‘now ADHD’, minimum sample sizes were 125 to 132. Sufficient power was achieved in all but 1 state (Guam).

To detect differences in the prevalence of a hypothetical variable with 50% prevalence, for ‘ever ADHD’, minimum sample sizes were 200 to 216. Sufficient power was achieved in all but 2 states (Guam and the Virgin Islands). For ‘now ADHD’, minimum sample sizes were 230 to 243. Sufficient power was achieved in 46 states. The exceptions were the District of Columbia, Nevada, New Mexico, North Carolina, Guam, and the Virgin Islands.

As such, the sample sizes currently collected by the BRFSS are more than sufficient to achieve a minimum power of .80 at the state level for the vast majority of analyses, even when assuming a 50% prevalence for covariates.