

TABLE S1. Diagnoses and measures of correlates of ADHD	
Domain	Description
Childhood ADHD diagnosis	The Dunedin Study’s diagnoses of ADHD in childhood were made in 1984-1988 and have been reported in over 35 publications. Symptoms were ascertained through private assessments of each child by a child psychiatrist at ages 11 and 13 and by trained interviewers at age 15, using the Diagnostic Interview Schedule for Children-Child Version for DSM-III (Costello et al 1982). Dunedin interviewers received 2 weeks of formal training on the interview, and were trained to 90% inter-rater reliability criterion standard for ascertainment of symptoms, plus re-training continued periodically to prevent drift. Also at 11, 13, and 15 years, symptoms were ascertained through parent/teacher checklists comprising all 16 DSM-III symptoms. The reporting period was the past 12 months. Each symptom by each reporter was coded as “0=does not apply,” “1=applies somewhat,” “2=certainly applies.” Data collection and identification of disorder cases was described in detail by Anderson et al. (1987). Briefly, two-thirds of cases had the 8 or more required symptoms rated 2=certainly by more than one source (plus confirmation of some symptoms across home and school settings), while one-third of cases had 8 or more symptoms rated 2=certainly by one source, with confirmation through a combination of symptoms rated 2=certainly by the other sources. Symptom onset before age 7 was confirmed using parent and teacher checklists gathered at ages 5 and 7, comprising three items: “very restless, often running about or jumping up and down, hardly ever still,” “squirmy fidgety child,” and “has poor concentration or short attention span”. At age 11, 53 children were diagnosed, and 8 more were added at ages 13 and 15. ADHD was diagnosed regardless of the presence of other disorders. Research diagnoses followed DSM-III and identified 61 children.
Adult ADHD diagnosis	Symptoms were ascertained in 2010-2012 when participants were age 38 through private structured diagnostic interviews by interviewers with mental-health-related tertiary qualifications and clinical experience. Interviewers received 2 weeks of formal training on the interview, and were trained to 90% inter-rater reliability criterion standard for ascertainment of symptoms, plus re-training continued periodically to prevent drift. Age-38 interviewers were blind to prior data. Because the Dunedin Study’s age-38 assessments began in 2010, question/items administered were those reported in leading measures of adult ADHD considered by the DSM-5 working group at that time (Barkley, Murphy & Fisher 2008; Kessler et al. 2010; Manuzza 2008; see Table S2 below). Our interview

	<p>format followed recommendations from the working group to include behavioral examples relevant for adults (for example, if an item referred to jumping out of seat for children, the interviewer gave examples of difficulty sitting through long meetings or social occasions for adults). We required that symptoms reported interfered with “your life, family, friends, work, or everyday activities,” as rated 2 or higher on a visual scale from “1=mild interference” to “5=severe.” The reporting period was the past 12 months. We operationalized the 18 symptoms of DSM-5 ADHD by using 27 items scored 0=absent/1=present. A symptom could be met by one item. DSM-5 requires fewer symptoms for adults than for children; 5 inattention symptoms or 5 hyperactive-impulsive symptoms. (The inattention and hyperactive-impulsive symptom-count scales were correlated at $r=.60$). Diagnoses excluded adults with current schizophrenia. Apart from schizophrenia, adult ADHD was diagnosed regardless of the presence of other disorders. Because informant-confirmation and presence of childhood ADHD symptoms are outcome measures in this article, they were not required for diagnosis. Research diagnoses otherwise followed DSM-5 and identified 31 adults.</p>
<p>Comparing DSM-III vs DSM-5</p>	<p>DSM-III diagnosis of childhood Attention Deficit Disorder with Hyperactivity (ADHD) required 8 symptoms (3 of 5 inattention symptoms, 3 of 6 impulsivity symptoms, and 2 of 5 hyperactivity symptoms). ADD without hyperactivity could be diagnosed in children who lacked any symptoms of hyperactivity. Symptoms must onset before age 7 years. Reports from both parents and teachers were recommended.</p> <p>DSM-5 diagnosis of adult Attention Deficit /Hyperactivity Disorder (ADHD) required 5 symptoms (5 of 9 inattention symptoms or 5 of 9 impulsivity/hyperactivity symptoms). Several symptoms must onset before age 12 years. Several symptoms must be present in two or more settings. Symptoms must interfere with functioning.</p>
<p>Diagnostic features described in Table 1 of the main article</p>	
<p><i>Measures taken in childhood</i></p>	<p><i>(see Table S3 for a correlation matrix of key study measures)</i></p>
<p>Parent & teacher reports of ADHD symptoms</p>	<p>To derive a measure of onset before age 12 for this article, we used the Rutter Child Scales (Rutter et al., 1970), completed by parents and teachers. This scale comprised three items relevant for ADHD: “very restless, often running about or jumping up and down, hardly ever still,” “squirmy fidgety child,” and “has poor concentration or short attention span.” Items were rated as “0=does not apply,” “1=applies somewhat,” “2=certainly applies.” Ratings for these 3 items were summed at each age and then averaged across parents and teachers and the four age periods, 5, 7, 9, and 11.</p>

	<p>To derive separate parent versus teacher measures for this article indexing the study children's levels of ADHD symptoms across different home versus school settings at the time of childhood diagnosis, we used the parent and teacher checklists comprising all 16 DSM-III symptoms of inattention, impulsivity, and hyperactivity (McGee, Williams, & Silva, 1985). The reporting period was the past 12 months. Items were averaged within reporter, across ages 11, 13, and 15. The scales were converted to a Z-score, mean = 0, SD = 1. Longitudinal correlations between these age-averaged symptom counts and the later age-38 adult symptom counts were $r=.12$ for the parent-report ($p<.001$) and $r=.12$ for the teacher-report ($p<.001$).</p>
<i>Measures taken in adulthood</i>	
Informant reports of ADHD symptoms	<p>At age 38 Study members nominated three people “who knew them well.” Informants were friends, partners, or other family members. These informants were mailed questionnaires which included a checklist tapping all DSM-5 ADHD symptoms, including whether the study member had problems with his or her attention (e.g., Is easily distracted, gets side-tracked easily, Can't concentrate, mind wanders) and hyperactivity/impulsivity (e.g., Can't resist temptation, has difficulty waiting, is uncomfortable sitting still, is always on the go). Ratings were: no problem; bit of a problem; yes, a real problem. One or more informant questionnaires were returned for 97% of Study members; if more than one, then item ratings were averaged. The informant scale was set to a Z-score, mean = 0, SD = 1.</p>
Parental recall of the Study member's ADHD as a child	<p>In 2005-2006, we separately interviewed both parents of the Study members (when Study members were age 33-34 years) using the Family History Screen protocol modified to include at least three items per disorder, and asked them if they remembered whether the Study member had core ADHD symptoms (e.g., three items: excessive talking or running about, fidgety child, has real difficulty with attention or concentration) in excess of other children their age or whether the Study member had received a diagnosis of ADHD in childhood from a doctor or a school psychologist. Either parent's report of any item was counted as confirmation of childhood onset before age 12.</p>
Life impairment	<p>At age 38, at the end of the ADHD interview module, all Study members rated whether the ADHD symptoms discussed in the interview had interfered with their life, family, friends, or work on a scale from 1 (minimal impairment) to 5 (severe impairment). The scale was converted to a Z-score, mean = 0, SD = 1.</p>
Life satisfaction	<p>At age 38, Study members completed the 5-item Satisfaction with Life Scale (Pavot &</p>

	Diener, 1993) (e.g., In most ways my life is close to ideal, So far I have gotten the important things I want in life). The scale was converted to a Z-score, mean = 0, SD = 1.
Interference types	At age 38, Study members were asked if they experienced specific problems, such as wasting time because of being disorganized, underachieving and failing to reach their potential, being exhausting and draining to others, having accidents and injuries because of over-doing it, or risky driving (speeding, tailgating). These items were under consideration as additions to DSM-5 content at the time of data collection. As they subsequently were not incorporated into DSM-5, we did not use them for making the diagnosis, but report them individually.
Received/used ADHD medication	Medication from age 21 to 38 years was ascertained from self-reports on life-calendars gathered at each assessment wave, from pharmaceutical prescription records, and from medical capture forms completed during each assessment phase, when Study members brought their medications to the assessment day. Methylphenidate, d-amphetamine, and atomoxetine were used.
Mental health measures reported in Table 2 of the main article	
<i>Measures taken in childhood</i>	
Assessment of mental disorders	Study members were assessed with the Diagnostic Interview Schedule for Children (DISC-C; Costello et al., 1982) at ages 11, 13, and 15 years. Interviewers were health professionals, not lay interviewers; they received 2 weeks of formal training, and were trained to inter-rater reliability criterion standard for ascertainment of symptoms. Re-training continued periodically to prevent drift. We report about the following DSM-III (American Psychiatric Association, 1980) disorders: conduct disorder (CD), depression, and anxiety (including separation anxiety disorder, overanxious disorder, and the phobias) up to age 15 years. (In 2001 all CD diagnoses were updated to DSM-IV.)
<i>Measures taken in adulthood</i>	
Assessment of mental disorders	Study members were assessed with the Diagnostic Interview Schedule (DIS) (Robins, 1995) at ages 18, 21, 26, 32, and 38 years (updated as per successive versions); additional information for case definition was collected from life-history calendars as reported previously (Caspi et al., 2014). Interviewers were health professionals, not lay interviewers. We report about the following DSM-III-R and IV disorders: PTSD, mania, depression, anxiety disorders (including generalized anxiety disorder, social phobia, simple phobia, agoraphobia and panic disorder, and OCD), substance dependence (including alcohol dependence, cannabis dependence, dependence on hard drugs), and tobacco

	dependence. Diagnoses of schizophrenia served as an exclusion criterion for adult ADHD. Very common disorders having a very high prevalence of brief occurrence (depression, anxiety, and substance disorders) are reported for individuals who experienced the disorders persistently, defined as having been diagnosed by the Study on two or more assessment occasions.
Suicide attempt	During standardized clinical interviews at ages 18, 21, 26, 32 and 38, Study members were questioned about suicide attempts. Interviewers differentiated between suicide attempts and non-suicidal self-harm; here we report about incidents accompanied by the intent to die, according to the Study member. All information was combined to create an overall variable of any attempted or completed suicide. Information about completed suicides was initially obtained in the course of longitudinal tracking and checked against death records (Goldman-Mellor et al. 2014).
Treatment contact for a mental health problem	Treatment contact from age 21 to 38 years was ascertained from self-reports on life-history calendars gathered at each assessment wave.
Received/used medication for a mental health problem (other than ADHD medication)	Medication from age 21 to 38 years was ascertained from self-reports on life-history calendars gathered at each assessment wave, from pharmaceutical prescription records, and from medical capture forms completed during each assessment phase, when Study members brought their medications to the assessment day.
Cognitive measures reported in Table 3 of the main article	
<i>Measures taken in childhood</i>	
Age-3 Brain Integrity Factor	We created a summary factor score via confirmatory factor analysis of five indicators of brain integrity assessed at age 3 (Caspi et al. 2014): neurological abnormalities, lack of behavioral/emotional control, receptive language, Peabody Picture Vocabulary Test, motor development (all described below). The model fit the data well, χ^2 (N = 1035, df = 5) = 6.459, p = .2641, CFI = .999, TLI = .997, RMSEA = .017. Factor scores were output and converted to a Z-score, mean = 0, SD = 1. <u>Neurological abnormalities</u> : each child was examined by a pediatric neurologist for neurologic signs, including assessment of motility, passive movements, reflexes, facial musculature, strabismus, nystagmus, foot posture, and gait, based on procedures described by Touwen and Prechtl (1970). <u>Lack of Control</u> : each study child participated in a testing session involving cognitive and motor tasks. The children were tested by examiners who had no knowledge of their behavioral history. Following the testing, each examiner rated the child's lack of control in the testing session, yielding a behavioral style factor, labeled Lack of Control (Caspi et al., 1995), which

	<p>characterized children who were labile, had low frustration tolerance, lacked reserve, were resistant, restless, impulsive, required attention, and lacked persistence in reaching goals. <u>Receptive language</u> was assessed at age 3 using the Reynell Developmental Language Scales (Reynell, 1969). <u>Intelligence</u> was assessed at age 3 with the Peabody Picture Vocabulary test (Dunn, 1995). <u>Motor development</u> was assessed at age 3 years with the Bayley Motor Scales (Bayley, 1969).</p>
Child WISC-R intelligence (IQ)	<p>The Wechsler Intelligence Scale for Children – Revised (WISC-R) (Wechsler, 1974) was administered at ages 7, 9, and 11 years. IQ scores for the three ages were averaged and standardized to a mean of 100, SD of 15.</p>
Reading achievement	<p>The Burt Word Reading Test (Scottish Council for Research in Education, 1976) was administered at ages 7, 9, and 11 years. We combined the (age-standardized) reading scores from the three age periods to form an overall score. The score was converted to a Z-score, mean = 0, SD = 1.</p>
Trail-Making test B	<p>This is a test of scanning and tracking, divided attention, and mental flexibility administered at age 13 years. The test involves drawing lines to connect consecutively numbered and lettered circles, alternating between numbers and letters. Scores represent the time, in seconds, to complete the test (Army Individual Battery, 1944).</p>
Rey Auditory Verbal Learning Test	<p>This is a test of verbal learning and memory administered at age 13 years (Lezak, 2004). The test involves a five-trial presentation of a 15-word list and a one-time presentation of an interference list. Four trials of the 15-word list were administered due to time constraints. Words are recalled immediately after each trial and later after a 25-30 minute delay. The delayed recall score was converted to a Z-score, mean = 0, SD = 1.</p>
<p><i>Measures taken in adulthood:</i> We present the Wechsler Adult Intelligence scales, CANTAB-RVP (Rapid Visual Processing; a computerized “continuous performance test”), the Trail-Making Test, and the Rey Auditory Verbal Learning Test delayed recall because these are the tests most often used in adult-ADHD research, according to prior meta-analyses (Boonstra et al. 2005; Hervey et al. 2004).</p>	
Adult WAIS-IV intelligence (IQ)	<p>At age 38 years, the Wechsler Adult Intelligence Scale-IV (WAIS-IV) (Wechsler, 2008) was administered to study members individually according to standard protocol. We report the four index scores representing major components of intelligence: Verbal Comprehension, Perceptual Reasoning, Working Memory, and Processing Speed. IQ’s have a mean of 100, SD of 15.</p>
CANTAB Rapid Visual Information Processing continuous	<p>The Cambridge Neuropsychological Test Automated Battery (CANTAB, http://cambirdgecognition.com/), administered at age 38 years, is a computerized test</p>

performance test	battery of neuropsychological functioning that uses touch-screen technology. The tests for the CANTAB have been selected based on validation in primate/rodent models and/or neuroimaging paradigms. We report about performance on Rapid Visual Information Processing, a computerized “continuous performance test” which is a key cognitive measure for ADHD. A box appears in the center of the computer screen, inside which digits, from 2 to 9, appear in a pseudo-random order, at the rate of 100 digits per minute. Subjects are requested to detect target sequences of digits (for example, 2-4-6, 3-5-7, 4-6-8) and to register responses using the press pad. We report on two measures. The first, A prime, is a measure of sustained attentional vigilance. This signal-detection measure of sensitivity to the target, regardless of response tendency (range 0.00 to 1.00; bad to good), indexes how good the subject is at detecting target sequences using "Probability of Hit" and "Probability of False Alarm." The second is a measure of false alarms. This indexes the number of times the subject jumps to respond too early, outside the response window of a target sequence. The scores were converted to a Z-score, mean = 0, SD = 1.
Trail-Making test B	This measure, administered at age 38 years, is the same as the childhood measure, except that difficulty (i.e., greater number of circles) is appropriate for adults.
Rey Auditory Verbal Learning Test	This measure, administered at age 38 years, is the same as the childhood measure.
Complaints of cognitive impairment	Study members were queried about experiencing problems related to memory, attention, and speech. Study members reported how often in the past year (never, sometimes, or often) they experienced problems with, e.g., keeping track of appointments, remembering why they went to a store, repeating the same story to someone, find multi-tasking difficult, can't think when the TV or radio is on, or have word-finding difficulty, among other items based on symptom criteria for DSM-IV Mild Neurocognitive Disorder. Scores on each of the 19 questions were summed to create an overall measure of cognitive difficulties (score range = 0 to 31; mean (SD) = 9.1(5.3); internal consistency reliability = 0.83). The complaints score was converted to a Z-score, mean = 0, SD = 1.
Polygenic risk score reported in Table 3 of the main article	
Childhood-ADHD polygenic risk score	Polygenic risk for childhood-ADHD was calculated from whole-genome SNP data and published results from genome-wide association study (GWAS) meta-analysis of childhood ADHD. Whole genome SNP genotyping was performed with the Illumina Omni Express 12v1.1 BeadChip (Illumina CA, USA) and imputed using the impute2 software (version 2.3.1, https://mathgen.stats.ox.ac.uk/impute/impute_v2.html , (Howie, Donnelly, and

	<p>Marchini 2009)) and 1000 Genomes version 3 reference panel. Imputation was conducted on autosomal SNPs appearing in dbSNP (v140) that were called in >98% of the Dunedin Study samples. Invariant SNPs were excluded. Pre-phasing and imputation were conducted using a 50M base-pair sliding window. The resulting genotype database included genotyped SNPs and SNPs imputed with 90% probability of a specific genotype in the European-descent subset of the Dunedin cohort (n=920) and in Hardy-Weinberg equilibrium ($p > 0.01$ for all). To calculate the Childhood-ADHD Polygenic Risk Score, we followed the method described by the Psychiatric Genomics Consortium (Purcell et al. 2009; Schizophrenia Working Group of the Psychiatric Genomics Consortium 2014). For each SNP in the Dunedin Study genotype database, we calculated a childhood-ADHD risk-loading according to published GWAS results (Neale et al. 2010; Smoller et al. 2013) downloaded from the Psychiatric Genomics Consortium website (http://www.med.unc.edu/pgc/downloads, accessed 12/19/2014). The risk loading was calculated as the weighted count of childhood-ADHD associated alleles, where the weight was the GWAS-estimated log odds of ADHD associated with each additional copy of the risk allele. Risk loadings were then summed across all SNPs to calculate the polygenic score. Of the SNPs included in the results file published by the Psychiatric Genomics Consortium, 1,058,303 (86%) were present in the Dunedin Study genotype database. These 1,058,303 SNPs were used to calculate the polygenic score. Score values were normally distributed in the Dunedin cohort. For analysis, score values were standardized to have mean=0, SD=1. To correct for any potential population stratification within the European-descended Dunedin sample, association analyses were conducted with statistical adjustment for the first 10 principal components estimated from the genome-wide SNP data using the EIGENSOFT smartPCA tool (Price et al. 2006; Patterson, Price, and Reich 2006). Non-Maori ancestry Study members were used, N = 839 for control, N = 53 for Child ADHD group, N = 28 for Adult ADHD group.</p>
Adult life functioning measures reported in Table 4 of the main article	
<i>Financial affairs</i>	
University degree	Self-reported educational attainment by age 38 years
Personal income	Following the New Zealand census, at age 38 years Study members were asked to list their sources of income and given the choice of 13 different income categories to allow us to calculate their total pre-tax annual income from all sources. The score was converted to

	a Z-score, mean = 0, SD = 1.
Saving behavior	Study members' attitudes toward saving and saving behaviors were assessed with six questions: "Is saving for the future important to you?", "Do you save money to buy expensive items by putting money away and not touching it?", "Do you make regular savings into a special bank account?", "Do you think that saving money makes people more independent?", "Are you often puzzled by where your money goes?", "Do you think it is important to live within your budget?" Responses (0=no, 1=yes) were summed to form a scale. The score was converted to a Z-score, mean = 0, SD = 1.
Troubles with debt & cash flow	Study members were asked about 8 types of trouble with debt and with cash flow (e.g., being turned down for a credit card, defaulting on a credit card payment, missing a bill, mortgage or loan payment). The number of troubles was summed. The score was converted to a Z-score, mean = 0, SD = 1.
Credit score	Study members' credit ratings were assessed by linking to administrative records acquired from the Veda Company, the largest credit reference agency in New Zealand and Australia. The proprietary Veda score is a numerical expression based on an analysis of a person's credit history that represents the creditworthiness of the person. Scores range from 0 to 1000, and a minimum of 700 is generally necessary for obtaining a major loan.
Duration of welfare benefits used in adulthood	We measured the length of time that Study members drew on government welfare benefits by conducting record linkage with the New Zealand Ministry of Social Development. Data on welfare benefit receipt were available from 1 January 1993, with this date marking the beginning of reliable electronic data capture in New Zealand, allowing us to measure duration of benefit use from ages 21-38 years. We obtained information about incident spells and monthly duration of the following New Zealand government benefits: Unemployed Benefit, Invalids Benefit, Sickness and Emergency Benefits, Domestic Purposes Benefit-Sole Parent and Emergency Maintenance Allowance, Training Benefit, Emergency Benefit (for those who do not usually meet entitlement conditions). Only one benefit can be received at any given time.
Insurance claims for injuries	Linked records were used to determine how many Accident Compensation Corporation (ACC)-covered approved claims for injuries study members sustained from ages 21 to 38. The ACC provides comprehensive, no-fault personal injury coverage for all New Zealand residents. Claims cover full or part treatment and associated injury costs (e.g., GP visits, prescriptions, hospital services, rehabilitation costs) as well as weekly compensation for

	earnings lost due to injury and lump sum payments for permanent disability.
<i>Criminal offending record</i>	
Number of adult criminal court convictions	We obtained records of Study members' convictions in adult criminal courts by searching the central computer systems of the New Zealand Police.
Number of driving-related convictions	A subset of adult criminal court convictions, including excess blood alcohol, speeding, driving without a license, careless and reckless causing injury, hit and run.

TABLE S2. Dunedin Study item(s) used to assess DSM-5 ADHD inattention symptoms and hyperactive/impulsive symptoms at age 38 years. Interviewers began by saying “It used to be thought that only children had problems with attention, concentration, and impulsiveness, but many adults seem to have concerns about this too. I want to ask you some questions about that. I’ll ask if any of the following apply to you very often. Think about the past 12 months. Interviewers then reviewed each statement below with the Study member. If the Study member thought the item applied, the interviewer probed to clarify, and as needed, explained examples of how the item might apply to adults.

DSM-5 ADHD Inattention Symptom	Corresponding Dunedin Study Item(s)
Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities	I often make careless mistakes, I'm not a detail person
Often has difficulty sustaining attention in tasks or play activities	I get bored quickly I can't concentrate, my mind wanders I often tune out when I should focus
Often does not seem to listen when spoken to directly	I don't listen
Often does not follow through on instructions and fails to finish schoolwork, chores or duties in the workplace (e.g., loses focus, side-tracked)	I often leave projects unfinished
Often has difficulty organizing tasks and activities	I'm messy, disorganized I have difficulty organizing tasks that have many steps
Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)	I lack self-discipline I often put off tasks that require lots of effort
Often loses things necessary for tasks or activities (e.g., school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones)	I often misplace my wallet, keys, eyeglasses, paperwork
Is often easily distracted	I'm easily distracted, I get sidetracked easily I can't resist temptation
Is often forgetful in daily activities	I miss deadlines, forget appointments, am often late I often forget to do errands, return calls, pay bills

DSM-5 ADHD Hyperactive/Impulsive Symptom	Corresponding Dunedin Study Item(s)
Often fidgets with or taps hands or feet, or squirms in seat	I often feel fidgety, restless, squirmy
Often leaves seat in situations when remaining seated is expected	I dislike quiet activities, like sitting through long meetings
Often runs about or climbs excessively in situations where it is inappropriate (adolescents or adults may be limited to feeling restless)	I get uncomfortable sitting still; I need to get up and move
Often unable to play or take part in leisure activities quietly	I'm too loud or noisy
Is often "on the go" acting as if "driven by a motor"	I often have difficulty unwinding or relaxing I'm always on the go, in a hurry, as if driven by a motor
Often talks excessively	I often talk too much
Often blurts out answers before a question has been completed*	I make "snap" decisions (too fast) I can't stop when I know I should
Often has difficulty waiting his/her turn	I have difficulty waiting; I'm impatient
Often interrupts or intrudes on others (e.g., butts into conversations or games)*	I jump into projects without reading the instructions I'm impulsive, I act without thinking about what might happen

*Pilot work showed rates of blurting answers and interrupting others were too high to discriminate, so items from the literature were used that better captured the construct of impulsivity in adults.

Coding followed clarification by the interviewer. E.g., in response to *I make snap decisions*, a Study member said "I make quick decisions, but they are not reckless. In my job, you have to think fast." In response to *I can't concentrate...*, a Study member said, "Only since I was prescribed interferon." Such responses were not coded as a symptom. In contrast, in response to *I feel fidgety, restless...*, a Study member said, "I'm always like now; I've been picking my fingernails, I've taken this pen apart and put it back together, I've gotten up twice, and I've been swinging back and forth in this chair, isn't it obvious?" In response to *I often misplace...*, a Study member said "I spend half my life looking for my stuff." Such responses were coded as a symptom.

References for Measures.

Army Individual Battery. (1944). *Manual & directions for scoring*. Washington, DC: War Department, Adjutant General's Office.

American Psychiatric Association. (1980). *Diagnostic and Statistical Manual of Mental Disorders (Revised DSM-III)* (3rd ed.). Washington, DC: American Psychiatric Association.

Barkley RA, Murphy KR, Fischer M. (2008). *ADHD in adults: What the science says*. New York, New York: Guilford Press.

Bayley, N. (1969). *The Bailey scale of infant development*. New York: The Psychological Corporation.

Boonstra AM, Oosterlaan J, Sergeant JA, Buitellar JK. (2005). Executive functioning in adult ADHD: A meta-analytic review. *Psychological Medicine*, 35, 1097-108.

Caspi, A., Henry, B., McGee, R. O., Moffitt, T. E., & et al. (1995). Temperamental origins of child and adolescent behavior problems: From age three to fifteen. *Child Development*, 66, 55-68.

Caspi, A., Houts, R., Belsky, D.W., Goldman-Mellor, S., Harrington, H.L., Israel, S., Meier, M.H., Ramrakha, S., Shalev, I., Poulton, R., Moffitt, T.E. (2014). The 'p factor': One general psychopathology factor in the structure of psychiatric disorders? *Clinical Psychological Science* 2:119-137.

Costello, A., Edelbrock, C., Kalas, R., Kessler, M., & Klaric, S. (1982). *Diagnostic interview schedule for children*. Bethesda, Md: National Institute of Mental Health.

Dunn, L. (1995). *The Peabody Picture Vocabulary Test*. Minneapolis, Minn: American Guidance Service.

Goldman-Mellor, S.J., Caspi, A., Harrington, H.L., Hogan, S., Nada-Raja, S., Poulton, R., Moffitt, T.E. (2014) Suicide attempt in young people: A signal for long-term healthcare and social needs. *JAMA Psychiatry*, 71, 119-127.

Heatherton, T. F., Kozlowski, L. T., Frecker, R. C., & Fagerstrom, K. O. (1991). The Fagerstrom Test for nicotine dependence: A revision of the Fagerstrom Tolerance Questionnaire. *British Journal of Addiction*, 86, 1119-1127.

Hervey AS, Epstein JN, Curry JF. (2004). Neuropsychology of adults with attention deficit/hyperactivity disorder: A meta-analytic review. *Neuropsychology*, 18,485-503.

Howie, B.N., P. Donnelly, and J. Marchini. (2009). A Flexible and Accurate Genotype Imputation Method for the next Generation of Genome-Wide Association Studies. *Plos Genetics* 5 (June): e1000529. 19543373.

Kessler RC, Green JG, Adler DA, Barkely RA, Chatterji S, Faraone SV, et al. (2010). Structure and diagnosis of adult attention-deficit/hyperactivity disorder: Analysis of expanded symptom criteria from the Adult ADHD Clinical Diagnostic Scale. *Archives of General Psychiatry*. 2010;:1168-78.

Lezak, M. D. (2004). *Neuropsychological Assessment - Fourth Edition* (Vol. New York): Oxford University Press.

Manuzza S. (2008). *Diagnosing ADHD in adults: DSM-IV controversies and DSM-V recommendations*. Review prepared for the American Psychiatric Association. DSM-V Disruptive Behavior Disorders Workgroup. Washington DC: American Psychiatric Association.

McGee, R., Williams, S. M., & Silva, P. A. (1985). Factor structure and correlates of inattention, hyperactivity, and antisocial behavior in a large sampe of 9 year old children. *Journal of Consulting and Clinical Psychology*, 53, 480-490.

Neale, B.M., S.E. Medland, S. Ripke, P. Asherson, B. Franke, K.-P. Lesch, S.V. Faraone, et al. (2010). Meta-Analysis of Genome-Wide Association Studies of Attention-Deficit/hyperactivity Disorder. *Journal of the American Academy of Child and Adolescent Psychiatry* 49, no. 9 (September): 884–897.

Patterson, N., A.L. Price, and D. Reich. (2006). Population Structure and Eigenanalysis. *PLoS Genetics* 2, no. 12 (December): e190.

Pavot, W., & Diener, E. (1993). Review of the Satisfaction with Life Scale. *Psychological Assessment*, 5, 164-172.

Price, A.L., N.J. Patterson, R.M. Plenge, M.E. Weinblatt, N.A. Shadick, and D. Reich. (2006). Principal Components Analysis Corrects for Stratification in Genome-Wide Association Studies. *Nature Genetics* 38 (August): 904–909.

Purcell, S.M., N.R. Wray, J.L. Stone, P.M. Visscher, M.C. O'Donovan, P.F. Sullivan, and P. Sklar. (2009). Common Polygenic Variation Contributes to Risk of Schizophrenia and Bipolar Disorder. *Nature* 460, no. 7256 (August): 748–52.

Reynell, J. (1969). *Reynell Developmental Language Scales*. London,

Robins, L. N., Cottler, L., Bucholz, K. K., & Compton, W. (1995). *Diagnostic interview schedule for DSM-IV* (Washington University School of Medicine, St. Louis).

Rutter, M., Tizard, J., & Whitmore, K. (1970). *Education, health, and behavior*. New York: Wiley.

Scottish Council for Research in Education. (1976). *The Burt Word Reading Test, 1974 revision*. London: Hodder & Stoughton.

Schizophrenia Working Group of the Psychiatric Genomics Consortium. (2014). Biological Insights from 108 Schizophrenia-Associated Genetic Loci. *Nature* 511, no. 7510 (July 24): 421–427.

Smoller, J.W., N. Craddock, K. Kendler, P.H. Lee, B.M. Neale, J.I. Nurnberger, S. Ripke, S. Santangelo, and P.F. Sullivan. (2013). Identification of Risk Loci with Shared Effects on Five Major Psychiatric Disorders: A Genome-Wide Analysis. *Lancet* ,381, no. 9875 (April): 1371–9.

Touwen, B. C., & Prechtl, H. R. (1970). The neurological examination of the child with minor nervous dysfunction *Clinics in Developmental Medicine*. No. 38 (Vol. 1970, pp. 1-105). London, England: Heineman.

Wechsler, D. (1974). *Manual of the Wechsler Intelligence Scale for Children – Revised*. New York: Psychological Corporation.

Wechsler, D. (2008) *Wechsler Adult Intelligence Scale -- Fourth Edition*. San Antonio, TX: Pearson Assessment.

TABLE S3. Correlations among various ADHD symptom measures, mental health, and neuropsychological assessments

	1	2	3	4	5	6	7	8	9	10	11	
<u>ADHD symptoms at age of diagnosis</u>												
1	Child Self-Reported ADHD symptoms	--										
<u>ADHD symptom onset before age 12 (Age 5-11 years)</u>												
2	Combined parent/teacher report	0.362	--									
<u>Confirmation across settings at age of diagnosis (Age 11-13-15 years)</u>												
3	Parent report	0.335	0.706	--								
4	Teacher report	0.320	0.639	0.426	--							
<u>Confirmation by Informant-report (Age 38 years)</u>												
5	Inattention symptoms	0.214	0.269	0.245	0.246	--						
6	Hyperactive/Impulsive symptoms	0.205	0.283	0.280	0.278	0.611	--					
<u>Self-Reported Symptom Counts (Age 38 years)</u>												
7	Inattention symptoms	0.135	0.079	0.078	0.085	0.328	0.251	--				
8	Hyperactive/Impulsive symptoms	0.182	0.131	0.149	0.130	0.244	0.364	0.605	--			
<u>Mental Health Comorbidity</u>												
9	Childhood Conduct Disorder Diagnosis	0.248	0.286	0.273	0.349	0.240	0.245	0.079	0.107	--		
10	Adult Alcohol, Drug, Cannabis Dependence	0.064	0.078	0.052	0.125	0.204	0.227	0.169	0.164	0.265	--	
<u>Neuropsychological Assessment</u>												
11	WISC-R Full-Scale IQ, Ages 7-11	-0.244	-0.377	-0.328	-0.306	-0.148	-0.187	-0.058	-0.086	-0.144	-0.012	--
12	WAIS-IV Full-Scale IQ, Age 38	-0.268	-0.359	-0.311	-0.305	-0.184	-0.262	-0.079	-0.134	-0.212	-0.093	0.791

Note: Correlation coefficients > |0.06| are significant at $p < 0.05$