

Supplementary Appendix

This appendix has been provided by the authors to give readers additional information about their work.

Supplement to: Thompson WW, Price C, Goodson B, et al. Early thimerosal exposure and neuropsychological outcomes at 7 to 10 years. *N Engl J Med* 2007;357:1281-92.

ONLINE ONLY APPENDIX: TABLE A: Exclusionary Medical Conditions

ICD-9 Code	Condition
	LOW BIRTH WEIGHT (<2500 grams)
0478	VIRAL MENINGITIS NEC
0479	VIRAL MENINGITIS NOS
0490	LYMPHOCYTIC CHORIOMENING
0498	VIRAL ENCEPHALITIS NEC
0499	VIRAL ENCEPHALITIS NOS
24200	TOX DIF GOITER NO CRISIS
243	CONGENITAL HYPOTHYROIDISM
244	ACQUIRED HYPOTHYROIDISM
2440	POSTSURGICAL HYPOTHYROID
2443	IATROGEN HYPOTHYROID NEC
2449	HYPOTHYROIDISM NOS
245	THYROIDITIS
2452	CHR LYMPHOCYT THYROIDIT
2459	THYROIDITIS NOS
2461	DYSHORMONOGENIC GOITER
2462	CYST OF THYROID
2468	DISORDERS OF THYROID NEC
2469	DISORDER OF THYROID NOS
3200	HEMOPHILUS MENINGITIS
3201	PNEUMOCOCCAL MENINGITIS
3202	STREPTOCOCCAL MENINGITIS
3203	STAPHYLOCOCC MENINGITIS
32081	ANAEROBIC MENINGITIS
32082	MNINGTS GRAM-NEG BCT NEC
3209	BACTERIAL MENINGITIS NOS
3222	CHRONIC MENINGITIS
3229	MENINGITIS NOS
3231	RICKETTSIAL ENCEPHALITIS
3234	OTH ENCEPHALIT D/T INFEC
3236	POSTINFECT ENCEPHALITIS
3239	ENCEPHALITIS NOS
3240	INTRACRANIAL ABSCESS
325	PHLEBITIS INTRCRAN SINUS
326	LATE EFF CNS ABSCESS
330	CEREBRAL DEGEN IN CHILD
3300	LEUKODYSTROPHY
3301	CEREBRAL LIPIDOSES
3308	CEREB DEGEN IN CHILD NEC
3309	CEREB DEGEN IN CHILD NOS

ICD-9 Code	Condition
36900	BOTH EYES BLIND-WHO DEF
36923	ONE EYE-MODERATE/OTH-NOS
36960	BLINDNESS, ONE EYE
3699	VISUAL LOSS NOS
3897	DEAF MUTISM NEC
7400	ANENCEPHALUS
7401	CRANIORACHISCHISIS
7410	SPINA BIF W HYDROCEPHAL
74100	SPIN BIF W HYDROCEPH NOS
74103	SPIN BIF W HYDRCEPH-LUMB
7420	ENCEPHALOCELE
7421	MICROCEPHALUS
7422	REDUCTION DEFORM, BRAIN
7423	CONGENITAL HYDROCEPHALUS
7424	BRAIN ANOMALY NEC
74300	CLINIC ANOPHTHALMOS NOS
74310	MICROPHTHALMOS NOS
74312	MICROPHTH W OTH EYE ANOM
7433	CONG CATARACT/LENS ANOM
74330	CONGENITAL CATARACT NOS
74335	CONGENITAL APHAKIA
74339	CONG CATAR/LENS ANOM NEC
74343	CONG CORNEAL OPACIT NEC
7467	HYPOPLAS LEFT HEART SYND
74682	COR TRIATRIATUM
747	OTH CONG CIRC SYST ANOM
74869	LUNG ANOMALY NEC
749	CLEFT PALATE & CLEFT LIP
7490	CLEFT PALATE
74900	CLEFT PALATE NOS
74901	UNILAT CLEFT PALATE-COMP
74902	UNILAT CLEFT PALATE-INC
74903	BILAT CLEFT PALATE-COMPL
74904	BILAT CLEFT PALATE-INC
7491	CLEFT LIP
74910	CLEFT LIP NOS
74911	UNILAT CLEFT LIP-COMPL
74912	UNILAT CLEFT LIP-IMCOMPL
74914	BILAT CLEFT LIP-INCOMPL
7492	CLEFT PALATE W CLEFT LIP
74920	CLEFT PALATE & LIP NOS

ICD-9 Code	Condition
74921	UNIL CLEFT PALAT/LIP-COM
74922	UNIL CLEFT PALAT/LIP-INC
74923	BILAT CLFT PALAT/LIP-COM
74924	BILAT CLFT PALAT/LIP-INC
74925	CLEFT PALATE & LIP NEC
75010	TONGUE ANOMALY NOS
75012	CONG ADHESIONS OF TONGUE
75015	CONG MACROGLOSSIA
75019	TONGUE ANOMALY NEC
75026	MOUTH ANOMALY NEC
75029	PHARYNGEAL ANOMALY NEC
7507	GASTRIC ANOMALY NEC
7560	ANOMAL SKULL/FACE BONES
75616	KLIPPEL-FEIL SYNDROME
758	CHROMOSOMAL ANOMALIES
7580	DOWN'S SYNDROME
7581	PATAU'S SYNDROME
7582	EDWARDS' SYNDROME
7583	AUTOSOMAL DELETION SYND
7584	BALANCE AUTOSOM TRANSLOC
7585	AUTOSOMAL ANOMALIES NEC
7586	GONADAL DYSGENESIS
7587	KLINEFELTER'S SYNDROME
7588	SEX CHROMOSOME ANOM NEC
75889	OTH CON D/T CHR M ANM NEC
7589	CHROMOSOME ANOMALY NOS
7594	CONJOINED TWINS
7595	TUBEROUS SCLEROSIS
7596	HAMARTOSES NEC
7597	MULT CONGEN ANOMAL NEC
75981	PRADER-WILLI SYNDROME
75983	FRAGILE X SYNDROME
7600	MATERN HYPERTEN AFF NB
7601	MATERN URINE DIS AFF NB
7602	MATERNAL INFEC AFF NB
7603	MATERN CARDIORESP AFF NB
76070	NOXIOUS SUBST NOS AFF NB
76071	MATERNAL ALCOHOL AFF NB
76072	MATERNAL NARCOTIC AFF NB
76073	MATERNAL HALLUCIN AFF NB
76075	COCAINE - NXS INFL FETUS

ICD-9 Code	Condition
76079	NOXIOUS SUBST NEC AFF NB
7608	MATERNAL COND NEC AFF NB
7611	PREMAT RUPT MEMB AFF NB
7612	OLIGOHYDRAMNIOS AFF NB
7613	POLYHYDRAMNIOS AFF NB
7615	MULT PREGNANCY AFF NB
7617	ANTEPART MALPRES AFF NB
7618	MATERN COMPL NEC AFF NB
7640	LT-FOR-DATES W/O FET MAL
76400	LIGHT-FOR-DATES WTNOS
76401	LIGHT-FOR-DATES <500G
76402	LT-FOR-DATES 500-749G
76403	LT-FOR-DATES 750-999G
76404	LT-FOR-DATES 1000-1249G
76405	LT-FOR-DATES 1250-1499G
76406	LT-FOR-DATES 1500-1749G
76407	LT-FOR-DATES 1750-1999G
76408	LT-FOR-DATES 2000-2499G
7641	LT-FOR-DATES W FETAL MAL
76410	LT-FOR-DATE W/MAL WTNOS
76413	LT-DATE W/MAL 750-999G
76418	LT-DATE W/MAL 2000-2499G
7649	FETAL GROWTH RETARD NOS
76490	FET GROWTH RETARD WTNOS
76492	FET GROWTH RET 500-749G
76493	FET GROWTH RET 750-999G
76494	FET GRWTH RET 1000-1249G
76495	FET GRWTH RET 1250-1499G
76496	FET GRWTH RET 1500-1749G
76497	FET GRWTH RET 1750-1999G
76498	FET GRWTH RET 2000-2499G
765	EXTREME IMMATURITY
7650	EXTREME IMMATURITY
76500	EXTREME IMMATUR WTNOS
76501	EXTREME IMMATUR <500G
76502	EXTREME IMMATUR 500-749G
76503	EXTREME IMMATUR 750-999G
76504	EXTREME IMMAT 1000-1249G
76505	EXTREME IMMAT 1250-1499G
76506	EXTREME IMMAT 1500-1749G
76507	EXTREME IMMAT 1750-1999G

ICD-9 Code	Condition
76508	EXTREME IMMAT 2000-2499G
7651	OTHER PRETERM INFANTS
76510	PRETERM INFANT NEC WTNOS
76511	PRETERM NEC <500G
76512	PRETERM NEC 500-749G
76513	PRETERM NEC 750-999G
76514	PRETERM NEC 1000-1249G
76515	PRETERM NEC 1250-1499G
76516	PRETERM NEC 1500-1749G
76517	PRETERM NEC 1750-1999G
76518	PRETERM NEC 2000-2499G
767	BIRTH TRAUMA
7670	CEREBRAL HEM AT BIRTH
768	INTRAUTERINE ASPHYXIA
7681	FET DEATH-ANOXIA DUR LAB
7685	SEVERE BIRTH ASPHYXIA
769	RESPIRATORY DISTRESS SYN
7702	NB INTERSTIT EMPHYSEMA
7703	NB PULMONARY HEMORRHAGE
7707	PERINATAL CHR RESP DIS
7721	NB INTRAVENTRICULAR HEM
7722	NB SUBARACHNOID HEMORR
7725	NB ADRENAL HEMORRHAGE
7757	LATE METAB ACIDOSIS NB
7762	DISSEM INTRAVASC COAG NB
7790	CONVULSIONS IN NEWBORN
7792	CNS DYSFUNCTION SYN NB
7794	NB DRUG REACTION/INTOXIC
7795	NB DRUG WITHDRAWAL SYNDR
V310	TWIN, MATE LB-IN HOSP
V3100	TWIN-MATE LB-HOSP W/O CS
V3101	TWIN-MATE LB-IN HOS W CS
V311	TWIN, MATE LB-BEFORE ADM
V3200	TWIN-MATE SB-HOSP W/O CS
V3201	TWIN-MATE SB-HOSP W CS
V3300	TWIN-NOS-IN HOSP W/O CS
V3301	TWIN-NOS-IN HOSP W CS
V331	TWIN NOS-BEFORE ADMISSN
V3400	OTH MULT LB-HOSP W/O CS
V3401	OTH MULT LB-IN HOSP W CS
V370	MULT BIRTH NOS-IN HOSP

ICD-9 Code	Condition
V3700	MULT BRTH NOS-HOS W/O CS
V3701	MULT BIRTH NOS-HOSP W CS
V3710	MULT BIRTH NOS-HOSP

ONLINE ONLY APPENDIX: TABLE B: Frequencies of vaccine types in resolved vaccine histories and amount of mercury assigned for each receipt

Vaccine Type	Mercury Amount (Micrograms)	Frequency	Comment
DT Td	25	23	Diphtheria and tetanus toxoids (pediatric and adult)
DTP	25	1487	Diphtheria and tetanus toxoids and pertussis
DTP-HIB	25	1332	Combined DTP- <i>Haemophilus influenzae</i> type b (HIB)
DTaP	25	137	Diphtheria and tetanus toxoids and acellular pertussis
DTaP-HIB	25	4	Combined DTaP-HIB
Flu	12.5	4	Influenza
HBIG	25	8	Hepatitis B immune globulin
HIB	0	47	<i>Haemophilus influenzae</i> type b MercAmt=0 if Connaught/Merieux/Pasteur PRP-T ActHIB, or SKB/GSK PRP-T OmniHIB
HIB	12.5	475	<i>Haemophilus influenzae</i> type b MercAmt=12.5 if MSD PedVax-HIB
HIB	25	989	H. influenzae type b MercAmt=25 if Lederle/Praxis/WAL HbOC Hibtiter.
HepA	0	5	Hepatitis A
HepB	12.5	2844	Hepatitis B
MMR	0	19	Measles, Mumps, Rubella
Pneumo	0	92	Pneumococcal
Polio	0	2754	Polio
TT	25	3	Tetanus toxoid
Varicel	0	3	Varicella
X01DTaP	0	9	X01 Experimental DTaP
X02(DTaP)	25	9	X02 Experimental (Acelimmune)
X03	25	3	X03 Experimental (Tetracel)
X03(D-H)	25	3	X03 Experimental (Tetracel)
X10	0	6	X10 Experimental Meningococcal
DTaP-HepB	12.5	6	Experimental combined DTaP-HepB
		10277	

ONLINE ONLY APPENDIX: TABLE C: Neuropsychological outcomes assessed in study

Domain and Test	Measurement Instrument	Subtest(s)/Constructs Tested	Outcome
<u>Speech & Language</u>			
Boston Naming Test	Boston Naming Test	Naming vocabulary	Total number of correctly-named pictures
NEPSY: Speeded Naming	NEPSY	Language subtests: • Speeded Naming (rapid access to/production of names of recurring colors, sizes, shapes)	Total score (based on Time to Completion and Total Number Correct)
NEPSY: Comprehension of Instructions		Language subtests: • Comprehension of Instructions (process/respond quickly to verbal instructions of increasing syntactic complexity)	Total correct responses
CELF: Formulated Sentences	Clinical Evaluation of Language Fundamentals—Third Edition (CELF-3)	Expressive language subtests: • Formulated Sentences (formulation of simple, compound, complex sentences)	Total score based on completeness of sentence
CELF: Recalling Sentences		Expressive language subtests: • Recalling Sentences (recall/ reproduction of sentence surface structure as a function of syntactic complexity)	Total score based on accuracy of sentence recall
GFTA: Articulation (lower = better)	Goldman-Fristoe 2 Test of Articulation (GFTA-2)	Sounds-in-Words (spontaneous speech production of single words)	Total number of articulation errors
Stuttering: Assessor Rating (lower = better)	Iowa Scale for Rating Severity of Stuttering	Speech/language dysfluencies	Clinical assessor rating (1 if mild stuttering or above during testing, 0 if less than mild)
Stuttering: Parent Rating (lower = better)		Speech/language dysfluencies	Parent rating rating (1 if mild stuttering or above during testing, 0 if less than mild)
Stuttering: Teacher Rating (lower = better)		Speech/language dysfluencies	Teacher rating rating (1 if mild stuttering or above during testing, 0 if less than mild)
<u>Verbal Memory</u>			
CVLT-C: Free Recall, No Delay	California Verbal Learning Test—Children’s Version (CVLT-C)	Immediate free recall	Total number correctly recalled
CVLT-C: Free Recall, Short Delay		Short delay free recall	Total number correctly recalled
CVLT-C: Cued Recall, Short Delay		Short delay cued recall	Total number correctly recalled
CVLT-C: Free Recall, Long Delay		Long delay free recall	Total number correctly recalled
CVLT-C: Cued Recall, Long Delay		Long delay cued recall	Total number correctly recalled
CMS Stories 1: Immediate Recall	Children’s Memory Scale Stories 1	Immediate recall of connected, meaningful text	Total number correctly recalled story units
CMS Stories 2: Delayed Recall	Children’s Memory Scale Stories 2	Delayed recall of connected, meaningful text	Total number correctly recalled story units
<u>Achievement</u>			
WJIII: Letter- Word Identification	Woodcock-Johnson Psycho-Educational	Letter-Word Identification (phonemic	Total number correct

	Battery-Revised: Tests of Achievement	awareness--ability to match a rebus with actual picture; ability to identify isolated letters and words)	converted to "W" [Rasch logit score]
<u>Fine Motor Coordination</u>			
Grooved Pegboard: Dominant Hand (lower=better)	Grooved Pegboard	Manipulative dexterity	Total time to completion: dominant hand
Grooved Pegboard: Non-dom Hand (lower=better)		Manipulative dexterity	Total time to completion: non-dominant hand
Finger Tapping: Dominant Hand	Finger Tapping Test	Manipulative dexterity	Maximum number of taps: dominant hand
Finger Tapping: Non-dominant Hand		Manipulative dexterity	Maximum number of taps: non-dominant hand
<u>Visual Spatial Ability</u>			
Stanford Binet: Copying	Stanford-Binet Intelligence Test Copying subtest	Visuomotor coordination (reproduce designs with blocks/ copy simple and complex geometric patterns from pictures on cards)	Total number correct
<u>Attention/Executive Functioning</u>			
GDS Vigilance Task: Correct Responses	Gordon Diagnostic System (GDS)	Vigilance Task: ability to respond accurately and quickly to presentation of paired numbers on screen	Number correct responses
GDS Vigilance Task: Errors (lower = better)		Vigilance Task: ability to respond accurately and quickly to presentation of paired numbers on screen	Number commissions
WISC III: Digit Span, Forward Recall	WISC III Digit Span subtest	Memory for digit strings	Score for digits forwards
WISC III: Digit Span, Backward Recall		Memory for digit strings	Score for digits backwards
WISC III: Digit Span, Combined		Memory for digit strings	Combined score
BRIEF Parent Rating: Metacognition (lower = better)	Behavior Rating Inventory of Executive Function (BRIEF)	Metacognition Index (child's ability to plan, organize, sustain future-oriented problem solving in working memory)	Parent rating: Total score
BRIEF Teacher Rating: Metacognition (lower = better)		Metacognition Index (child's ability to plan, organize, sustain future-oriented problem solving in working memory)	Teacher rating: Total score
<u>Behavior Regulation (lower = better)</u>			
CRS-R Parent Rating: Hyperactive/Impulsive	Conners' Rating Scales—Revised (CRS-R)	Hyperactive-Impulsive (cluster of symptoms on DSM-IV diagnosis of ADHD--predominantly hyperactivity-impulsivity)	Parent rating: Total score
CRS-R Teacher Rating: Hyperactive/Impulsive		Hyperactive-Impulsive (cluster of symptoms on DSM-IV diagnosis of ADHD--predominantly hyperactivity-impulsivity)	Teacher rating: Total score
CRS-R Parent Rating: Inattentive		Inattentive (cluster of symptoms on DSM-IV diagnosis of ADHD--predominantly inattention)	Parent rating: Total score
CRS-R Teacher Rating: Inattentive		Inattentive (cluster of symptoms on DSM-IV diagnosis of ADHD--predominantly inattention)	Teacher rating: Total score
BRIEF Parent Rating: Behavior Regulation	Behavior Rating Inventory of Executive Function (BRIEF)	Behavioral Regulation Index (shifting of cognitive set and modulating emotions and behavior to achieve goal)	Parent rating: Total score
BRIEF Teacher Rating: Behavior Regulation		Behavioral Regulation Index (shifting of cognitive set and modulating emotions and behavior to achieve goal)	Teacher rating: Total score
<u>Tics (lower = better)</u>			
Motor tics (current): Assessor Rating	Yale Global Tic Severity Scale	Motor tics	Clinical assessor report of any motor tics during assessment
Phonics tics (current): Assessor Rating		Phonic tics	Clinical assessor report of any phonic tics during assessment

Motor tics (current): Parent Rating	Motor tics	Parent reported on any motor tics shown by their child in the seven days prior to and including the day of assessment
Phonics tics (current): Parent Rating	Phonic tics	Parent reported on any phonic tics shown by their child in the seven days prior to and including the day of assessment

General Intellectual Functioning

WASI Verbal IQ	WASI	Verbal subtests: <ul style="list-style-type: none"> • Vocabulary (oral definition of orally-presented words) • Similarities (state rule for how two objects or concepts are similar) 	Verbal IQ standard score (Mean =100, Standard deviation=15)
WASI Performance IQ		Performance subtests: <ul style="list-style-type: none"> • Block Design (2-dimensional geometric patterns to be replicated with two-color cubes) • Matrix Reasoning (choosing piece of matrix that best completes the designs—untimed; taps analogic reasoning, spatial visualization, visuospatial reasoning) 	Performance IQ standard score (M=100, SD=15)
WASI Full Scale IQ		Verbal subtests: <ul style="list-style-type: none"> • Vocabulary (oral definition of orally-presented words) • Similarities (state rule for how two objects or concepts are similar) Performance subtests: <ul style="list-style-type: none"> • Block Design (2-dimensional geometric patterns to be replicated with two-color cubes) • Matrix Reasoning (choosing piece of matrix that best completes the designs—untimed; taps analogic reasoning, spatial visualization, visuospatial reasoning) 	Full scale IQ standard score (M=100, SD=15)

ONLINE ONLY APPENDIX: TABLE D: Construction of the tics and stuttering variables

Tics

The study collected information on children's tics from two sources: the parent reported on any tics shown by their child currently (in the seven days prior to and including the day of assessment) or ever, and the clinical assessor reported on any tics manifested by the child during the testing session. Parents were given instructions on how to recognize phonic and motor tics, and were asked to indicate whether the child exhibited each type of tic. The clinical assessors were provided with standardized training on how tics might be manifested in children.

Four binary outcome variables were created to indicate the presence of tics:

- Any motor tic observed by the clinical assessor at the time of the testing;
- Any phonics tic observed by the clinical assessor at the time of the testing;
- Any current motor tic reported by the child's mother;
- Any current phonics tic reported by the child's mother.

1. Separate tic variables were constructed for the assessor and the parent for three reasons:

- The two types of reporters did not agree on which children had tics. Although both the parents and the clinical assessors identified 95 children with motor tics, only 22 of the 95 children were identified by both as having motor tics. The clinical assessors identified 73 children as having motor tics that were not identified by the parents, and the parents identified a different 73 children as having motor tics that were not identified by the assessors. Similarly, assessors identified 76 children as having phonic tics, the parents identified 107 children as having phonic tics, and only 17 children were identified as having phonic tics by both assessors and parents.
- There are logical reasons to believe that the two reporters might identify different children as having tics, based on the fact that parents have a more thorough knowledge of their child in various types of situations but the assessor, unlike the parent, was observing the child in a potentially stressful situation where any tics might be likely to appear.
- In previous studies using tics as a child outcome, physician reports are the commonly used basis for identifying tics. Since physician reports of tics are likely to reflect parent report rather than direct physician observation of tics, we wanted to maintain a tic variable that comes closest to approximating the reporting basis in the literature.

2. Our rationale for constructing separate variables for motor and phonics tics rather than combining them into a single binary variable (any type of tic or none) is as follows. When clinicians discuss tics, they typically are referring to motor tics. In order to

maintain a variable that links most directly to the way the field thinks about tics, we decided to create separate variables for motor and phonics tics.

3. Although both the parent and the assessor could report multiple types of motor or phonics tics, we constructed a binary variable (any tic) rather than a count of tics, since we believed that the actual number of tics identified may not have been reliable.
4. Parents reported both any current motor or phonics tics and any tics that the child *ever* manifested. We decided to construct the tic variables for parents based only on their reports of current tics. This is based on the recommendation of our technical expert that transient tics are less likely to be severe or notable and therefore should not be considered.

Stuttering

The study collected information on children's stuttering from three sources: the parent reported on whether the child currently stuttered; the clinical assessor reported on any stuttering exhibited by the child during the testing session; and teachers were asked to report on any stuttering by the child while in school. Each reporter was asked to indicate the severity of the child's stuttering on a 7-point scale, where 1 = very mild and 7 = very severe.

Three binary outcome variables were created to indicate the presence of stuttering:

- Any stuttering observed by the clinical assessor during the testing;
- Any stuttering reported by the parent;
- Any stuttering at school reported by the teacher.

1. Reports on stuttering from parents, clinical assessors, and teachers were kept separate, to maintain parallelism with the tic variables.

2. A child was identified as having a stutter only if the reporter indicated the severity of the stuttering was at least 2 on the 7-point scale, where 2 = mild. This means that no stuttering and very mild stuttering form the "0" value on the binary stuttering variable and mild to very severe (2 and above) form the "1" value. This criterion was based on a recommendation by the technical expert, who felt that a child rated as having very mild stuttering probably does not have a stuttering disorder.

Online Only Appendix: Table E: Attention Deficit/Hyperactivity Disorder Stimulants *

Focalin ®
Ritalin ®
Methylin ®
Ritalin SR ®
Methylin ER ®
Metadate ER ®
Ritalin LA ®
Metadate CD ®
Concerta ®
Desoxyn ®
Dextroamphetamine tablets (generic)
DextroStat tablets ®
Dexedrine tablets ®
Adderall tablets ®
Dexedrine Spansules ®
Adderall XR capsules ®

* The CDC does not endorse the use of any of these medications.

Online Only Appendix: Table F: A Priori-Selected Variables and Variables Tested for Inclusion as Covariates in All Models

Variable	Description / Levels
Variables Included in Every Model (a priori selected)	
<i>ChildAge</i>	Child Age (Yrs) at assessment
<i>sexmale</i>	Sex of child 0=female, 1=male
<i>Birth weight</i>	1 = if birth weight 2500-2999 grams 2 = Birth weight 3000-3999 grams 3 = Birth weight 4000+ grams
<i>Maternal IQ</i>	1= Score in lower third of distribution 2= Score in middle third of distribution 3= Score in upper third of distribution
<i>HOME_TotalIndex</i>	“HOME” Total Index
<i>PctPovertyI</i>	(Percent of poverty line)/100
<i>Maternal Education</i>	0= No HS degree 1=High school diploma or GED 2=attended some college, but no degree 3=Associate’s degree or higher
<i>SingleParent</i>	Child lives in a single parent household (0/1)
<i>Site</i>	HMO-A HMO-B HMO-C HMO-D
Variables Tested for Inclusion: Child and Family Characteristics	
<i>Computer Experience</i>	0=No experience 1=some experience 2=much experience.
<i>Maternal Age</i>	1= Maternal Age at Ch Birth: <=16 years 2=Maternal Age at Ch Birth: 17-39 years 3=Maternal Age at Ch Birth: >=40 years
<i>OlderSibs</i>	Child has an older sibling (0/1)
<i>YoungerSibs</i>	Child has a younger sibling (0/1)
<i>DayCareCentr</i>	# of center-based day care settings prior to KG
<i>DayCareHome</i>	# of home-based day care settings prior to KG
<i>EngOnly</i>	English only at home
<i>Breast Feeding (Duration)</i>	0 = Breast Fed: <1mo 1 =Breast Fed: 1-6mos 2 = Breast Fed: 6+ mos
Variables Tested for Inclusion: Child Birth Conditions	
<i>cMedicalHist_1</i>	=1 if birth head CM +/- 2SD from Mean
<i>C5APGARImpValI</i>	5-minute apgar
Variables Tested for Inclusion: Prenatal Exposures (non-vaccine related)	
<i>PreNatNicotine_1</i>	Used tobacco during pregnancy
<i>PreNatAlcohol_1</i>	0=never - 4 heavy
<i>Tuna Consumption</i>	0= no consumption of tuna during pregnancy. 1 = moderate consumption (less than one serving/week) 2 = high consumption (more than one serving per week)
<i>PreNatFish_1</i>	1= if mother reported eating tuna, and ocean fish, and home-caught fish during pregnancy. 0 = else.

Variable	Description / Levels
<i>PreNatOrgMerc_1</i>	Use of mercury-containing contact lens solutions or nasal sprays during pregnancy.
<i>PreNatHomePro_1</i>	Prenatal exposure to mercury from home products
<i>Tooth Amalgams</i>	0 = mother had no amalgam fillings during pregnancy 1 = had amalgam fillings, but no dental work and did not chew gum during pregnancy 2 = had amalgam fillings and had dental work or chewed gum during pregnancy.
<i>PreNatlead_1</i>	Prenatal exposure to lead from occupational or residential sources
<i>PreNatIllDrug</i>	1=Cocaine or Narcotic
Variables Tested for Inclusion: Child Medical Conditions	
<i>IronDef_1</i>	Anemia or iron deficiency
<i>ADHDstimulant</i>	Use of ADHD stimulant in 12 hours prior to assessment
<i>ChdPICA_1</i>	Child Pica
Variables Tested for Inclusion: Maternal Diagnoses	
<i>MatLangDel</i>	Maternal Language Delay
<i>MatSpeechDel</i>	Maternal speech delay
<i>MatSTUTTER</i>	Maternal stuttering
<i>MatADHD</i>	Maternal ADHD
<i>MatTIC</i>	Maternal tics
Variables Tested for Inclusion: Quadratic and Cubic Forms	
<i>ChildAge2</i>	$ChildAge^{**2}$ (squared)
<i>ChildAge3</i>	$ChildAge^{**3}$ (cubed)
<i>PctPoverty1_2</i>	$(PctPoverty1/100)^{**2}$ (squared)
<i>PctPoverty1_3</i>	$(PctPoverty1/100)^{**3}$ (cubed)
<i>HOME_TotalIndex2</i>	$HOME_TotalIndex^{**2}$ (squared)
<i>HOME_TotalIndex3</i>	$HOME_TotalIndex^{**3}$ (cubed)