Abt Associates Inc.

Infant Environmental Exposure to Thimerosal and Neuropsychological Outcomes at Ages 7 to 10 Years

Technical Report Volume II

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The interpretations of results presented in this report represent the views of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention (CDC).

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1. Appendix A. Note Concerning Results from Preliminary Analyses

The document you are reading presents final analysis results. A preliminary draft of this document exists that presents results of preliminary analyses. The preliminary analyses differ from the final analyses in that seven records that were included in the preliminary data set were omitted from the data set used in the final analysis. The reason for the omission of the seven records was a late discovery that the seven omitted children had conditions that made them ineligible for inclusion in the study. A comparison of results presented in the preliminary draft and final technical report will show that practically every number in every table changed at least a small amount after the omission of the seven subjects. However, the omission of the seven subjects from the final data set did not change the conclusions. A comparison of the executive summaries of the preliminary draft and final technical report will show that the conclusions that we draw from both sets analyses are the same.

2. Appendix B: Full Detail of Results from Model 1

This appendix presents the full detail of results of fitting Model 1 to the data. The results shown in this appendix include the parameter estimates corresponding to all covariates, the model r-square, and the root mean squared error (residual variance)[1]. Those details are not available in the model summaries presented in Volume 1 of the technical report. Since the full detail requires almost a full page of output per outcome measure, and there were 42 outcome measures, we have elected to show the full output only for Model 1. However, the parameter estimates corresponding to each covariate, the r-squares, and the root mean squared error are quite similar across all of the models. Model 1 was of the form:

Model (1) Specification: Main Effects of Prenatal, and Cumulative Exposures from Birth to 7 Months

$$Y = \beta_0 + \beta_1 preNatThimer + \beta_2 Exp07mos + \sum_j \alpha_j oe_j + \sum_k \alpha_{j+k} cf_k + \sum_l \alpha_{j+k+l} St_l + \varepsilon$$

$$H_0 : \beta_1 = 0 \quad vs \quad H_a : \beta_1 \neq 0$$

$$H_0 : \beta_2 = 0 \quad vs \quad H_a : \beta_2 \neq 0$$

For further details on the specification and interpretation of this model see Section 9.2.2.2 and Chapter 8.

List of Appendix B Exhibits **Page**

[1] For logistic models, other model fit statistics are provided.

Exhibit B.1. Boston Naming Test
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

The GLM Procedure

Dependent Variable: Lg_BNameAvRS Boston Naming Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	32	34029.87700	1063.43366	33.28	<.0001
Error	1012	32336.83496	31.95339		
Corrected Total	1044	66366.71196			

R-Square	Coeff Var	Root MSE	Lg_BNameAvRS Mean
0.512755	14.29288	5.652733	39.54928

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		13.26384173	B	2.55874663	5.18	<.0001
PreNatThimer		0.03157685		0.02155435	1.46	0.1432
Exp07mos		0.05036176		0.03021654	1.67	0.0959
ChildAge		3.14029140		0.16834791	18.65	<.0001
sexmale		-0.27668807		0.36352476	-0.76	0.4468
ChdBWT_Grp	1	-1.79458543	B	0.72209605	-2.49	0.0131
ChdBWT_Grp	2	0.57839207	B	0.50343510	1.15	0.2509
ChdBWT_Grp	3	0.00000000	B	.	.	.
ComputerExpr	0	-1.35656559	B	1.83382910	-0.74	0.4596
ComputerExpr	1	-1.25586857	B	0.36599907	-3.43	0.0006
ComputerExpr	2	0.00000000	B	.	.	.
MomIQ1	1	-4.58212922	B	0.53544159	-8.56	<.0001
MomIQ1	2	-2.49340325	B	0.47117174	-5.29	<.0001
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		0.28004612		0.10086004	2.78	0.0056
PctPoverty1		0.13057668		0.07600496	1.72	0.0861
MomEduc	0	-2.16707379	B	0.95016045	-2.28	0.0228
MomEduc	1	-1.35139108	B	0.57735420	-2.34	0.0194
MomEduc	2	-0.99321329	B	0.44300846	-2.24	0.0252
MomEduc	3	0.00000000	B	.	.	.
SingleParent		-1.16453521		0.47491967	-2.45	0.0144
Site	HMO-A	-1.06508096	B	0.78181153	-1.36	0.1734
Site	HMO-B	-2.23996193	B	0.74474265	-3.01	0.0027
Site	HMO-C	-0.15893959	B	0.75630451	-0.21	0.8336
Site	HMO-D	0.00000000	B	.	.	.
cMedicalHist_1		-1.70680103		1.17488674	-1.45	0.1466
MatAgeCat	1	-3.92178945	B	3.39571193	-1.15	0.2484
MatAgeCat	2	-1.02524961	B	0.71294386	-1.44	0.1507
MatAgeCat	3	0.00000000	B	.	.	.
OlderSibs		-2.17130647		0.41110162	-5.28	<.0001
YoungerSibs		-1.14642332		0.40474470	-2.83	0.0047
EngOnly		0.57867685		0.39645895	1.46	0.1447
BFMthsCat	0	-2.30914337	B	0.51137450	-4.52	<.0001
BFMthsCat	1	-1.66382407	B	0.42065404	-3.96	<.0001
BFMthsCat	2	0.00000000	B	.	.	.
PreNatFish_1		-1.26417662		0.72040703	-1.75	0.0796
PreNatFillings_1		0.36392898		0.23516162	1.55	0.1220
PreNatlead_1		1.33542867		0.50681670	2.63	0.0085
MatSpeechDel		-5.31364038		1.80798731	-2.94	0.0034
MatSTUTTER		2.87951242		1.73055138	1.66	0.0964

Exhibit B.2. NEPSY Speeded Naming
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: Lg_SpNameAvRS NEPSY Speed Naming Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	46	19980.60523	434.36098	8.87	<.0001
Error	993	48606.45631	48.94910		
Corrected Total	1039	68587.06154			

R-Square	Coeff Var	Root MSE	Lg_SpNameAvRS Mean
0.291317	25.54493	6.996363	27.38846

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		-78.31532186	B	165.7132326	-0.47	0.6366
PreNatThimer		0.05698564		0.0269089	2.12	0.0344
Exp07mos		0.01046886		0.0382567	0.27	0.7844
ChildAge		25.99248887		55.2242466	0.47	0.6380
sexmale		-1.09857494		0.4556445	-2.41	0.0161
ChdBWT_Grp	1	-0.29929651	B	0.9002651	-0.33	0.7396
ChdBWT_Grp	2	0.77113679	B	0.6279252	1.23	0.2197
ChdBWT_Grp	3	0.00000000	B	.	.	.
ComputerExpr	0	-2.46517469	B	2.2829974	-1.08	0.2805
ComputerExpr	1	-0.44239126	B	0.4576485	-0.97	0.3339
ComputerExpr	2	0.00000000	B	.	.	.
MomIQ1	1	-2.47605350	B	0.6729542	-3.68	0.0002
MomIQ1	2	-1.14234777	B	0.5878222	-1.94	0.0523
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		0.24014202		0.1264958	1.90	0.0579
PctPoverty1		0.04712537		0.5393311	0.09	0.9304
MomEduc	0	0.96114904	B	1.2123279	0.79	0.4281
MomEduc	1	-0.83829700	B	0.7316522	-1.15	0.2522
MomEduc	2	-0.16345944	B	0.5537258	-0.30	0.7679
MomEduc	3	0.00000000	B	.	.	.
SingleParent		-1.05644638		0.6138278	-1.72	0.0855
Site	HMO-A	-1.08147832	B	0.9890701	-1.09	0.2745
Site	HMO-B	-1.62471118	B	0.9499549	-1.71	0.0875
Site	HMO-C	-0.79619912	B	0.9640932	-0.83	0.4091
Site	HMO-D	0.00000000	B	.	.	.
MatLangDel		-14.67379579		3.5388622	-4.15	<.0001
OlderSibs		-1.06097056		0.5174337	-2.05	0.0406
BFMthsCat	0	-1.16932389	B	0.6439213	-1.82	0.0697
BFMthsCat	1	-1.20378251	B	0.5270575	-2.28	0.0226
BFMthsCat	2	0.00000000	B	.	.	.
DayCareHomeImpVal1		-0.31789030		0.1575087	-2.02	0.0438
MatADHD		-3.55763896		2.0893364	-1.70	0.0889
PreNatTuna_1		-0.67515297		0.4280837	-1.58	0.1151
PreNatFish_1		-1.33859376		0.9177241	-1.46	0.1450
PreNatOrgMerc_1		0.44551899		0.4903860	0.91	0.3638
cMedicalHist_1		-3.24057573		1.4920607	-2.17	0.0301
PreNatHomePro_1		-0.70951775		1.1791159	-0.60	0.5475
PreNatNicotine_1		0.64464156		0.8648675	0.75	0.4562
IronDef_1		0.98116171		1.5414430	0.64	0.5246
PreNatlead_1		-0.42737036		0.6414262	-0.67	0.5054
MatAgeCat	1	-2.96693886	B	4.2167401	-0.70	0.4818
MatAgeCat	2	-0.89440260	B	0.8902325	-1.00	0.3153
MatAgeCat	3	0.00000000	B	.	.	.
YoungerSibs		0.26622769		0.5143292	0.52	0.6048
PreNatFillings_1		0.10994066		0.2969427	0.37	0.7113
ChildAge2		-2.12285080		6.0865905	-0.35	0.7273
MatSpeechDel		-0.95340632		2.4393244	-0.39	0.6960
ChildAge3		0.06325015		0.2219330	0.28	0.7757
PreNatIllDrug		-0.53262416		2.2657188	-0.24	0.8142
PreNatAlcohol_1		-0.29025946		0.6428030	-0.45	0.6517
ADHDstimulant		-1.05876667		5.1809639	-0.20	0.8381
EngOnly		0.05928041		0.4990834	0.12	0.9055
PctPoverty1_2		-0.00989205		0.0693830	-0.14	0.8867
PctPoverty1_3		0.00043194		0.0023736	0.18	0.8556

Exhibit B.3. NEPSY: Comprehension of Instructions
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: Lg_CmpInstAvRS NEPSY Comp Instr. Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	46	2077.789737	45.169342	7.24	<.0001
Error	987	6153.722835	6.234775		
Corrected Total	1033	8231.512573			

R-Square	Coeff Var	Root MSE	Lg_CmpInstAvRS Mean
0.252419	10.58829	2.496953	23.58221

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		72.88634471	B	59.89765986	1.22	0.2240
PreNatThimer		-0.00170198		0.00963411	-0.18	0.8598
Exp07mos		-0.01384076		0.01363245	-1.02	0.3102
ChildAge		-18.73468706		19.95138368	-0.94	0.3480
sexmale		-0.38101058		0.16319723	-2.33	0.0198
ChdBWT_Grp	1	-0.93788963	B	0.32171421	-2.92	0.0036
ChdBWT_Grp	2	-0.09883282	B	0.22462738	-0.44	0.6600
ChdBWT_Grp	3	0.00000000	B	.	.	.
ComputerExpr	0	0.48657578	B	0.81011199	0.60	0.5482
ComputerExpr	1	-0.39181877	B	0.16386797	-2.39	0.0170
ComputerExpr	2	0.00000000	B	.	.	.
MomIQ1	1	-0.95368410	B	0.23831762	-4.00	<.0001
MomIQ1	2	-0.44280267	B	0.21141127	-2.09	0.0365
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		0.03573767		0.04588473	0.78	0.4363
PctPoverty1		0.03394969		0.08618562	0.39	0.6937
MomEduc	0	0.36457345	B	0.43391636	0.84	0.4010
MomEduc	1	-0.80400954	B	0.26179794	-3.07	0.0022
MomEduc	2	-0.10833003	B	0.19851375	-0.55	0.5854
MomEduc	3	0.00000000	B	.	.	.
SingleParent		-0.30863143		0.21920901	-1.41	0.1595
Site	HMO-A	-0.66122105	B	0.35510828	-1.86	0.0629
Site	HMO-B	-1.34091481	B	0.34038544	-3.94	<.0001
Site	HMO-C	-0.35632597	B	0.34499957	-1.03	0.3019
Site	HMO-D	0.00000000	B	.	.	.
cMedicalHist_1		-0.34957214		0.53447432	-0.65	0.5132
OlderSibs		-0.25456221		0.18618118	-1.37	0.1718
DayCareCentrImpVal1		0.11065818		0.08045073	1.38	0.1693
DayCareHomeImpVal1		-0.03926991		0.05638960	-0.70	0.4863
BFMthsCat	0	-0.66414771	B	0.23068748	-2.88	0.0041
BFMthsCat	1	-0.55430678	B	0.19011493	-2.92	0.0036
BFMthsCat	2	0.00000000	B	.	.	.
PreNatNicotine_1		0.47282178		0.30831362	1.53	0.1255
PreNatAlcohol_1		-0.24926412		0.22978339	-1.08	0.2783
PreNatTuna_1		-0.12320654		0.15414205	-0.80	0.4243
PreNatFish_1		-0.53996533		0.32361640	-1.67	0.0955
PreNatOrgMerc_1		-0.09278619		0.17365822	-0.53	0.5933
PreNatHomePro_1		-0.25035961		0.42088192	-0.59	0.5521
PreNatFillings_1		0.04987063		0.10589567	0.47	0.6378
PreNatlead_1		0.13402931		0.22967631	0.58	0.5597
PreNatIllDrug		-1.15713417		0.84506766	-1.37	0.1712
C5APGARImpVal1		0.23750942		0.16269257	1.46	0.1446
IronDef_1		-0.87097292		0.56180415	-1.55	0.1214
ADHDstimulant		-0.89234232		1.83867608	-0.49	0.6276
MatLangDel		-2.50338062		1.16289459	-2.15	0.0316
MatADHD		-1.54350704		0.74321653	-2.08	0.0381
ChildAge2		2.23612984		2.19784125	1.02	0.3092
ChildAge3		-0.08456667		0.08010472	-1.06	0.2914
PctPoverty1_2		-0.00173183		0.00493053	-0.35	0.7255
MatAgeCat	1	0.49939025	B	1.50500066	0.33	0.7401
MatAgeCat	2	-0.13538721	B	0.32308536	-0.42	0.6753
MatAgeCat	3	0.00000000	B	.	.	.
YoungerSibs		0.05479397		0.18352175	0.30	0.7653
MatSTUTTER		-0.28707537		0.76493445	-0.38	0.7075

Exhibit B.4. CELF Formulated Sentences
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: Lg_FormSentAvRS CELF Form. Sent. Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	32	16072.10381	502.25324	16.58	<.0001
Error	1005	30441.23049	30.28978		
Corrected Total	1037	46513.33430			

R-Square	Coeff Var	Root MSE	Lg_FormSentAvRS Mean
0.345538	16.80172	5.503615	32.75626

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		-294.1688122	B	129.2939776	-2.28	0.0231
PreNatThimer		0.0206316		0.0210386	0.98	0.3270
Exp07mos		-0.0353459		0.0298594	-1.18	0.2368
ChildAge		99.8717662		43.0652155	2.32	0.0206
sexmale		-1.3523269		0.3544627	-3.82	0.0001
ChdBWT_Grp	1	-1.2902228	B	0.7023029	-1.84	0.0665
ChdBWT_Grp	2	-0.2915012	B	0.4913627	-0.59	0.5531
ChdBWT_Grp	3	0.0000000	B	.	.	.
ComputerExpr	0	-2.7162028	B	1.7805550	-1.53	0.1275
ComputerExpr	1	-1.2789855	B	0.3582740	-3.57	0.0004
ComputerExpr	2	0.0000000	B	.	.	.
MomIQ1	1	-2.3776226	B	0.5206969	-4.57	<.0001
MomIQ1	2	-0.8929757	B	0.4599295	-1.94	0.0525
MomIQ1	3	0.0000000	B	.	.	.
HOME_TotalIndex		0.2231898		0.0983038	2.27	0.0234
PctPoverty1		0.7962807		0.4160459	1.91	0.0559
MomEduc	0	-0.1022727	B	0.9551492	-0.11	0.9148
MomEduc	1	-0.9644015	B	0.5701448	-1.69	0.0911
MomEduc	2	-0.2315903	B	0.4335640	-0.53	0.5934
MomEduc	3	0.0000000	B	.	.	.
SingleParent		-0.5519178		0.4732947	-1.17	0.2438
Site	HMO-A	-0.0137480	B	0.7672633	-0.02	0.9857
Site	HMO-B	-0.6987726	B	0.7384662	-0.95	0.3442
Site	HMO-C	-0.2264769	B	0.7462420	-0.30	0.7616
Site	HMO-D	0.0000000	B	.	.	.
cMedicalHist_1		-0.3749213		1.1462229	-0.33	0.7437
OlderSibs		-0.8971647		0.3692729	-2.43	0.0153
DayCareCentrImpVal1		0.2929033		0.1771604	1.65	0.0986
EngOnly		0.4415360		0.3881414	1.14	0.2556
BFMthsCat	0	-1.7746478	B	0.4997335	-3.55	0.0004
BFMthsCat	1	-1.3376430	B	0.4124649	-3.24	0.0012
BFMthsCat	2	0.0000000	B	.	.	.
IronDef_1		-2.1187129		1.2053180	-1.76	0.0791
MatLangDel		-6.8380665		2.5262935	-2.71	0.0069
MatSTUTTER		2.2505982		1.6394625	1.37	0.1701
ChildAge2		-10.2902098		4.7438472	-2.17	0.0303
ChildAge3		0.3593357		0.1728818	2.08	0.0379
PctPoverty1_2		-0.0800451		0.0540627	-1.48	0.1390
PctPoverty1_3		0.0023580		0.0018571	1.27	0.2045

Exhibit B.5. CELF Recalling Sentences
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: VM_RecallAvRS CELF Recall Sent Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	31	79114.8819	2552.0930	19.17	<.0001
Error	1012	134706.3594	133.1091		
Corrected Total	1043	213821.2414			

R-Square	Coeff Var	Root MSE	VM_RecallAvRS Mean
0.370005	25.87636	11.53729	44.58621

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		474.7469455	B	269.8818473	1.76	0.0789
PreNatThimer		0.0583376		0.0441694	1.32	0.1869
Exp07mos		-0.0012758		0.0619430	-0.02	0.9836
ChildAge		-158.1731118		89.8948626	-1.76	0.0788
sexmale		-2.2218299		0.7366337	-3.02	0.0026
ChdBWT_Grp	1	-2.2631940	B	1.4546415	-1.56	0.1201
ChdBWT_Grp	2	0.8762690	B	1.0286244	0.85	0.3945
ChdBWT_Grp	3	0.0000000	B	.	.	.
MomIQ1	1	-5.0096449	B	1.0963081	-4.57	<.0001
MomIQ1	2	-2.5950611	B	0.9639369	-2.69	0.0072
MomIQ1	3	0.0000000	B	.	.	.
HOME_TotalIndex		0.3621710		0.2048746	1.77	0.0774
PctPoverty1		0.4303716		0.1538895	2.80	0.0053
MomEduc	0	-1.1225375	B	1.9417653	-0.58	0.5633
MomEduc	1	-2.8261947	B	1.1740503	-2.41	0.0163
MomEduc	2	-1.1197988	B	0.9037697	-1.24	0.2156
MomEduc	3	0.0000000	B	.	.	.
SingleParent		-0.4088831		0.9596929	-0.43	0.6702
Site	HMO-A	-4.1651845	B	1.6105310	-2.59	0.0098
Site	HMO-B	-6.3492629	B	1.5584792	-4.07	<.0001
Site	HMO-C	-2.6126886	B	1.5758253	-1.66	0.0976
Site	HMO-D	0.0000000	B	.	.	.
OlderSibs		-1.5075229		0.7746319	-1.95	0.0519
EngOnly		1.7772630		0.8042134	2.21	0.0273
BFMthsCat	0	-5.6728451	B	1.0413507	-5.45	<.0001
BFMthsCat	1	-3.9963418	B	0.8568564	-4.66	<.0001
BFMthsCat	2	0.0000000	B	.	.	.
PreNatAlcohol_1		-1.4078271		1.0169841	-1.38	0.1666
PreNatFish_1		-2.6350368		1.4776522	-1.78	0.0748
PreNatlead_1		3.1533990		1.0453869	3.02	0.0026
C5APGARImpVal1		1.0165340		0.7405143	1.37	0.1701
IronDef_1		-4.6321803		2.5276600	-1.83	0.0672
MatSpeechDel		-4.7108007		3.6744741	-1.28	0.2001
MatSTUTTER		5.9556787		3.5264614	1.69	0.0916
MatADHD		-5.7106614		3.4043814	-1.68	0.0938
ChildAge2		18.2829053		9.9055123	1.85	0.0652
ChildAge3		-0.6764510		0.3611075	-1.87	0.0613

Exhibit B.6. GFTA Articulation
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: TC_GFTA_RS Speech Raw Score

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	26	481.776646	18.529871	5.89	<.0001
Error	998	3139.058476	3.145349		
Corrected Total	1024	3620.835122			

R-Square	Coeff Var	Root MSE	TC_GFTA_RS Mean
0.133057	112.7699	1.773513	1.572683

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		2.184106199	B	1.30767629	1.67	0.0952
PreNatThimer		-0.001681739		0.00677173	-0.25	0.8039
Exp07mos		0.010989318		0.00953203	1.15	0.2492
ChildAge		-0.335770021		0.05294890	-6.34	<.0001
sexmale		0.309241850		0.11402936	2.71	0.0068
ChdBWT_Grp	1	0.087190533	B	0.22425276	0.39	0.6975
ChdBWT_Grp	2	-0.066484274	B	0.15922566	-0.42	0.6764
ChdBWT_Grp	3	0.000000000	B	.	.	.
MomIQ1	1	0.675136454	B	0.16298171	4.14	<.0001
MomIQ1	2	0.271325325	B	0.14722860	1.84	0.0656
MomIQ1	3	0.000000000	B	.	.	.
HOME_TotalIndex		0.040888053		0.03162265	1.29	0.1963
PctPoverty1		-0.196711925		0.13486060	-1.46	0.1450
MomEduc	0	0.202327849	B	0.30575873	0.66	0.5083
MomEduc	1	-0.017913800	B	0.18324002	-0.10	0.9221
MomEduc	2	0.181393996	B	0.13976709	1.30	0.1946
MomEduc	3	0.000000000	B	.	.	.
SingleParent		0.348951971		0.15017792	2.32	0.0203
Site	HMO-A	-0.017356888	B	0.24703215	-0.07	0.9440
Site	HMO-B	0.414210254	B	0.23934383	1.73	0.0838
Site	HMO-C	-0.169760559	B	0.24064098	-0.71	0.4807
Site	HMO-D	0.000000000	B	.	.	.
OlderSibs		0.144415023		0.11977698	1.21	0.2282
PreNatAlcohol_1		0.235616771		0.15520587	1.52	0.1293
C5APGARImpVal1		0.156190987		0.11495753	1.36	0.1746
IronDef_1		-0.636392049		0.38769247	-1.64	0.1010
MatLangDel		1.700103087		0.88307927	1.93	0.0545
MatSpeechDel		1.125568971		0.59130094	1.90	0.0573
MatADHD		-0.711886401		0.52698986	-1.35	0.1770
PctPoverty1_2		0.025328738		0.01759814	1.44	0.1504
PctPoverty1_3		-0.000869133		0.00060485	-1.44	0.1510

Exhibit B.7. Stuttering Assessor Rating
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Response Variable St_CAStuttYN Stut CA 0=None/Very Mild, 1=Mild-Severe

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	308.428	328.905
SC	313.378	442.752
-2 Log L	306.428	282.905

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	23.5223	22	0.3728
Score	24.9441	22	0.2998
Wald	22.2754	22	0.4436

Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-84.9793	130.8	0.4223	0.5158
PreNatThimer		1	-0.00249	0.0214	0.0136	0.9072
Exp07mos		1	0.0257	0.0328	0.6127	0.4338
ChildAge		1	27.4389	43.5315	0.3973	0.5285
sexmale		1	0.3552	0.3641	0.9517	0.3293
ChdBWT_Grp	1	1	-0.1497	0.5870	0.0650	0.7987
ChdBWT_Grp	2	1	-0.8866	0.4345	4.1635	0.0413
MomIQ1	1	1	-0.4608	0.5256	0.7686	0.3807
MomIQ1	2	1	-0.3168	0.4700	0.4542	0.5003
HOME_TotalIndex		1	0.00850	0.0979	0.0075	0.9308
PctPoverty1		1	-0.9822	0.7444	1.7411	0.1870
MomEduc		1	-0.2365	0.2306	1.0524	0.3050
SingleParent		1	0.1314	0.4393	0.0894	0.7649
Site	HMO-A	1	1.1660	1.1200	1.0838	0.2979
Site	HMO-B	1	1.0414	1.0874	0.9172	0.3382
Site	HMO-C	1	1.1291	1.0674	1.1191	0.2901
ChildAge2		1	-3.0005	4.7954	0.3915	0.5315
ChildAge3		1	0.1082	0.1748	0.3832	0.5359
PctPoverty1_2		1	0.1814	0.1614	1.2632	0.2611
PctPoverty1_3		1	-0.0101	0.0103	0.9722	0.3241
MatSTUTTER		1	2.0608	0.8463	5.9296	0.0149
PreNatAlcohol_1		1	-1.0067	0.9999	1.0137	0.3140
PreNatlead_1		1	-1.0074	0.7536	1.7871	0.1813

Association of Predicted Probabilities and Observed Responses

Percent Concordant	69.7	Somers' D	0.417
Percent Discordant	28.0	Gamma	0.427
Percent Tied	2.3	Tau-a	0.027
Pairs	35280	c	0.709

Exhibit B.8. Stuttering Parent Rating
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Response Variable St_PStuttYN Stut Parent 0=None/Very Mild, 1=Mild-Severe

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	237.555	228.995
SC	242.497	308.069
-2 Log L	235.555	196.995

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	38.5606	15	0.0007
Score	39.5563	15	0.0005
Wald	30.3583	15	0.0107

Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	0.6378	2.7914	0.0522	0.8193
PreNatThimer		1	-0.0243	0.0484	0.2511	0.6163
Exp07mos		1	0.0198	0.0428	0.2142	0.6435
ChildAge		1	-0.1677	0.2027	0.6845	0.4080
sexmale		1	0.4412	0.4372	1.0184	0.3129
ChdBWT_Grp	1	1	-1.4497	0.8526	2.8908	0.0891
ChdBWT_Grp	2	1	-1.4775	0.4726	9.7754	0.0018
MomIQ1	1	1	-0.1301	0.6683	0.0379	0.8456
MomIQ1	2	1	-0.1366	0.6260	0.0476	0.8273
HOME_TotalIndex		1	-0.0851	0.1126	0.5719	0.4495
PctPoverty1		1	0.0742	0.0798	0.8649	0.3524
MomEduc		1	-0.6189	0.2631	5.5330	0.0187
SingleParent		1	-0.2470	0.5897	0.1754	0.6753
Site	HMO-A	1	-1.5606	1.1142	1.9616	0.1613
Site	HMO-B	1	0.5187	0.8507	0.3717	0.5421
Site	HMO-C	1	-1.9090	1.2475	2.3419	0.1259

Association of Predicted Probabilities and Observed Responses

Percent Concordant	81.5	Somers' D	0.646
Percent Discordant	16.9	Gamma	0.657
Percent Tied	1.6	Tau-a	0.031
Pairs	25250	c	0.823

Exhibit B.9. Stuttering Teacher Rating
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Response Variable St_TStuttYN Stut Teacher 0=None/Very Mild, 1=Mild-Severe

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	440.084	440.791
SC	444.675	550.958
-2 Log L	438.084	392.791

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	45.2938	23	0.0037
Score	44.9569	23	0.0040
Wald	37.4822	23	0.0289

Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-5.3379	2.1090	6.4060	0.0114
PreNatThimer		1	-0.0417	0.0296	1.9781	0.1596
Exp07mos		1	0.0105	0.0251	0.1767	0.6742
ChildAge		1	0.00315	0.1335	0.0006	0.9812
sexmale		1	0.6361	0.2907	4.7901	0.0286
ChdBWT_Grp	1	1	-0.2577	0.6215	0.1718	0.6785
ChdBWT_Grp	2	1	0.1120	0.4096	0.0748	0.7845
MomIQ1	1	1	0.1293	0.3829	0.1140	0.7357
MomIQ1	2	1	-0.0312	0.3659	0.0073	0.9321
HOME_TotalIndex		1	-0.0583	0.0758	0.5924	0.4415
PctPoverty1		1	0.8247	0.3854	4.5788	0.0324
MomEduc		1	-0.1387	0.1843	0.5663	0.4518
SingleParent		1	0.0419	0.3765	0.0124	0.9114
Site	HMO-A	1	1.1728	1.0716	1.1979	0.2737
Site	HMO-B	1	1.6493	1.0552	2.4428	0.1181
Site	HMO-C	1	1.0845	1.0710	1.0254	0.3112
cMedicalHist_1		1	1.9016	0.6875	7.6520	0.0057
PctPoverty1_2		1	-0.1102	0.0513	4.6185	0.0316
PctPoverty1_3		1	0.00363	0.00167	4.7294	0.0297
ComputerExpr		1	0.3975	0.2806	2.0073	0.1565
MatLangDel		1	2.1954	1.3372	2.6952	0.1007
PreNatAlcohol_1		1	0.7872	0.3345	5.5371	0.0186
PreNatFish_1		1	-1.5721	1.0304	2.3275	0.1271
YoungerSibs		1	-0.5900	0.3088	3.6500	0.0561

Association of Predicted Probabilities and Observed Responses

Percent Concordant	71.7	Somers' D	0.442
Percent Discordant	27.5	Gamma	0.446
Percent Tied	0.8	Tau-a	0.072
Pairs	43095	c	0.721

Exhibit B.10. CVLT-C: Free Recall, No Delay
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: VM_ListAAvRS CVLT-C List A

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	43	24873.56236	578.45494	7.92	<.0001
Error	1002	73189.77607	73.04369		
Corrected Total	1045	98063.33843			

R-Square	Coeff Var	Root MSE	VM_ListAAvRS Mean
0.253648	18.37479	8.546560	46.51243

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Exp07mos		-0.0014601		0.0463218	-0.03	0.9749
ChildAge		40.0396472		67.0656506	0.60	0.5506
sexmale		-2.7960804		0.5520300	-5.07	<.0001
ChdBWT_Grp	1	-0.0289279	B	1.0942747	-0.03	0.9789
ChdBWT_Grp	2	0.8375671	B	0.7642235	1.10	0.2734
ChdBWT_Grp	3	0.0000000	B	.	.	.
ComputerExpr	0	-3.9816622	B	2.7899981	-1.43	0.1539
ComputerExpr	1	0.2025319	B	0.5587695	0.36	0.7171
ComputerExpr	2	0.0000000	B	.	.	.
MomIQ1	1	-1.2252718	B	0.8176679	-1.50	0.1343
MomIQ1	2	-1.3278792	B	0.7182360	-1.85	0.0648
MomIQ1	3	0.0000000	B	.	.	.
HOME_TotalIndex		0.0254206		0.1529476	0.17	0.8680
PctPoverty1		-0.0874369		0.1156620	-0.76	0.4498
MomEduc	0	0.7389514	B	1.4540728	0.51	0.6114
MomEduc	1	-1.1172077	B	0.8841993	-1.26	0.2067
MomEduc	2	-0.1541189	B	0.6752065	-0.23	0.8195
MomEduc	3	0.0000000	B	.	.	.
SingleParent		-0.4407390		0.7356496	-0.60	0.5492
Site	HMO-A	-1.7649713	B	1.2025156	-1.47	0.1425
Site	HMO-B	-2.0314219	B	1.1559289	-1.76	0.0792
Site	HMO-C	-1.7804534	B	1.1698760	-1.52	0.1283
Site	HMO-D	0.0000000	B	.	.	.
cMedicalHist_1		-3.9756126		1.7887773	-2.22	0.0265
OlderSibs		0.0420325		0.6291971	0.07	0.9468
YoungerSibs		0.4092631		0.6022305	0.68	0.4969
EngOnly		-0.9365292		0.6073030	-1.54	0.1234
BFMthsCat	0	-2.2343974	B	0.7834515	-2.85	0.0044
BFMthsCat	1	-0.4658447	B	0.6429206	-0.72	0.4689
BFMthsCat	2	0.0000000	B	.	.	.
PreNatNicotine_1		-1.1896030		1.0541051	-1.13	0.2594
PreNatAlcohol_1		-0.8912145		0.7816746	-1.14	0.2545
PreNatFish_1		-0.8661441		1.0910622	-0.79	0.4275
PreNatOrgMerc_1		0.4548557		0.5938518	0.77	0.4439
PreNatHomePro_1		1.9664834		1.4422216	1.36	0.1730
PreNatFillings_1		0.5688949		0.3593613	1.58	0.1137
PreNatlead_1		1.0034697		0.7798818	1.29	0.1985
PreNatIllDrug		1.8539007		2.7672795	0.67	0.5031
C5APGARImpVal1		1.2197863		0.5513071	2.21	0.0272
IronDef_1		-1.3382919		1.8805642	-0.71	0.4769
ChdPICA_1		-2.4476328		1.3510224	-1.81	0.0703
MatLangDel		-14.7323196		4.2674976	-3.45	0.0006
MatSpeechDel		-3.1253598		2.9733547	-1.05	0.2935
MatSTUTTER		3.2990484		2.6285833	1.26	0.2097
ChildAge2		-3.4766808		7.3908544	-0.47	0.6382
ChildAge3		0.1073600		0.2694583	0.40	0.6904
DayCareHomeImpVal1		0.0034352		0.1922330	0.02	0.9857
DayCareCentrImpVal1		-0.1926815		0.2749624	-0.70	0.4836

Exhibit B.11. CVLT-C: Free Recall, Short Delay
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: VM_ShortFreeAvRS CVLT-C Short/Free Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	26	1630.716668	62.719872	10.45	<.0001
Error	1020	6123.789540	6.003715		
Corrected Total	1046	7754.506208			

R-Square	Coeff Var	Root MSE	VM_ShortFreeAvRS Mean
0.210293	25.18317	2.450248	9.729704

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		-10.22350914	B	6.04514299	-1.69	0.0911
PreNatThimer		-0.00132494		0.00935569	-0.14	0.8874
Exp07mos		-0.02396012		0.01301597	-1.84	0.0659
ChildAge		3.64307351		1.31837024	2.76	0.0058
sexmale		-0.80564230		0.15628193	-5.16	<.0001
ChdBWT_Grp	1	-0.22525888	B	0.31117060	-0.72	0.4693
ChdBWT_Grp	2	0.13367297	B	0.21747060	0.61	0.5389
ChdBWT_Grp	3	0.00000000	B	.	.	.
MomIQ1	1	-0.17121820	B	0.22440066	-0.76	0.4456
MomIQ1	2	-0.10233292	B	0.20110663	-0.51	0.6110
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		0.04122073		0.04341280	0.95	0.3426
PctPoverty1		0.10837933		0.08130346	1.33	0.1828
MomEduc	0	-0.18056989	B	0.41431359	-0.44	0.6631
MomEduc	1	-0.05600533	B	0.24951602	-0.22	0.8224
MomEduc	2	-0.19329619	B	0.19037729	-1.02	0.3102
MomEduc	3	0.00000000	B	.	.	.
SingleParent		-0.44998996		0.20555349	-2.19	0.0288
Site	HMO-A	-0.47960977	B	0.33317373	-1.44	0.1503
Site	HMO-B	-0.26552857	B	0.32026960	-0.83	0.4073
Site	HMO-C	-0.12753643	B	0.32396497	-0.39	0.6939
Site	HMO-D	0.00000000	B	.	.	.
cMedicalHist_1		-1.32294083		0.50920389	-2.60	0.0095
EngOnly		-0.53340190		0.17020715	-3.13	0.0018
PreNatTuna_1		-0.19733320		0.14590768	-1.35	0.1765
PreNatlead_1		0.43928421		0.21838134	2.01	0.0445
MatLangDel		-4.40686621		1.11073964	-3.97	<.0001
ChildAge2		-0.14592623		0.07184216	-2.03	0.0425
PctPoverty1_2		-0.00760962		0.00470424	-1.62	0.1061
PreNatAlcohol_1		-0.14930585		0.21426407	-0.70	0.4861
DayCareHomeImpVal1		-0.04615687		0.05396560	-0.86	0.3926

Exhibit B.12. CVLT-C: Cued Recall, Short Delay
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: VM_ShortCueAvRS CVLT-C Short/Cued Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	27	1366.503674	50.611247	11.13	<.0001
Error	1017	4625.146087	4.547833		
Corrected Total	1044	5991.649761			

R-Square	Coeff Var	Root MSE	VM_ShortCueAvRS Mean
0.228068	20.70355	2.132565	10.30048

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		-6.013391672	B	5.49333986	-1.09	0.2739
PreNatThimer		-0.000914404		0.00808648	-0.11	0.9100
Exp07mos		-0.005348102		0.01139559	-0.47	0.6389
ChildAge		2.431741176		1.14755922	2.12	0.0343
sexmale		-0.935770174		0.13612686	-6.87	<.0001
ChdBWT_Grp	1	-0.141917935	B	0.27126098	-0.52	0.6010
ChdBWT_Grp	2	0.282275839	B	0.18995550	1.49	0.1376
ChdBWT_Grp	3	0.000000000	B	.	.	.
MomIQ1	1	-0.535271086	B	0.19534969	-2.74	0.0063
MomIQ1	2	-0.652892185	B	0.17586999	-3.71	0.0002
MomIQ1	3	0.000000000	B	.	.	.
HOME_TotalIndex		0.031186644		0.03746888	0.83	0.4054
PctPoverty1		0.034546063		0.02865502	1.21	0.2283
MomEduc	0	0.350289890	B	0.35608300	0.98	0.3255
MomEduc	1	0.188231291	B	0.21634517	0.87	0.3845
MomEduc	2	0.104683464	B	0.16620288	0.63	0.5289
MomEduc	3	0.000000000	B	.	.	.
SingleParent		-0.051954422		0.17918336	-0.29	0.7719
Site	HMO-A	-0.357187785	B	0.29121091	-1.23	0.2203
Site	HMO-B	-0.260549824	B	0.27920044	-0.93	0.3509
Site	HMO-C	-0.014797193	B	0.28199885	-0.05	0.9582
Site	HMO-D	0.000000000	B	.	.	.
cMedicalHist_1		-1.085451218		0.44347356	-2.45	0.0145
OlderSibs		0.235389207		0.15498663	1.52	0.1291
YoungerSibs		0.302694003		0.14971292	2.02	0.0435
DayCareHomeImpVal1		-0.074461833		0.04728739	-1.57	0.1156
EngOnly		-0.222527896		0.14778227	-1.51	0.1324
PreNatHomePro_1		0.595804995		0.35253497	1.69	0.0913
C5APGARImpVal1		0.187202913		0.13681798	1.37	0.1715
MatLangDel		-2.569128679		1.05441660	-2.44	0.0150
MatSpeechDel		-1.187527734		0.71062708	-1.67	0.0950
ChildAge2		-0.086257924		0.06254121	-1.38	0.1681

Exhibit B.13. CVLT-C: Free Recall, Long Delay
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: VM_LongFreeAvRS CVLT-C Long /Free Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	33	1531.391040	46.405789	9.14	<.0001
Error	1010	5128.851134	5.078070		
Corrected Total	1043	6660.242174			

R-Square	Coeff Var	Root MSE	VM_LongFreeAvRS Mean
0.229930	21.70484	2.253457	10.38228

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		-7.596713867	B	5.81898944	-1.31	0.1920
PreNatThimer		0.000895765		0.00858354	0.10	0.9169
Exp07mos		-0.019361223		0.01204991	-1.61	0.1084
ChildAge		2.954670870		1.21697627	2.43	0.0154
sexmale		-0.915895568		0.14451900	-6.34	<.0001
ChdBWT_Grp	1	-0.330076151	B	0.28753109	-1.15	0.2513
ChdBWT_Grp	2	0.198244243	B	0.20057619	0.99	0.3232
ChdBWT_Grp	3	0.000000000	B	.	.	.
MomIQ1	1	-0.288308823	B	0.21259978	-1.36	0.1754
MomIQ1	2	-0.285246682	B	0.18814713	-1.52	0.1298
MomIQ1	3	0.000000000	B	.	.	.
HOME_TotalIndex		-0.001388907		0.04022558	-0.03	0.9725
PctPoverty1		0.123308303		0.07718701	1.60	0.1105
MomEduc	0	-0.035427132	B	0.38218000	-0.09	0.9262
MomEduc	1	-0.082356169	B	0.23243989	-0.35	0.7232
MomEduc	2	-0.170383501	B	0.17658558	-0.96	0.3348
MomEduc	3	0.000000000	B	.	.	.
SingleParent		0.061069068		0.19553692	0.31	0.7549
Site	HMO-A	-0.236554785	B	0.30927892	-0.76	0.4445
Site	HMO-B	-0.222943355	B	0.29659287	-0.75	0.4524
Site	HMO-C	-0.011421889	B	0.30060307	-0.04	0.9697
Site	HMO-D	0.000000000	B	.	.	.
cMedicalHist_1		-1.342397219		0.48212710	-2.78	0.0055
YoungerSibs		0.410133456		0.14821523	2.77	0.0058
DayCareCentrImpVal1		-0.116030664		0.07205770	-1.61	0.1077
DayCareHomeImpVal1		-0.105037534		0.05034330	-2.09	0.0372
EngOnly		-0.349722640		0.15839800	-2.21	0.0275
PreNatTuna_1		-0.191825599		0.13510883	-1.42	0.1560
PreNatOrgMerc_1		0.272879178		0.15545040	1.76	0.0795
PreNatHomePro_1		0.635003766		0.37474200	1.69	0.0905
PreNatlead_1		0.328514276		0.20321226	1.62	0.1063
C5APGARImpVal1		0.197623064		0.14486259	1.36	0.1728
ADHDstimulant		-2.668081874		1.61096950	-1.66	0.0980
MatLangDel		-5.287765928		1.02616058	-5.15	<.0001
ChildAge2		-0.114980359		0.06631638	-1.73	0.0833
PctPoverty1_2		-0.006633540		0.00442267	-1.50	0.1340
BFMthsCat	0	-0.163820652	B	0.20383899	-0.80	0.4218
BFMthsCat	1	0.145140955	B	0.16882125	0.86	0.3901
BFMthsCat	2	0.000000000	B	.	.	.

Exhibit B.14. CVLT-C: Cued Recall, Long Delay
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: VM_LongCueAvRS CVLT-C Long /Cued Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	49	1582.692548	32.299848	6.76	<.0001
Error	993	4743.171306	4.776608		
Corrected Total	1042	6325.863854			

R-Square	Coeff Var	Root MSE	VM_LongCueAvRS Mean
0.250194	20.52515	2.185545	10.64813

Parameter		Estimate		Stand.Error	t Value	Pr > |t|
Intercept		-14.31151450	B	51.77926534	-0.28	0.7823
PreNatThimer		0.00481781		0.00842896	0.57	0.5677
Exp07mos		0.00107857		0.01194847	0.09	0.9281
ChildAge		5.04757296		17.25753928	0.29	0.7700
sexmale		-0.99505010		0.14214153	-7.00	<.0001
ChdBWT_Grp	1	-0.54282104	B	0.28143379	-1.93	0.0540
ChdBWT_Grp	2	0.16811535	B	0.19633121	0.86	0.3920
ChdBWT_Grp	3	0.00000000	B	.	.	.
ComputerExpr	0	-0.08046415	B	0.71372090	-0.11	0.9103
ComputerExpr	1	0.23215784	B	0.14314051	1.62	0.1051
ComputerExpr	2	0.00000000	B	.	.	.
MomIQ1	1	-0.43724066	B	0.21057464	-2.08	0.0381
MomIQ1	2	-0.57733795	B	0.18382857	-3.14	0.0017
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		-0.00219414		0.03949204	-0.06	0.9557
PctPoverty1		0.03755111		0.16809320	0.22	0.8233
MomEduc	0	0.10460954	B	0.38044074	0.27	0.7834
MomEduc	1	-0.05179932	B	0.22863064	-0.23	0.8208
MomEduc	2	-0.00434358	B	0.17323122	-0.03	0.9800
MomEduc	3	0.00000000	B	.	.	.
SingleParent		0.15067701		0.19342940	0.78	0.4362
Site	HMO-A	-0.42117030	B	0.30908842	-1.36	0.1733
Site	HMO-B	-0.25555154	B	0.29732616	-0.86	0.3903
Site	HMO-C	-0.22264102	B	0.30112027	-0.74	0.4599
Site	HMO-D	0.00000000	B	.	.	.
cMedicalHist_1		-1.27965136		0.46876335	-2.73	0.0064
MatAgeCat	1	-1.80895472	B	1.31807637	-1.37	0.1702
MatAgeCat	2	-0.09961466	B	0.27754203	-0.36	0.7197
MatAgeCat	3	0.00000000	B	.	.	.
YoungerSibs		0.41623627		0.15997669	2.60	0.0094
DayCareCentrImpVal1		-0.12163182		0.07069385	-1.72	0.0856
DayCareHomeImpVal1		-0.08978717		0.04933409	-1.82	0.0691
EngOnly		-0.21986374		0.15664611	-1.40	0.1608
PreNatAlcohol_1		-0.20392381		0.20098568	-1.01	0.3105
PreNatTuna_1		-0.20744451		0.13378156	-1.55	0.1213
PreNatFish_1		0.33285835		0.28521176	1.17	0.2435
PreNatOrgMerc_1		0.20878834		0.15226501	1.37	0.1706
PreNatHomePro_1		0.50670651		0.36836178	1.38	0.1693
PreNatFillings_1		0.07535705		0.09241557	0.82	0.4150
PreNatlead_1		0.22414587		0.20044561	1.12	0.2637
PreNatIllDrug		0.68768231		0.70782278	0.97	0.3315
C5APGARImpVal1		0.11604524		0.14160926	0.82	0.4127
ADHDstimulant		-2.33507689		1.63927324	-1.42	0.1546
MatLangDel		-2.90852545		1.10884245	-2.62	0.0088
MatSTUTTER		0.36591554		0.68211065	0.54	0.5918
MatADHD		-0.34119490		0.65308934	-0.52	0.6015
IronDef_1		-0.23572296		0.48217446	-0.49	0.6250
ChildAge2		-0.30102541		1.90193051	-0.16	0.8743
ChildAge3		0.00529197		0.06934424	0.08	0.9392
OlderSibs		0.01863494		0.16223243	0.11	0.9086
BFMthsCat	0	-0.08093778	B	0.20186775	-0.40	0.6885
BFMthsCat	1	-0.00135962	B	0.16596848	-0.01	0.9935
BFMthsCat	2	0.00000000	B	.	.	.
PreNatNicotine_1		-0.00362278		0.27200918	-0.01	0.9894
MatSpeechDel		-0.12384504		0.77679536	-0.16	0.8734
PctPoverty1_2		0.00316573		0.02165587	0.15	0.8838
PctPoverty1_3		-0.00031250		0.00074148	-0.42	0.6735

Exhibit B.15. CMS Stories 1: Immediate Recall
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: VM_CMS1AvRS CMS Stories 1(Immed) Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	27	126410.6776	4681.8769	38.51	<.0001
Error	1010	122799.7203	121.5839		
Corrected Total	1037	249210.3979			

R-Square	Coeff Var	Root MSE	VM_CMS1AvRS Mean
0.507245	23.28359	11.02651	47.35742

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		1953.076109	B	258.5935106	7.55	<.0001
PreNatThimer		0.023843		0.0419105	0.57	0.5695
Exp07mos		-0.030354		0.0595439	-0.51	0.6103
ChildAge		-662.714977		86.1364286	-7.69	<.0001
sexmale		-3.093166		0.7072651	-4.37	<.0001
ChdBWT_Grp	1	-2.969500	B	1.3898014	-2.14	0.0329
ChdBWT_Grp	2	-0.213248	B	0.9770122	-0.22	0.8273
ChdBWT_Grp	3	0.000000	B	.	.	.
ComputerExpr	0	-1.899474	B	3.5571524	-0.53	0.5935
ComputerExpr	1	-1.542068	B	0.7148328	-2.16	0.0312
ComputerExpr	2	0.000000	B	.	.	.
MomIQ1	1	-3.428001	B	1.0253513	-3.34	0.0009
MomIQ1	2	-1.622536	B	0.9216070	-1.76	0.0786
MomIQ1	3	0.000000	B	.	.	.
HOME_TotalIndex		0.388969		0.1964414	1.98	0.0480
PctPoverty1		-0.061799		0.1501822	-0.41	0.6808
MomEduc	0	1.806169	B	1.8550476	0.97	0.3305
MomEduc	1	-1.167612	B	1.1299182	-1.03	0.3017
MomEduc	2	-0.600786	B	0.8631245	-0.70	0.4866
MomEduc	3	0.000000	B	.	.	.
SingleParent		-1.562557		0.9259803	-1.69	0.0918
Site	HMO-A	-4.679599	B	1.5227492	-3.07	0.0022
Site	HMO-B	-4.453381	B	1.4538026	-3.06	0.0022
Site	HMO-C	-3.079320	B	1.4735370	-2.09	0.0369
Site	HMO-D	0.000000	B	.	.	.
OlderSibs		-1.832498		0.7406126	-2.47	0.0135
DayCareCentrImpVal1		0.572185		0.3557618	1.61	0.1081
BFMthsCat	0	-2.845365	B	0.9957555	-2.86	0.0044
BFMthsCat	1	-2.412854	B	0.8265535	-2.92	0.0036
BFMthsCat	2	0.000000	B	.	.	.
PreNatlead_1		1.408112		0.9947865	1.42	0.1572
MatLangDel		-10.310075		5.0088040	-2.06	0.0398
ChildAge2		75.155577		9.4911921	7.92	<.0001
ChildAge3		-2.776798		0.3459877	-8.03	<.0001

Exhibit B.16. CMS Stories 2: Delayed Recall
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: VM_CMS2AvRS CMS Stories 2(Delay) Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	34	118709.0808	3491.4436	29.88	<.0001
Error	1002	117090.0995	116.8564		
Corrected Total	1036	235799.1803			

R-Square	Coeff Var	Root MSE	VM_CMS2AvRS Mean
0.503433	24.29664	10.81001	44.49180

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		1961.311544	B	254.8375869	7.70	<.0001
PreNatThimer		-0.009564		0.0413032	-0.23	0.8169
Exp07mos		0.004714		0.0587667	0.08	0.9361
ChildAge		-665.791943		84.8867162	-7.84	<.0001
sexmale		-3.315430		0.6944496	-4.77	<.0001
ChdBWT_Grp	1	-2.790834	B	1.3752291	-2.03	0.0427
ChdBWT_Grp	2	0.183150	B	0.9675412	0.19	0.8499
ChdBWT_Grp	3	0.000000	B	.	.	.
MomIQ1	1	-2.885325	B	1.0278195	-2.81	0.0051
MomIQ1	2	-1.210361	B	0.9085137	-1.33	0.1831
MomIQ1	3	0.000000	B	.	.	.
HOME_TotalIndex		0.376884		0.1939425	1.94	0.0523
PctPoverty1		0.508976		0.8251902	0.62	0.5375
MomEduc	0	0.951870	B	1.8615181	0.51	0.6092
MomEduc	1	-0.944872	B	1.1206516	-0.84	0.3993
MomEduc	2	-0.176504	B	0.8518636	-0.21	0.8359
MomEduc	3	0.000000	B	.	.	.
SingleParent		-2.363545		0.9299242	-2.54	0.0112
Site	HMO-A	-4.711437	B	1.5195362	-3.10	0.0020
Site	HMO-B	-4.409562	B	1.4665561	-3.01	0.0027
Site	HMO-C	-3.773711	B	1.4855363	-2.54	0.0112
Site	HMO-D	0.000000	B	.	.	.
OlderSibs		-1.421518		0.7312106	-1.94	0.0522
DayCareCentrImpVal1		0.544752		0.3521912	1.55	0.1222
DayCareHomeImpVal1		0.456241		0.2424151	1.88	0.0601
BFMthsCat	0	-3.661178	B	0.9835388	-3.72	0.0002
BFMthsCat	1	-2.375565	B	0.8144507	-2.92	0.0036
BFMthsCat	2	0.000000	B	.	.	.
PreNatlead_1		1.066551		0.9817825	1.09	0.2776
IronDef_1		-3.887856		2.3715352	-1.64	0.1014
MatLangDel		-9.445936		5.0130705	-1.88	0.0598
ChildAge2		75.340996		9.3533722	8.05	<.0001
ChildAge3		-2.779912		0.3409594	-8.15	<.0001
MatSTUTTER		-2.954084		3.2240427	-0.92	0.3597
PreNatOrgMerc_1		-0.689785		0.7525882	-0.92	0.3596
EngOnly		0.673074		0.7627630	0.88	0.3778
MatADHD		-2.487915		3.2149382	-0.77	0.4392
PreNatFish_1		0.454147		1.3851747	0.33	0.7431
PctPoverty1_2		-0.044192		0.1072619	-0.41	0.6804
PctPoverty1_3		0.000816		0.0036756	0.22	0.8244

Exhibit B.17. WJIII: Letter- Word Identification
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: Rd_LWIDAvRS WJIII Letter Word Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	33	44498.87891	1348.45088	28.78	<.0001
Error	1009	47278.34065	46.85663		
Corrected Total	1042	91777.21956			

R-Square	Coeff Var	Root MSE	Rd_LWIDAvRS Mean
0.484858	13.44748	6.845190	50.90316

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		-184.5901328	B	160.7751796	-1.15	0.2512
PreNatThimer		0.0109867		0.0261918	0.42	0.6750
Exp07mos		0.0618545		0.0369485	1.67	0.0944
ChildAge		62.7391932		53.5556710	1.17	0.2417
sexmale		-0.4489010		0.4409063	-1.02	0.3089
ChdBWT_Grp	1	-1.7503410	B	0.8642832	-2.03	0.0431
ChdBWT_Grp	2	-0.1529597	B	0.6113135	-0.25	0.8025
ChdBWT_Grp	3	0.0000000	B	.	.	.
ComputerExpr	0	-3.3841786	B	2.2242201	-1.52	0.1284
ComputerExpr	1	-1.8319612	B	0.4449616	-4.12	<.0001
ComputerExpr	2	0.0000000	B	.	.	.
MomIQ1	1	-3.1765776	B	0.6465641	-4.91	<.0001
MomIQ1	2	-2.1835385	B	0.5722752	-3.82	0.0001
MomIQ1	3	0.0000000	B	.	.	.
HOME_TotalIndex		-0.0209715		0.1227437	-0.17	0.8644
PctPoverty1		0.3845906		0.2352300	1.63	0.1024
MomEduc	0	-2.3022238	B	1.1634542	-1.98	0.0481
MomEduc	1	-1.8518292	B	0.7000456	-2.65	0.0083
MomEduc	2	-1.1055317	B	0.5386276	-2.05	0.0404
MomEduc	3	0.0000000	B	.	.	.
SingleParent		-1.0018536		0.5852397	-1.71	0.0872
Site	HMO-A	0.5435816	B	0.9461896	0.57	0.5658
Site	HMO-B	-0.8737347	B	0.9074017	-0.96	0.3358
Site	HMO-C	-1.9152352	B	0.9205387	-2.08	0.0377
Site	HMO-D	0.0000000	B	.	.	.
OlderSibs		-1.4983837		0.4982102	-3.01	0.0027
YoungerSibs		-1.4707352		0.4888584	-3.01	0.0027
EngOnly		-1.3541553		0.4808006	-2.82	0.0050
BFMthsCat	0	-1.3873960	B	0.6174067	-2.25	0.0248
BFMthsCat	1	-0.8405679	B	0.5081200	-1.65	0.0984
BFMthsCat	2	0.0000000	B	.	.	.
PreNatAlcohol_1		-1.1828247		0.6022796	-1.96	0.0498
PreNatFish_1		-1.3596364		0.8717437	-1.56	0.1192
PreNatOrgMerc_1		-0.7459730		0.4736313	-1.58	0.1156
PreNatlead_1		1.1284525		0.6232690	1.81	0.0705
MatSpeechDel		-6.7355828		2.1177186	-3.18	0.0015
MatADHD		-7.3885505		2.0193795	-3.66	0.0003
ChildAge2		-5.5716690		5.9009740	-0.94	0.3453
ChildAge3		0.1749528		0.2151088	0.81	0.4162
PctPoverty1_2		-0.0261021		0.0134885	-1.94	0.0533

Exhibit B.18. Grooved Pegboard: Dominant Hand (lower = better)
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: FM_PegDAvRS G Pegboard Dom Hand Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	28	505270.2501	18045.3661	64.00	<.0001
Error	1016	286452.8318	281.9418		
Corrected Total	1044	791723.0819			

R-Square	Coeff Var	Root MSE	FM_PegDAvRS Mean
0.638191	25.48895	16.79112	65.87608

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		86.32552977	B	9.32336678	9.26	<.0001
PreNatThimer		-0.10888833		0.06402764	-1.70	0.0893
Exp07mos		-0.07972757		0.08906065	-0.90	0.3709
ChildAge		-5.00860076		0.93469598	-5.36	<.0001
Spline9		52.06865137		2.05608487	25.32	<.0001
sexmale		1.46852790		1.07202433	1.37	0.1710
ChdBWT_Grp	1	-1.95410486	B	2.13301508	-0.92	0.3598
ChdBWT_Grp	2	-1.75012952	B	1.49202368	-1.17	0.2411
ChdBWT_Grp	3	0.00000000	B	.	.	.
MomIQ1	1	2.79211453	B	1.58322920	1.76	0.0781
MomIQ1	2	2.61224536	B	1.40045189	1.87	0.0624
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		-0.62903909		0.29744664	-2.11	0.0347
PctPoverty1		-0.26768936		0.22275313	-1.20	0.2297
MomEduc	0	0.69416858	B	2.81046866	0.25	0.8050
MomEduc	1	0.12874420	B	1.70827444	0.08	0.9399
MomEduc	2	0.53285950	B	1.31280269	0.41	0.6849
MomEduc	3	0.00000000	B	.	.	.
SingleParent		1.24885736		1.39887187	0.89	0.3722
cMedicalHist_1		7.32146446		3.49105257	2.10	0.0362
Site	HMO-A	-2.25335812	B	2.30204394	-0.98	0.3279
Site	HMO-B	-1.32044343	B	2.20842857	-0.60	0.5500
Site	HMO-C	-1.93019447	B	2.23902837	-0.86	0.3889
Site	HMO-D	0.00000000	B	.	.	.
DayCareHomeImpVal1		1.16760787		0.37071055	3.15	0.0017
EngOnly		3.30854912		1.17017314	2.83	0.0048
BFMthsCat	0	2.94644862	B	1.50797663	1.95	0.0510
BFMthsCat	1	0.83460295	B	1.24352660	0.67	0.5023
BFMthsCat	2	0.00000000	B	.	.	.
PreNatAlcohol_1		2.18100595		1.46674799	1.49	0.1373
PreNatFish_1		6.10000518		2.13671477	2.85	0.0044
PreNatOrgMerc_1		-1.92765872		1.15661551	-1.67	0.0959
MatLangDel		32.40206631		7.68599505	4.22	<.0001
MatADHD		-8.51934275		4.98940126	-1.71	0.0880

Exhibit B.19. Grooved Pegboard: Non-dom Hand (lower = better)
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: FM_PegNDAvRS G Pegboard NonDom Hand Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	42	641567.427	15275.415	37.79	<.0001
Error	996	402594.798	404.212		
Corrected Total	1038	1044162.225			

R-Square	Coeff Var	Root MSE	FM_PegNDAvRS Mean
0.614433	27.28167	20.10502	73.69423

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		393.3746127	B	278.1405173	1.41	0.1576
PreNatThimer		-0.0829387		0.0773082	-1.07	0.2836
Exp07mos		-0.2737309		0.1092791	-2.50	0.0124
ChildAge		-80.7863930		68.7005181	-1.18	0.2399
Spline9		13.6803956		389.7963462	0.04	0.9720
ChildAge_Spline9		25.5739065		87.8665231	0.29	0.7711
ChildAge2		4.7085328		4.2270089	1.11	0.2656
ChildAge2_Spline9		-2.2928002		5.0367416	-0.46	0.6491
sexmale		0.1936617		1.3004153	0.15	0.8816
ChdBWT_Grp	1	0.9456807	B	2.5897128	0.37	0.7151
ChdBWT_Grp	2	0.3381003	B	1.7947317	0.19	0.8506
ChdBWT_Grp	3	0.0000000	B	.	.	.
MomIQ1	1	2.5325129	B	1.9286475	1.31	0.1895
MomIQ1	2	1.2380590	B	1.6907115	0.73	0.4642
MomIQ1	3	0.0000000	B	.	.	.
HOME_TotalIndex		-0.8304600		0.3603065	-2.30	0.0214
PctPoverty1		-0.4590885		0.6750885	-0.68	0.4966
MomEduc	0	6.1159480	B	3.4560418	1.77	0.0771
MomEduc	1	3.0928258	B	2.0993672	1.47	0.1410
MomEduc	2	-0.3476799	B	1.5885870	-0.22	0.8268
MomEduc	3	0.0000000	B	.	.	.
SingleParent		2.0406090		1.7308235	1.18	0.2387
Site	HMO-A	-3.1493059	B	2.7965749	-1.13	0.2604
Site	HMO-B	-1.8907624	B	2.6692105	-0.71	0.4789
Site	HMO-C	-1.6139428	B	2.7021436	-0.60	0.5505
Site	HMO-D	0.0000000	B	.	.	.
cMedicalHist_1		3.0948603		4.2951348	0.72	0.4714
DayCareHomeImpVal1		0.9754289		0.4514397	2.16	0.0310
EngOnly		3.8813138		1.4397030	2.70	0.0071
BFMthsCat	0	3.9761038	B	1.8502679	2.15	0.0319
BFMthsCat	1	-0.6366776	B	1.5179062	-0.42	0.6750
BFMthsCat	2	0.0000000	B	.	.	.
PreNatNicotine_1		6.3166801		2.4792147	2.55	0.0110
PreNatAlcohol_1		2.4445654		1.8416082	1.33	0.1847
PreNatTuna_1		2.2455927		1.2207603	1.84	0.0661
PreNatOrgMerc_1		-2.4656979		1.3888324	-1.78	0.0761
PreNatHomePro_1		-6.5829997		3.3626818	-1.96	0.0505
PreNatFillings_1		1.2474311		0.8550152	1.46	0.1449
ADHDstimulant		17.9055997		14.8095648	1.21	0.2269
MatLangDel		44.2193573		9.2852032	4.76	<.0001
PreNatIllDrug		-9.8965649		6.5081029	-1.52	0.1287
MatAgeCat	1	-3.4308851	B	12.1099993	-0.28	0.7770
MatAgeCat	2	-3.4205205	B	2.5263013	-1.35	0.1761
MatAgeCat	3	0.0000000	B	.	.	.
PctPoverty1_2		0.0247656		0.0389979	0.64	0.5255
OlderSibs		-1.0788298		1.3739394	-0.79	0.4325
C5APGARImpVal1		0.8275196		1.3027887	0.64	0.5254
MatSTUTTER		-2.5253246		6.1322088	-0.41	0.6806
DayCareCentrImpVal1		-0.1232912		0.6476154	-0.19	0.8491

Exhibit B.20. Finger Tapping: Dominant Hand
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: FM_TapDAvRS Finger Tap Dom Hand Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	31	14742.03796	475.54961	14.39	<.0001
Error	1005	33206.72083	33.04151		
Corrected Total	1036	47948.75878			

R-Square	Coeff Var	Root MSE	FM_TapDAvRS Mean
0.307454	14.81136	5.748175	38.80923

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		-17.06354509	B	14.24734494	-1.20	0.2313
PreNatThimer		-0.01470163		0.02187587	-0.67	0.5017
Exp07mos		0.03427288		0.03113816	1.10	0.2713
ChildAge		9.83562111		3.09371442	3.18	0.0015
sexmale		2.35935311		0.37107795	6.36	<.0001
ChdBWT_Grp	1	-0.12923475	B	0.73641699	-0.18	0.8607
ChdBWT_Grp	2	0.12087398	B	0.51234929	0.24	0.8135
ChdBWT_Grp	3	0.00000000	B	.	.	.
ComputerExpr	0	-2.33897259	B	1.85878560	-1.26	0.2086
ComputerExpr	1	-1.02985633	B	0.37330287	-2.76	0.0059
ComputerExpr	2	0.00000000	B	.	.	.
MomIQ1	1	-0.09490424	B	0.54255163	-0.17	0.8612
MomIQ1	2	0.29757981	B	0.48171616	0.62	0.5369
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		-0.22787300		0.10229636	-2.23	0.0261
PctPoverty1		0.07887623		0.07764860	1.02	0.3100
MomEduc	0	-0.38838599	B	0.97304379	-0.40	0.6899
MomEduc	1	-1.25925490	B	0.59224605	-2.13	0.0337
MomEduc	2	-0.09411604	B	0.45253202	-0.21	0.8353
MomEduc	3	0.00000000	B	.	.	.
SingleParent		0.55417887		0.49413630	1.12	0.2623
cMedicalHist_1		-2.23849435		1.19767017	-1.87	0.0619
Site	HMO-A	0.24977187	B	0.80460207	0.31	0.7563
Site	HMO-B	-0.88945409	B	0.77211796	-1.15	0.2496
Site	HMO-C	-0.92256427	B	0.78180458	-1.18	0.2383
Site	HMO-D	0.00000000	B	.	.	.
MatAgeCat	1	2.27983397	B	3.45191989	0.66	0.5091
MatAgeCat	2	1.62137904	B	0.72540669	2.24	0.0256
MatAgeCat	3	0.00000000	B	.	.	.
OlderSibs		-0.38694057		0.41993422	-0.92	0.3570
YoungerSibs		-0.59075878		0.41346647	-1.43	0.1534
DayCareCentrImpVal1		-0.22966434		0.18384645	-1.25	0.2119
EngOnly		-0.75050854		0.40517235	-1.85	0.0643
BFMthsCat	0	-0.10792773	B	0.52176839	-0.21	0.8362
BFMthsCat	1	-1.35360511	B	0.43132309	-3.14	0.0017
BFMthsCat	2	0.00000000	B	.	.	.
MatLangDel		-6.80531657		2.63392914	-2.58	0.0099
MatADHD		5.82481967		1.78812737	3.26	0.0012
ChildAge2		-0.38620999		0.16862579	-2.29	0.0222

Exhibit B.21. Finger Tapping: Non-dominant Hand
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: FM_TapNDAvRS Finger Tap NonDom Hand Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	36	13414.68842	372.63023	13.81	<.0001
Error	997	26905.60575	26.98657		
Corrected Total	1033	40320.29417			

R-Square	Coeff Var	Root MSE	FM_TapNDAvRS Mean
0.332703	15.07263	5.194860	34.46552

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		-59.06155972	B	122.5935877	-0.48	0.6301
PreNatThimer		-0.01488407		0.0199297	-0.75	0.4553
Exp07mos		0.01794495		0.0281831	0.64	0.5244
ChildAge		24.34514389		40.8442350	0.60	0.5513
sexmale		2.68401611		0.3368045	7.97	<.0001
ComputerExpr	0	-2.11322252	B	1.6814451	-1.26	0.2091
ComputerExpr	1	-0.72618587	B	0.3391016	-2.14	0.0325
ComputerExpr	2	0.00000000	B	.	.	.
MomIQ1	1	-0.19166119	B	0.4865952	-0.39	0.6938
MomIQ1	2	0.29950780	B	0.4313424	0.69	0.4876
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		-0.12381331		0.0931662	-1.33	0.1842
PctPoverty1		0.25106200		0.1788798	1.40	0.1608
MomEduc	0	-0.56592038	B	0.8951568	-0.63	0.5274
MomEduc	1	-0.31279796	B	0.5372587	-0.58	0.5606
MomEduc	2	0.02895940	B	0.4089732	0.07	0.9436
MomEduc	3	0.00000000	B	.	.	.
SingleParent		0.51736727		0.4554781	1.14	0.2563
Site	HMO-A	0.03140924	B	0.7276402	0.04	0.9656
Site	HMO-B	-0.71135124	B	0.6999537	-1.02	0.3097
Site	HMO-C	-0.78561666	B	0.7036207	-1.12	0.2645
Site	HMO-D	0.00000000	B	.	.	.
MatADHD		4.94150945		1.6199467	3.05	0.0023
MatLangDel		-6.86290855		2.3859323	-2.88	0.0041
DayCareCentrImpVal1		-0.46890298		0.1655336	-2.83	0.0047
PreNatFish_1		1.18039916		0.6615825	1.78	0.0747
EngOnly		-0.58655539		0.3704873	-1.58	0.1137
PreNatFillings_1		-0.30474431		0.2197959	-1.39	0.1659
YoungerSibs		-0.48563812		0.3809635	-1.27	0.2027
PctPoverty1_2		-0.01122797		0.0102224	-1.10	0.2723
OlderSibs		-0.36410821		0.3828662	-0.95	0.3418
PreNatAlcohol_1		-0.33686796		0.4593616	-0.73	0.4635
cMedicalHist_1		0.58451872		1.1046244	0.53	0.5968
MatAgeCat	1	-3.27060999	B	3.1179882	-1.05	0.2945
MatAgeCat	2	0.51033165	B	0.6564983	0.78	0.4371
MatAgeCat	3	0.00000000	B	.	.	.
PreNatHomePro_1		-0.85381156		0.8782235	-0.97	0.3312
ChildAge2		-2.20742729		4.5006800	-0.49	0.6239
ChdBWT_Grp	1	0.17362942	B	0.6721086	0.26	0.7962
ChdBWT_Grp	2	-0.31056742	B	0.4634427	-0.67	0.5029
ChdBWT_Grp	3	0.00000000	B	.	.	.
ChildAge3		0.07388690		0.1640710	0.45	0.6526
PreNatlead_1		-0.27364305		0.4715968	-0.58	0.5619

Exhibit B.22. Stanford Binet: Copying
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: VP_CopyAvRS Stanford Binet Copying Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	37	1490.284447	40.277958	5.13	<.0001
Error	1000	7850.633665	7.850634		
Corrected Total	1037	9340.918112			

R-Square	Coeff Var	Root MSE	VP_CopyAvRS Mean
0.159544	15.39390	2.801898	18.20135

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		82.87716803	B	65.95043357	1.26	0.2092
PreNatThimer		0.00520093		0.01073421	0.48	0.6281
Exp07mos		0.00654110		0.01520544	0.43	0.6672
ChildAge		-21.31960926		21.97925656	-0.97	0.3323
sexmale		-0.60267467		0.18160335	-3.32	0.0009
ChdBWT_Grp	1	-0.72769862	B	0.35871418	-2.03	0.0428
ChdBWT_Grp	2	0.12738421	B	0.25025785	0.51	0.6109
ChdBWT_Grp	3	0.00000000	B	.	.	.
MomIQ1	1	-0.24240941	B	0.26285008	-0.92	0.3566
MomIQ1	2	-0.38940783	B	0.23212399	-1.68	0.0937
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		0.03170209		0.05010051	0.63	0.5270
PctPoverty1		-0.39569025		0.21231724	-1.86	0.0627
MomEduc	0	-0.37303850	B	0.48384655	-0.77	0.4409
MomEduc	1	-0.11873818	B	0.28985108	-0.41	0.6821
MomEduc	2	-0.01759745	B	0.22122384	-0.08	0.9366
MomEduc	3	0.00000000	B	.	.	.
SingleParent		-0.75788789		0.23947685	-3.16	0.0016
cMedicalHist_1		-0.54989843		0.58468388	-0.94	0.3472
Site	HMO-A	-0.76801667	B	0.39106148	-1.96	0.0498
Site	HMO-B	-0.90934668	B	0.37762039	-2.41	0.0162
Site	HMO-C	-0.46005230	B	0.37887446	-1.21	0.2249
Site	HMO-D	0.00000000	B	.	.	.
EngOnly		-0.58487334		0.19857731	-2.95	0.0033
PreNatFillings_1		0.15732904		0.11792008	1.33	0.1824
C5APGARImpVal1		-0.21244644		0.18127162	-1.17	0.2415
IronDef_1		-1.21224432		0.61421261	-1.97	0.0487
MatLangDel		-1.78980053		1.27810519	-1.40	0.1617
ChildAge2		2.35417702		2.42209474	0.97	0.3313
PctPoverty1_2		0.05625488		0.02757349	2.04	0.0416
PctPoverty1_3		-0.00189083		0.00094661	-2.00	0.0460
PreNatAlcohol_1		-0.11437560		0.24912360	-0.46	0.6463
MatAgeCat	1	-0.93476346	B	1.68265022	-0.56	0.5787
MatAgeCat	2	0.33090355	B	0.34824390	0.95	0.3422
MatAgeCat	3	0.00000000	B	.	.	.
DayCareHomeImpVal1		-0.04279840		0.06228719	-0.69	0.4922
OlderSibs		-0.12944953		0.19059646	-0.68	0.4972
ComputerExpr	0	-0.68492449	B	0.90748895	-0.75	0.4506
ComputerExpr	1	-0.17394857	B	0.18215844	-0.95	0.3398
ComputerExpr	2	0.00000000	B	.	.	.
ChildAge3		-0.08261961		0.08830166	-0.94	0.3497
PreNatNicotine_1		0.38667018		0.34648525	1.12	0.2647
PreNatTuna_1		-0.20019142		0.17124768	-1.17	0.2427
PreNatFish_1		0.32175811		0.36016896	0.89	0.3719

Exhibit B.23. GDS Vigilance Task: Correct Responses
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: IP_GDSCorAvRS GDS Vigilance CorrectResp Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	45	5205.42025	115.67601	5.18	<.0001
Error	996	22239.90413	22.32922		
Corrected Total	1041	27445.32438			

R-Square	Coeff Var	Root MSE	IP_GDSCorAvRS Mean
0.189665	11.67729	4.725381	40.46641

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		-193.0499988	B	111.8535913	-1.73	0.0847
PreNatThimer		-0.0131828		0.0182221	-0.72	0.4696
Exp07mos		0.0323190		0.0257147	1.26	0.2091
ChildAge		70.3270306		37.2860565	1.89	0.0596
sexmale		-0.3451136		0.3069123	-1.12	0.2611
ComputerExpr	0	-2.1858608	B	1.5402939	-1.42	0.1562
ComputerExpr	1	-0.6832689	B	0.3095103	-2.21	0.0275
ComputerExpr	2	0.0000000	B	.	.	.
MomIQ1	1	-0.2369439	B	0.4492432	-0.53	0.5980
MomIQ1	2	0.0524706	B	0.3984887	0.13	0.8953
MomIQ1	3	0.0000000	B	.	.	.
HOME_TotalIndex		-0.0580323		0.0854334	-0.68	0.4971
PctPoverty1		0.4576481		0.1588401	2.88	0.0040
MomEduc	0	-0.5801615	B	0.8135693	-0.71	0.4759
MomEduc	1	-0.5665076	B	0.4949482	-1.14	0.2527
MomEduc	2	-0.4762019	B	0.3736492	-1.27	0.2028
MomEduc	3	0.0000000	B	.	.	.
SingleParent		-0.2763103		0.4070033	-0.68	0.4974
Site	HMO-A	-0.2874862	B	0.6650898	-0.43	0.6657
Site	HMO-B	-0.8096703	B	0.6383504	-1.27	0.2050
Site	HMO-C	-0.6402281	B	0.6462635	-0.99	0.3221
Site	HMO-D	0.0000000	B	.	.	.
cMedicalHist_1		-1.0398047		1.0102155	-1.03	0.3036
MatAgeCat	1	-1.5823726	B	2.8430506	-0.56	0.5779
MatAgeCat	2	0.5074140	B	0.5889643	0.86	0.3892
MatAgeCat	3	0.0000000	B	.	.	.
DayCareCentrImpVal1		0.0052555		0.1520532	0.03	0.9724
DayCareHomeImpVal1		-0.1570484		0.1063933	-1.48	0.1402
BFMthsCat	0	-1.5959282	B	0.4366763	-3.65	0.0003
BFMthsCat	1	-1.0153913	B	0.3587098	-2.83	0.0047
BFMthsCat	2	0.0000000	B	.	.	.
PreNatNicotine_1		0.5051334		0.5859067	0.86	0.3888
PreNatAlcohol_1		-0.3419779		0.4325177	-0.79	0.4293
PreNatTuna_1		-0.4415998		0.2860344	-1.54	0.1229
PreNatOrgMerc_1		0.3853381		0.3287319	1.17	0.2414
PreNatHomePro_1		1.4078674		0.7973036	1.77	0.0777
PreNatlead_1		-0.4279086		0.4312549	-0.99	0.3213
OlderSibs		-0.0564985		0.3245711	-0.17	0.8618
PreNatIllDrug		0.2803462		1.5309607	0.18	0.8547
C5APGARImpVal1		0.5823583		0.3061123	1.90	0.0574
IronDef_1		-1.0286933		1.0393204	-0.99	0.3225
ADHDstimulant		3.2036483		3.5363845	0.91	0.3652
ChdPICA_1		-0.4077771		0.7561937	-0.54	0.5898
MatLangDel		-2.6021805		2.3702012	-1.10	0.2725
MatSpeechDel		-3.5708188		1.6722917	-2.14	0.0330
MatSTUTTER		-0.5399590		1.4699705	-0.37	0.7135
ChildAge2		-7.2567110		4.1096985	-1.77	0.0777
ChildAge3		0.2525328		0.1498567	1.69	0.0923
PctPoverty1_2		-0.0284391		0.0091563	-3.11	0.0020
ChdBWT_Grp	1	0.5026427	B	0.6088836	0.83	0.4093
ChdBWT_Grp	2	0.1647625	B	0.4217239	0.39	0.6961
ChdBWT_Grp	3	0.0000000	B	.	.	.
PreNatFillings_1		0.0753530		0.1997307	0.38	0.7061

Exhibit B.24. GDS Vigilance Task: Errors (lower=better)
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: IP_GDSErrAvRS GDS Vigilance Comm.Errors Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	42	35091.0864	835.5021	5.59	<.0001
Error	999	149446.7178	149.5963		
Corrected Total	1041	184537.8042			

R-Square	Coeff Var	Root MSE	IP_GDSErrAvRS Mean
0.190157	161.9809	12.23096	7.550864

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		-69.84671993	B	288.8599219	-0.24	0.8090
PreNatThimer		0.03256214		0.0470678	0.69	0.4892
Exp07mos		-0.02193041		0.0666121	-0.33	0.7421
ChildAge		35.60009677		96.2791010	0.37	0.7116
sexmale		3.74324583		0.7901680	4.74	<.0001
ComputerExpr	0	6.49654113	B	3.9836405	1.63	0.1032
ComputerExpr	1	0.42602465	B	0.7984031	0.53	0.5937
ComputerExpr	2	0.00000000	B	.	.	.
MomIQ1	1	1.85638195	B	1.1521650	1.61	0.1074
MomIQ1	2	-0.19908500	B	1.0298090	-0.19	0.8467
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		-0.38931319		0.2204440	-1.77	0.0777
PctPoverty1		-0.77165795		0.9391604	-0.82	0.4115
MomEduc	0	-0.52445641	B	2.1237359	-0.25	0.8050
MomEduc	1	-0.99201893	B	1.2738857	-0.78	0.4363
MomEduc	2	-0.26735531	B	0.9659786	-0.28	0.7820
MomEduc	3	0.00000000	B	.	.	.
SingleParent		1.32270229		1.0773614	1.23	0.2198
cMedicalHist_1		3.16803110		2.6159180	1.21	0.2262
Site	HMO-A	-3.09280387	B	1.7188078	-1.80	0.0723
Site	HMO-B	-1.39151810	B	1.6528885	-0.84	0.4001
Site	HMO-C	-2.89547479	B	1.6723731	-1.73	0.0837
Site	HMO-D	0.00000000	B	.	.	.
MatLangDel		35.19862909		6.1859874	5.69	<.0001
MatSpeechDel		17.62398956		4.3283433	4.07	<.0001
BFMthsCat	0	3.95021656	B	1.1199991	3.53	0.0004
BFMthsCat	1	1.51483791	B	0.9212774	1.64	0.1004
BFMthsCat	2	0.00000000	B	.	.	.
PreNatNicotine_1		3.69182488		1.5022130	2.46	0.0142
YoungerSibs		-1.90595281		0.8804148	-2.16	0.0306
PreNatTuna_1		1.52516336		0.7369693	2.07	0.0388
ChdPICA_1		-3.44019362		1.9458972	-1.77	0.0774
PreNatOrgMerc_1		-1.57233580		0.8522157	-1.84	0.0653
MatSTUTTER		6.61277151		3.8147273	1.73	0.0833
IronDef_1		4.81299260		2.6902164	1.79	0.0739
ADHDstimulant		-13.00372806		9.1254177	-1.43	0.1545
MatADHD		5.29588885		3.6514720	1.45	0.1473
OlderSibs		-1.26038647		0.9039479	-1.39	0.1635
PreNatAlcohol_1		1.26125448		1.0858820	1.16	0.2457
C5APGARImpVal1		-0.57855219		0.7903003	-0.73	0.4643
DayCareHomeImpVal1		0.19147691		0.2744536	0.70	0.4855
PctPoverty1_2		0.08281561		0.1210817	0.68	0.4942
ChildAge3		0.18048764		0.3868661	0.47	0.6409
PctPoverty1_3		-0.00221807		0.0041462	-0.53	0.5928
ChildAge2		-4.51587071		10.6106694	-0.43	0.6705
ChdBWT_Grp	1	0.01101243	B	1.5732597	0.01	0.9944
ChdBWT_Grp	2	0.79521855	B	1.0917856	0.73	0.4666
ChdBWT_Grp	3	0.00000000	B	.	.	.
DayCareCentrImpVal1		-0.05522066		0.3925417	-0.14	0.8882

Exhibit B.25. WISC III: Digit Span, Forward Recall
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: VM_DigitFAvRS WISC III Digit Forward Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	37	567.966805	15.350454	4.96	<.0001
Error	1007	3115.702094	3.094044		
Corrected Total	1044	3683.668900			

R-Square	Coeff Var	Root MSE	VM_DigitFAvRS Mean
0.154185	21.83328	1.758989	8.056459

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		59.88568365	B	41.28334237	1.45	0.1472
PreNatThimer		0.00014418		0.00675772	0.02	0.9830
Exp07mos		-0.00217751		0.00954264	-0.23	0.8195
ChildAge		-19.41922476		13.75927185	-1.41	0.1584
sexmale		-0.16067651		0.11357035	-1.41	0.1574
ChdBWT_Grp	1	0.14317543	B	0.22185619	0.65	0.5188
ChdBWT_Grp	2	0.15627507	B	0.15618369	1.00	0.3173
ChdBWT_Grp	3	0.00000000	B	.	.	.
MomIQ1	1	-0.49365944	B	0.16524158	-2.99	0.0029
MomIQ1	2	-0.23373974	B	0.14721096	-1.59	0.1126
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		0.03266155		0.03153433	1.04	0.3006
PctPoverty1		-0.11425308		0.13250101	-0.86	0.3887
MomEduc	0	0.07445869	B	0.30386167	0.25	0.8065
MomEduc	1	-0.28680885	B	0.18135268	-1.58	0.1141
MomEduc	2	-0.21502949	B	0.13817408	-1.56	0.1200
MomEduc	3	0.00000000	B	.	.	.
SingleParent		0.16601474		0.14898977	1.11	0.2654
Site	HMO-A	-0.27041614	B	0.24285698	-1.11	0.2658
Site	HMO-B	-0.42968411	B	0.23272775	-1.85	0.0651
Site	HMO-C	0.04774806	B	0.23569833	0.20	0.8395
Site	HMO-D	0.00000000	B	.	.	.
BFMthsCat	0	-0.22164707	B	0.16059631	-1.38	0.1678
BFMthsCat	1	-0.13656611	B	0.13160313	-1.04	0.2997
BFMthsCat	2	0.00000000	B	.	.	.
PreNatNicotine_1		-0.30388250		0.21645520	-1.40	0.1607
PreNatAlcohol_1		-0.18227735		0.15618586	-1.17	0.2435
PreNatFish_1		-0.26814573		0.22446288	-1.19	0.2325
PreNatlead_1		0.25946517		0.15951853	1.63	0.1041
C5APGARImpVal1		0.38016347		0.11308113	3.36	0.0008
ADHDstimulant		-1.83994286		1.28952243	-1.43	0.1539
MatLangDel		-1.45095737		0.80824749	-1.80	0.0729
MatSTUTTER		1.09627494		0.53573710	2.05	0.0410
ChildAge2		2.22267614		1.51613207	1.47	0.1430
ChildAge3		-0.08232090		0.05527108	-1.49	0.1367
PctPoverty1_2		0.02569956		0.01725021	1.49	0.1366
PctPoverty1_3		-0.00096505		0.00059297	-1.63	0.1039
PreNatHomePro_1		-0.30046867		0.29384215	-1.02	0.3068
MatAgeCat	1	-0.88004626	B	1.05511072	-0.83	0.4044
MatAgeCat	2	-0.26131766	B	0.21876168	-1.19	0.2326
MatAgeCat	3	0.00000000	B	.	.	.
ComputerExpr	0	0.33610982	B	0.56783345	0.59	0.5540
ComputerExpr	1	-0.08236410	B	0.11438663	-0.72	0.4717
ComputerExpr	2	0.00000000	B	.	.	.
OlderSibs		0.05177436		0.11916333	0.43	0.6640

Exhibit B.26. WISC III: Digit Span, Backward Recall
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: VM_DigitBAvRS WISC III Digit Backward Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	23	343.397070	14.930307	6.22	<.0001
Error	1022	2453.242509	2.400433		
Corrected Total	1045	2796.639579			

R-Square	Coeff Var	Root MSE	VM_DigitBAvRS Mean
0.122789	34.21158	1.549333	4.528681

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		0.659445479	B	0.64045013	1.03	0.3034
PreNatThimer		-0.013014344		0.00586881	-2.22	0.0268
Exp07mos		0.017996008		0.00819061	2.20	0.0282
ChildAge		0.404266683		0.04581599	8.82	<.0001
sexmale		-0.009865011		0.09873044	-0.10	0.9204
ChdBWT_Grp	1	-0.255193601	B	0.19581930	-1.30	0.1928
ChdBWT_Grp	2	0.036297214	B	0.13698875	0.26	0.7911
ChdBWT_Grp	3	0.000000000	B	.	.	.
MomIQ1	1	-0.399025949	B	0.14318885	-2.79	0.0054
MomIQ1	2	-0.209639725	B	0.12857734	-1.63	0.1033
MomIQ1	3	0.000000000	B	.	.	.
HOME_TotalIndex		-0.000398698		0.02730753	-0.01	0.9884
PctPoverty1		0.006092171		0.02049944	0.30	0.7664
MomEduc	0	0.038635355	B	0.25834195	0.15	0.8811
MomEduc	1	-0.090385479	B	0.15759057	-0.57	0.5664
MomEduc	2	-0.061309312	B	0.12051111	-0.51	0.6110
MomEduc	3	0.000000000	B	.	.	.
SingleParent		-0.112260314		0.12824234	-0.88	0.3816
cMedicalHist_1		-0.358146668		0.32149481	-1.11	0.2655
Site	HMO-A	0.290454240	B	0.21180567	1.37	0.1706
Site	HMO-B	0.284691178	B	0.20223715	1.41	0.1595
Site	HMO-C	0.083715945	B	0.20522833	0.41	0.6834
Site	HMO-D	0.000000000	B	.	.	.
PreNatIllDrug		-1.081323496		0.47690653	-2.27	0.0236
MatADHD		-1.238314126		0.45483482	-2.72	0.0066
BFMthsCat	0	-0.314463633	B	0.13829789	-2.27	0.0232
BFMthsCat	1	-0.239451022	B	0.11415384	-2.10	0.0362
BFMthsCat	2	0.000000000	B	.	.	.
ADHDstimulant		-1.541106835		1.10136805	-1.40	0.1620

Exhibit B.27. WISC III: Digit Span, Combined
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: VM_DigitCAvRS WISC III Digit Combine Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	30	1568.484456	52.282815	7.09	<.0001
Error	1014	7473.770089	7.370582		
Corrected Total	1044	9042.254545			

R-Square	Coeff Var	Root MSE	VM_DigitCAvRS Mean
0.173462	21.57782	2.714882	12.58182

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		1.748816109	B	1.96672717	0.89	0.3741
PreNatThimer		-0.012051289		0.01032871	-1.17	0.2436
Exp07mos		0.017029071		0.01455013	1.17	0.2421
ChildAge		0.794442236		0.08059301	9.86	<.0001
sexmale		-0.140797931		0.17387135	-0.81	0.4183
ChdBWT_Grp	1	-0.094891523	B	0.34506523	-0.27	0.7834
ChdBWT_Grp	2	0.241691921	B	0.24109235	1.00	0.3163
ChdBWT_Grp	3	0.000000000	B	.	.	.
MomIQ1	1	-0.831254907	B	0.25246108	-3.29	0.0010
MomIQ1	2	-0.418184540	B	0.22598027	-1.85	0.0645
MomIQ1	3	0.000000000	B	.	.	.
HOME_TotalIndex		0.032063278		0.04833604	0.66	0.5073
PctPoverty1		-0.028438738		0.20402592	-0.14	0.8892
MomEduc	0	0.169983633	B	0.46395941	0.37	0.7142
MomEduc	1	-0.431582004	B	0.27934742	-1.54	0.1227
MomEduc	2	-0.270483368	B	0.21161017	-1.28	0.2015
MomEduc	3	0.000000000	B	.	.	.
SingleParent		0.047701312		0.22978216	0.21	0.8356
Site	HMO-A	0.014016305	B	0.37430875	0.04	0.9701
Site	HMO-B	-0.086411963	B	0.35810667	-0.24	0.8094
Site	HMO-C	0.193419861	B	0.36298402	0.53	0.5942
Site	HMO-D	0.000000000	B	.	.	.
cMedicalHist_1		-0.564487301		0.56436602	-1.00	0.3174
BFMthsCat	0	-0.631805697	B	0.24346313	-2.60	0.0096
BFMthsCat	1	-0.423445870	B	0.20089189	-2.11	0.0353
BFMthsCat	2	0.000000000	B	.	.	.
PreNatFish_1		-0.537033068		0.34794842	-1.54	0.1230
PreNatlead_1		0.403739914		0.24369535	1.66	0.0979
PreNatIllDrug		-1.425721456		0.83626063	-1.70	0.0885
C5APGARImpVal1		0.361424603		0.17366368	2.08	0.0377
ADHDstimulant		-2.712466528		1.93908000	-1.40	0.1622
MatLangDel		-1.762324081		1.24326426	-1.42	0.1566
MatADHD		-1.550546946		0.80403638	-1.93	0.0541
OlderSibs		0.190611074		0.18187743	1.05	0.2949
PctPoverty1_2		0.020179144		0.02657606	0.76	0.4479
PctPoverty1_3		-0.000932844		0.00091387	-1.02	0.3076

Exhibit B.28. BRIEF Parent Rating: Metacognition (lower = better)
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: AD_PmetaRS Brief Parent Metacognition Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	36	45309.1542	1258.5876	4.28	<.0001
Error	1005	295824.3285	294.3526		
Corrected Total	1041	341133.4827			

R-Square	Coeff Var	Root MSE	AD_PmetaRS Mean
0.132819	23.09638	17.15671	74.28311

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		186.4553850	B	403.3638016	0.46	0.6440
PreNatThimer		0.0214600		0.0656028	0.33	0.7436
Exp07mos		-0.0516885		0.0917744	-0.56	0.5734
ChildAge		-48.4404236		134.3793929	-0.36	0.7186
sexmale		6.5708405		1.1071096	5.94	<.0001
ChdBWT_Grp	1	-1.1240647	B	2.1907110	-0.51	0.6080
ChdBWT_Grp	2	-1.5466865	B	1.5297063	-1.01	0.3122
ChdBWT_Grp	3	0.0000000	B	.	.	.
ComputerExpr	0	-1.3445982	B	5.5725892	-0.24	0.8094
ComputerExpr	1	2.5164727	B	1.1195146	2.25	0.0248
ComputerExpr	2	0.0000000	B	.	.	.
MomIQ1	1	-3.5371576	B	1.5891095	-2.23	0.0262
MomIQ1	2	-0.5929974	B	1.4187657	-0.42	0.6761
MomIQ1	3	0.0000000	B	.	.	.
HOME_TotalIndex		-0.8668476		0.3058365	-2.83	0.0047
PctPoverty1		-0.0492650		0.2295320	-0.21	0.8301
MomEduc	0	7.2865379	B	2.9079738	2.51	0.0124
MomEduc	1	2.3397118	B	1.7642811	1.33	0.1851
MomEduc	2	2.0228309	B	1.3496385	1.50	0.1342
MomEduc	3	0.0000000	B	.	.	.
SingleParent		1.6220139		1.4542991	1.12	0.2650
cMedicalHist_1		6.0401238		3.5937032	1.68	0.0931
Site	HMO-A	2.4849043	B	2.3499008	1.06	0.2906
Site	HMO-B	4.0770263	B	2.2666282	1.80	0.0724
Site	HMO-C	4.2870196	B	2.2746844	1.88	0.0598
Site	HMO-D	0.0000000	B	.	.	.
DayCareCentrImpVal1		1.0296884		0.5474222	1.88	0.0603
DayCareHomeImpVal1		0.9730097		0.3820257	2.55	0.0110
EngOnly		1.3886911		1.2095018	1.15	0.2512
PreNatNicotine_1		4.8307495		2.0972350	2.30	0.0215
PreNatAlcohol_1		3.2242403		1.5174181	2.12	0.0338
PreNatTuna_1		2.5559621		1.0295237	2.48	0.0132
PreNatOrgMerc_1		-1.8199599		1.1891754	-1.53	0.1262
ADHDstimulant		26.3909073		12.2707102	2.15	0.0317
ChdPICA_1		5.9955236		2.7307866	2.20	0.0284
MatLangDel		12.4608941		7.8714806	1.58	0.1137
MatADHD		9.7526213		5.1118925	1.91	0.0567
PreNatHomePro_1		2.6670818		2.8643516	0.93	0.3520
C5APGARImpVal1		1.0704541		1.1025570	0.97	0.3318
PreNatlead_1		1.0208712		1.5533163	0.66	0.5112
ChildAge2		6.1688442		14.8107303	0.42	0.6771
ChildAge3		-0.2547713		0.5400249	-0.47	0.6372

Exhibit B.29. BRIEF Teacher Rating: Metacognition (lower = better)
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: AD_TmetaRS Brief Teacher Metacognition Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	38	69079.9870	1817.8944	4.14	<.0001
Error	743	326429.1230	439.3393		
Corrected Total	781	395509.1100			

R-Square	Coeff Var	Root MSE	AD_TmetaRS Mean
0.174661	31.14038	20.96042	67.30946

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		13.49070624	B	62.05574615	0.22	0.8280
PreNatThimer		0.02649494		0.08805253	0.30	0.7636
Exp07mos		-0.14696388		0.13256998	-1.11	0.2680
ChildAge		11.29896879		12.92536727	0.87	0.3823
sexmale		12.19193682		1.58079374	7.71	<.0001
ChdBWT_Grp	1	1.14082429	B	3.19076119	0.36	0.7208
ChdBWT_Grp	2	-1.19966812	B	2.21486355	-0.54	0.5882
ChdBWT_Grp	3	0.00000000	B	.	.	.
MomIQ1	1	2.29281342	B	2.37110591	0.97	0.3339
MomIQ1	2	0.71677856	B	2.04798859	0.35	0.7264
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		-1.31819975		0.44832206	-2.94	0.0034
PctPoverty1		-1.22830631		0.80082237	-1.53	0.1255
MomEduc	0	4.99935209	B	4.26313018	1.17	0.2413
MomEduc	1	-0.52328509	B	2.57477035	-0.20	0.8390
MomEduc	2	1.03687357	B	1.95241118	0.53	0.5955
MomEduc	3	0.00000000	B	.	.	.
SingleParent		-0.41014648		2.17723516	-0.19	0.8506
cMedicalHist_1		3.65179270		5.34233032	0.68	0.4945
Site	HMO-A	-1.93173210	B	3.32661958	-0.58	0.5616
Site	HMO-B	2.07672622	B	3.20893083	0.65	0.5177
Site	HMO-C	-0.69561996	B	3.17826754	-0.22	0.8268
Site	HMO-D	0.00000000	B	.	.	.
DayCareCentrImpVal1		1.93501610		0.78519077	2.46	0.0139
EngOnly		2.75323707		1.76857149	1.56	0.1200
BFMthsCat	0	4.21196358	B	2.30224783	1.83	0.0677
BFMthsCat	1	2.41636605	B	1.80812783	1.34	0.1818
BFMthsCat	2	0.00000000	B	.	.	.
PreNatAlcohol_1		4.53356375		2.37288011	1.91	0.0564
PreNatTuna_1		2.25551446		1.46559608	1.54	0.1242
PreNatOrgMerc_1		-2.53987537		1.68675950	-1.51	0.1326
PreNatFillings_1		1.47867035		1.02811367	1.44	0.1508
ADHDstimulant		33.60699103		21.40072465	1.57	0.1168
MatADHD		10.91323185		8.20005947	1.33	0.1836
PctPoverty1_2		0.06813775		0.04476183	1.52	0.1284
PreNatNicotine_1		3.38494338		3.05348046	1.11	0.2680
DayCareHomeImpVal1		0.55371029		0.52050102	1.06	0.2878
ChildAge2		-0.63097304		0.70358866	-0.90	0.3701
MatSTUTTER		-6.65244178		6.85852217	-0.97	0.3324
C5APGARImpVal1		1.46006445		1.47993143	0.99	0.3242
PreNatHomePro_1		3.32054342		4.01942354	0.83	0.4090
PreNatlead_1		-1.36427818		2.15490233	-0.63	0.5269
MatAgeCat	1	-2.29303179	B	12.68057630	-0.18	0.8566
MatAgeCat	2	-3.55539973	B	2.83288153	-1.26	0.2099
MatAgeCat	3	0.00000000	B	.	.	.

Exhibit B.30. CRS-R: Parent Rating: Hyperactive/Impulsive (lower = better)
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: AD_PhyperRS Conners Parent Hypr/Impulsive Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	31	3327.25585	107.33083	4.57	<.0001
Error	1009	23678.61351	23.46741		
Corrected Total	1040	27005.86936			

R-Square	Coeff Var	Root MSE	AD_PhyperRS Mean
0.123205	89.35035	4.844317	5.421710

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		6.78806853	B	2.15143705	3.16	0.0017
PreNatThimer		0.00652025		0.01851165	0.35	0.7247
Exp07mos		0.01878567		0.02595401	0.72	0.4694
ChildAge		-0.36383385		0.14510805	-2.51	0.0123
sexmale		1.34181594		0.31113307	4.31	<.0001
ChdBWT_Grp	1	0.14975727	B	0.61017763	0.25	0.8062
ChdBWT_Grp	2	-0.38849389	B	0.43037886	-0.90	0.3669
ChdBWT_Grp	3	0.00000000	B	.	.	.
MomIQ1	1	-0.59120616	B	0.45194528	-1.31	0.1911
MomIQ1	2	-0.59989294	B	0.40680406	-1.47	0.1406
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		-0.09212839		0.08615040	-1.07	0.2851
PctPoverty1		-0.25968214		0.16075072	-1.62	0.1065
MomEduc	0	-0.03167412	B	0.82481966	-0.04	0.9694
MomEduc	1	0.16063294	B	0.50090528	0.32	0.7485
MomEduc	2	0.00590529	B	0.38064274	0.02	0.9876
MomEduc	3	0.00000000	B	.	.	.
SingleParent		0.83050434		0.41222263	2.01	0.0442
Site	HMO-A	0.62910049	B	0.66622712	0.94	0.3453
Site	HMO-B	1.33078530	B	0.63515919	2.10	0.0364
Site	HMO-C	0.76289012	B	0.64727682	1.18	0.2388
Site	HMO-D	0.00000000	B	.	.	.
OlderSibs		0.89352872		0.32892199	2.72	0.0067
DayCareCentrImpVal1		0.47342448		0.15479216	3.06	0.0023
DayCareHomeImpVal1		0.20136288		0.10773185	1.87	0.0619
PreNatNicotine_1		1.93888109		0.59291988	3.27	0.0011
PreNatHomePro_1		1.11036562		0.80488740	1.38	0.1680
ADHDstimulant		12.96340985		3.46235093	3.74	0.0002
ChdPICA_1		1.21912012		0.76685340	1.59	0.1122
MatADHD		6.82306455		1.42654374	4.78	<.0001
PctPoverty1_2		0.01735092		0.00930040	1.87	0.0624
PreNatAlcohol_1		0.49417255		0.42858186	1.15	0.2492
BFMthsCat	0	0.20671443	B	0.44086723	0.47	0.6393
BFMthsCat	1	0.49959576	B	0.36360809	1.37	0.1697
BFMthsCat	2	0.00000000	B	.	.	.
MatAgeCat	1	-1.62356656	B	2.90583350	-0.56	0.5765
MatAgeCat	2	0.48061233	B	0.60215344	0.80	0.4250
MatAgeCat	3	0.00000000	B	.	.	.

Exhibit B.31. CRS-R: Teacher Rating: Hyperactive/Impulsive (lower = better)
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: AD_ThyperRS Conners Teacher Hypr/Impulsive Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	28	3961.72719	141.49026	4.88	<.0001
Error	748	21708.66663	29.02228		
Corrected Total	776	25670.39382			

R-Square	Coeff Var	Root MSE	AD_ThyperRS Mean
0.154331	136.6595	5.387233	3.942085

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		2.27787467	B	4.34675115	0.52	0.6004
PreNatThimer		0.02292990		0.02215057	1.04	0.3009
Exp07mos		-0.04791747		0.03379566	-1.42	0.1566
ChildAge		-0.17130697		0.18614827	-0.92	0.3577
sexmale		2.74525836		0.40452993	6.79	<.0001
ChdBWT_Grp	1	-0.10157492	B	0.81577150	-0.12	0.9009
ChdBWT_Grp	2	-0.16535476	B	0.57005461	-0.29	0.7718
ChdBWT_Grp	3	0.00000000	B	.	.	.
MomIQ1	1	0.09696336	B	0.59874219	0.16	0.8714
MomIQ1	2	-0.61354060	B	0.51995158	-1.18	0.2384
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		-0.06950733		0.11473025	-0.61	0.5448
PctPoverty1		-0.56066852		0.20535247	-2.73	0.0065
MomEduc	0	-1.09432227	B	1.08607733	-1.01	0.3140
MomEduc	1	-0.14284316	B	0.66011473	-0.22	0.8287
MomEduc	2	-0.06766299	B	0.49724767	-0.14	0.8918
MomEduc	3	0.00000000	B	.	.	.
SingleParent		1.64890922		0.55322063	2.98	0.0030
cMedicalHist_1		0.88590399		1.37184049	0.65	0.5186
Site	HMO-A	-0.64737011	B	0.84310015	-0.77	0.4428
Site	HMO-B	0.29587244	B	0.81362683	0.36	0.7162
Site	HMO-C	-0.12026570	B	0.80429416	-0.15	0.8812
Site	HMO-D	0.00000000	B	.	.	.
DayCareCentrImpVal1		0.30560222		0.20038203	1.53	0.1277
EngOnly		0.82944355		0.45095855	1.84	0.0663
BFMthsCat	0	1.04632267	B	0.58509131	1.79	0.0741
BFMthsCat	1	1.14051082	B	0.45990198	2.48	0.0134
BFMthsCat	2	0.00000000	B	.	.	.
PreNatTuna_1		0.50219637		0.37512653	1.34	0.1811
PreNatOrgMerc_1		-0.89396467		0.43108436	-2.07	0.0384
PreNatIllDrug		2.37717245		2.08481294	1.14	0.2546
C5APGARImpVal1		0.41850512		0.37721610	1.11	0.2676
ADHDstimulant		19.53729622		5.48354269	3.56	0.0004
PctPoverty1_2		0.03167874		0.01147692	2.76	0.0059

Exhibit B.32. CRS-R: Parent Rating: Inattentive (lower = better)
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: AD_PinattentRS Conners Parent Inattent Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	33	4806.73707	145.65870	4.61	<.0001
Error	1007	31839.35131	31.61803		
Corrected Total	1040	36646.08838			

R-Square	Coeff Var	Root MSE	AD_PinattentRS Mean
0.131166	89.27152	5.622991	6.298751

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		-9.00289995	B	13.93995243	-0.65	0.5185
PreNatThimer		0.01108811		0.02150918	0.52	0.6063
Exp07mos		-0.02358467		0.03005415	-0.78	0.4328
ChildAge		3.95901845		3.03684859	1.30	0.1926
sexmale		2.32540287		0.36245247	6.42	<.0001
ChdBWT_Grp	1	0.25734703	B	0.71672068	0.36	0.7196
ChdBWT_Grp	2	-0.34394188	B	0.50279690	-0.68	0.4941
ChdBWT_Grp	3	0.00000000	B	.	.	.
ComputerExpr	0	0.08637021	B	1.82044377	0.05	0.9622
ComputerExpr	1	0.74917938	B	0.36489154	2.05	0.0403
ComputerExpr	2	0.00000000	B	.	.	.
MomIQ1	1	-0.87839529	B	0.51771351	-1.70	0.0901
MomIQ1	2	-0.54991805	B	0.46327417	-1.19	0.2355
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		-0.34762176		0.10023007	-3.47	0.0005
PctPoverty1		-0.35049919		0.18770856	-1.87	0.0622
MomEduc	0	-0.02624435	B	0.95856280	-0.03	0.9782
MomEduc	1	-0.51262795	B	0.58100302	-0.88	0.3778
MomEduc	2	0.00081419	B	0.44205445	0.00	0.9985
MomEduc	3	0.00000000	B	.	.	.
SingleParent		0.36462581		0.48040453	0.76	0.4480
cMedicalHist_1		0.79156076		1.17272630	0.67	0.4998
Site	HMO-A	-0.05863280	B	0.76716908	-0.08	0.9391
Site	HMO-B	0.68324610	B	0.73702758	0.93	0.3541
Site	HMO-C	0.49138085	B	0.74594648	0.66	0.5102
Site	HMO-D	0.00000000	B	.	.	.
ADHDstimulant		14.30399239		4.02305453	3.56	0.0004
DayCareHomeImpVal1		0.35133391		0.12440679	2.82	0.0048
MatADHD		4.08049682		1.67267153	2.44	0.0149
PctPoverty1_2		0.02203243		0.01083541	2.03	0.0423
PreNatTuna_1		0.66029327		0.34089163	1.94	0.0530
PreNatAlcohol_1		1.14560088		0.49690140	2.31	0.0213
PreNatNicotine_1		1.25961757		0.68701073	1.83	0.0670
ChdPICA_1		1.56943018		0.88992674	1.76	0.0781
PreNatFish_1		-1.27035100		0.72373432	-1.76	0.0795
MatLangDel		3.72137831		2.57658430	1.44	0.1490
DayCareCentrImpVal1		0.26531921		0.17904051	1.48	0.1387
EngOnly		0.52597363		0.39668253	1.33	0.1852
ChildAge2		-0.21575731		0.16550795	-1.30	0.1927

Exhibit B.33. CRS-R: Teacher Rating: Inattentive (lower = better)
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: AD_TinattentRS Conners Teacher Inattent Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	31	6362.78320	205.25107	4.33	<.0001
Error	745	35293.33263	47.37360		
Corrected Total	776	41656.11583			

R-Square	Coeff Var	Root MSE	AD_TinattentRS Mean
0.152745	102.9843	6.882848	6.683398

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		8.24496718	B	3.45911048	2.38	0.0174
PreNatThimer		0.00217719		0.02861709	0.08	0.9394
Exp07mos		-0.03414964		0.04346174	-0.79	0.4323
ChildAge		-0.11356431		0.23873847	-0.48	0.6344
sexmale		3.92078520		0.51976051	7.54	<.0001
ChdBWT_Grp	1	0.48525750	B	1.03610092	0.47	0.6397
ChdBWT_Grp	2	-0.35586750	B	0.72150421	-0.49	0.6220
ChdBWT_Grp	3	0.00000000	B	.	.	.
ComputerExpr	0	-2.56339680	B	2.67050960	-0.96	0.3374
ComputerExpr	1	0.57455306	B	0.51700174	1.11	0.2668
ComputerExpr	2	0.00000000	B	.	.	.
MomIQ1	1	0.94123247	B	0.76344491	1.23	0.2180
MomIQ1	2	-0.03132105	B	0.67104479	-0.05	0.9628
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		-0.40939501		0.14572602	-2.81	0.0051
PctPoverty1		-0.05010674		0.10160280	-0.49	0.6220
MomEduc	0	1.94677921	B	1.36811500	1.42	0.1552
MomEduc	1	-0.55602775	B	0.83496024	-0.67	0.5057
MomEduc	2	0.19656572	B	0.63688711	0.31	0.7577
MomEduc	3	0.00000000	B	.	.	.
SingleParent		0.21536389		0.69235596	0.31	0.7558
Site	HMO-A	-0.17011284	B	1.08519867	-0.16	0.8755
Site	HMO-B	0.97149572	B	1.04492344	0.93	0.3528
Site	HMO-C	-0.06762439	B	1.03777326	-0.07	0.9481
Site	HMO-D	0.00000000	B	.	.	.
DayCareHomeImpVal1		0.09868783		0.17019797	0.58	0.5622
PreNatFillings_1		0.67207176		0.33645469	2.00	0.0461
PreNatTuna_1		0.75755764		0.48005958	1.58	0.1150
PreNatNicotine_1		1.69444743		1.00394178	1.69	0.0919
ADHDstimulant		11.68771604		7.00981809	1.67	0.0959
BFMthsCat	0	1.44854103	B	0.75511885	1.92	0.0555
BFMthsCat	1	1.10001956	B	0.58434756	1.88	0.0602
BFMthsCat	2	0.00000000	B	.	.	.
MatADHD		4.24532663		2.67881532	1.58	0.1134
MatLangDel		5.63611876		3.51799322	1.60	0.1096
cMedicalHist_1		0.15577494		1.73987924	0.09	0.9287
PreNatHomePro_1		1.58687348		1.31701115	1.20	0.2286
PreNatAlcohol_1		0.87109421		0.77242920	1.13	0.2598

Exhibit B.34. BRIEF Parent Rating: Behavior Regulation (lower = better)
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: AD_PBehavRS Brief Parent Behave Regulation Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	29	11965.2924	412.5963	3.82	<.0001
Error	1012	109204.8804	107.9100		
Corrected Total	1041	121170.1727			

R-Square	Coeff Var	Root MSE	AD_PBehavRS Mean
0.098748	24.56934	10.38797	42.28023

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		41.82212013	B	4.41675878	9.47	<.0001
PreNatThimer		-0.02112931		0.03966398	-0.53	0.5944
Exp07mos		0.07650641		0.05531345	1.38	0.1669
ChildAge		-0.60654802		0.30960109	-1.96	0.0504
sexmale		2.15031161		0.66586022	3.23	0.0013
ChdBWT_Grp	1	-1.36159341	B	1.32107697	-1.03	0.3029
ChdBWT_Grp	2	-1.75045798	B	0.92042492	-1.90	0.0575
ChdBWT_Grp	3	0.00000000	B	.	.	.
MomIQ1	1	-0.85943778	B	0.94430326	-0.91	0.3630
MomIQ1	2	-0.58703509	B	0.85853579	-0.68	0.4943
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		0.00160728		0.18427916	0.01	0.9930
PctPoverty1		-0.68529405		0.34353661	-1.99	0.0463
MomEduc	0	2.65943247	B	1.76784333	1.50	0.1328
MomEduc	1	1.28173965	B	1.06926887	1.20	0.2309
MomEduc	2	0.62062653	B	0.81200305	0.76	0.4449
MomEduc	3	0.00000000	B	.	.	.
SingleParent		1.86446978		0.88268697	2.11	0.0349
Site	HMO-A	2.03833967	B	1.41957028	1.44	0.1513
Site	HMO-B	3.07497448	B	1.35731822	2.27	0.0237
Site	HMO-C	2.76649848	B	1.37756386	2.01	0.0449
Site	HMO-D	0.00000000	B	.	.	.
cMedicalHist_1		2.17630220		2.16598456	1.00	0.3153
OlderSibs		1.37679806		0.70267862	1.96	0.0503
DayCareCentrImpVal1		0.87625546		0.32980262	2.66	0.0080
DayCareHomeImpVal1		0.51687329		0.23044870	2.24	0.0251
PreNatNicotine_1		2.42528419		1.26394524	1.92	0.0553
PreNatTuna_1		1.04830551		0.62198271	1.69	0.0922
PreNatHomePro_1		3.31503605		1.72373035	1.92	0.0547
ADHDstimulant		21.86285447		7.40915387	2.95	0.0032
ChdPICA_1		3.70447652		1.64461001	2.25	0.0245
MatADHD		10.43012639		3.05907892	3.41	0.0007
PctPoverty1_2		0.04562536		0.01987804	2.30	0.0219
PreNatAlcohol_1		1.24203668		0.91862079	1.35	0.1767

Exhibit B.35. BRIEF Teacher Rating: Behavior Regulation (lower = better)
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: AD_TBehavRS Brief Teacher Behave Regulation Raw

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	36	17189.6481	477.4902	3.74	<.0001
Error	745	95188.2048	127.7694		
Corrected Total	781	112377.8529			

R-Square	Coeff Var	Root MSE	AD_TBehavRS Mean
0.152963	29.13718	11.30351	38.79412

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		77.15379350	B	33.33988216	2.31	0.0209
PreNatThimer		0.03548616		0.04750101	0.75	0.4553
Exp07mos		-0.04461168		0.07194519	-0.62	0.5354
ChildAge		-7.83055942		6.94475175	-1.13	0.2599
sexmale		4.91268991		0.84801114	5.79	<.0001
ChdBWT_Grp	1	-1.17179831	B	1.72145897	-0.68	0.4963
ChdBWT_Grp	2	-0.64553856	B	1.19249606	-0.54	0.5884
ChdBWT_Grp	3	0.00000000	B	.	.	.
MomIQ1	1	1.10684707	B	1.26495641	0.88	0.3819
MomIQ1	2	-0.23800633	B	1.10766669	-0.21	0.8299
MomIQ1	3	0.00000000	B	.	.	.
HOME_TotalIndex		-0.26385500		0.24001693	-1.10	0.2720
PctPoverty1		-3.14798091		1.00112456	-3.14	0.0017
MomEduc	0	-2.74191790	B	2.32566958	-1.18	0.2388
MomEduc	1	-0.23472786	B	1.38841490	-0.17	0.8658
MomEduc	2	-0.29604118	B	1.05103622	-0.28	0.7783
MomEduc	3	0.00000000	B	.	.	.
SingleParent		1.05685110		1.19722371	0.88	0.3777
Site	HMO-A	-1.15521142	B	1.79445122	-0.64	0.5199
Site	HMO-B	0.51970246	B	1.72889993	0.30	0.7638
Site	HMO-C	-1.53651955	B	1.71959619	-0.89	0.3719
Site	HMO-D	0.00000000	B	.	.	.
cMedicalHist_1		4.80320069		2.86373417	1.68	0.0939
OlderSibs		-1.29588922		0.97964679	-1.32	0.1863
YoungerSibs		-1.60709838		0.95578526	-1.68	0.0931
DayCareCentrImpVal1		1.36403187		0.42452098	3.21	0.0014
EngOnly		1.98462528		0.94760218	2.09	0.0366
BFMthsCat	0	1.49756841	B	1.23473014	1.21	0.2256
BFMthsCat	1	1.60008498	B	0.96920549	1.65	0.0992
BFMthsCat	2	0.00000000	B	.	.	.
PreNatAlcohol_1		1.83463316		1.28080204	1.43	0.1524
PreNatlead_1		-1.67625135		1.16551061	-1.44	0.1508
ADHDstimulant		38.97436043		11.55467774	3.37	0.0008
MatADHD		7.06307904		4.41946011	1.60	0.1104
PctPoverty1_2		0.33024335		0.12577439	2.63	0.0088
PctPoverty1_3		-0.00860295		0.00421835	-2.04	0.0418
C5APGARImpVal1		0.77506142		0.79781945	0.97	0.3316
ChildAge2		0.39596381		0.37803799	1.05	0.2952
PreNatNicotine_1		0.85654635		1.64690821	0.52	0.6032
DayCareHomeImpVal1		0.17953933		0.28122943	0.64	0.5234
MatSTUTTER		-2.79089122		3.70935524	-0.75	0.4521
PreNatHomePro_1		1.13597687		2.16526234	0.52	0.6000

Exhibit B.36. Motor tics (current): Assessor Rating (lower = better)
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Response Variable Tc_CAMotorYN Tics CA Motor Yes/No

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	629.246	626.375
SC	634.197	789.752
-2 Log L	627.246	560.375

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	66.8708	32	0.0003
Score	63.8336	32	0.0007
Wald	56.6682	32	0.0046

Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-194.1	88.2093	4.8424	0.0278
PreNatThimer		1	0.0174	0.0107	2.6443	0.1039
Exp07mos		1	0.0323	0.0220	2.1582	0.1418
ChildAge		1	64.1172	29.3441	4.7743	0.0289
sexmale		1	0.7378	0.2447	9.0909	0.0026
ChdBWT_Grp	1	1	0.3984	0.4504	0.7823	0.3764
ChdBWT_Grp	2	1	-0.0411	0.3347	0.0151	0.9021
MomIQ1	1	1	0.3597	0.3487	1.0639	0.3023
MomIQ1	2	1	0.4026	0.3004	1.7956	0.1802
HOME_TotalIndex		1	-0.00120	0.0630	0.0004	0.9848
PctPoverty1		1	0.2915	0.2784	1.0963	0.2951
MomEduc		1	0.0893	0.1604	0.3098	0.5778
SingleParent		1	-0.2547	0.3295	0.5976	0.4395
Site	HMO-A	1	-0.7494	0.4872	2.3667	0.1239
Site	HMO-B	1	-0.0772	0.4409	0.0307	0.8610
Site	HMO-C	1	-0.2874	0.4383	0.4300	0.5120
ChildAge2		1	-7.1294	3.2260	4.8841	0.0271
ChildAge3		1	0.2616	0.1173	4.9703	0.0258
PctPoverty1_2		1	-0.0346	0.0352	0.9671	0.3254
PctPoverty1_3		1	0.00118	0.00115	1.0632	0.3025
BFMthsCat	0	1	0.3134	0.3428	0.8355	0.3607
BFMthsCat	1	1	0.6054	0.2809	4.6448	0.0311
C5APGARImpVal1		1	-0.2432	0.1890	1.6559	0.1982
cMedicalHist_1		1	0.6732	0.7013	0.9214	0.3371
ComputerExpr		1	0.6113	0.2476	6.0975	0.0135
DayCareCentrImpVal1		1	0.0918	0.1116	0.6774	0.4105
DayCareHomeImpVal1		1	0.1059	0.0737	2.0605	0.1512
IronDef		1	1.3277	0.6515	4.1530	0.0416
MatSTUTTER		1	1.1835	0.8274	2.0461	0.1526
PreNatAlcohol_1		1	-0.9482	0.5812	2.6615	0.1028
PreNatFish_1		1	-1.1366	0.6463	3.0927	0.0786
PreNatHomePro_1		1	0.2000	0.5364	0.1390	0.7093
PreNatTuna_1		1	0.3654	0.2189	2.7849	0.0952

Association of Predicted Probabilities and Observed Responses

Percent Concordant	74.0	Somers' D	0.486
Percent Discordant	25.3	Gamma	0.490
Percent Tied	0.7	Tau-a	0.079
Pairs	88443	c	0.743

Exhibit B.37. Phonics tics (current): Assessor Rating (lower = better)
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Response Variable Tc_CAPhonicYN Tics CA Phonic Yes/No

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	546.580	540.324
SC	551.531	654.193
-2 Log L	544.580	494.324

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	50.2566	22	0.0005
Score	48.1513	22	0.0010
Wald	43.9004	22	0.0036

Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-2.1108	1.6194	1.6990	0.1924
PreNatThimer		1	-0.0106	0.0181	0.3392	0.5603
Exp07mos		1	0.0372	0.0227	2.6795	0.1016
ChildAge		1	-0.2429	0.1166	4.3395	0.0372
sexmale		1	0.7796	0.2611	8.9138	0.0028
ChdBWT_Grp	1	1	-0.0437	0.5033	0.0075	0.9309
ChdBWT_Grp	2	1	-0.0927	0.3616	0.0658	0.7976
MomIQ1	1	1	0.5677	0.3625	2.4523	0.1174
MomIQ1	2	1	0.0249	0.3433	0.0053	0.9422
HOME_TotalIndex		1	-0.0967	0.0674	2.0558	0.1516
PctPoverty1		1	0.6314	0.3118	4.1002	0.0429
MomEduc		1	0.1286	0.1700	0.5722	0.4494
SingleParent		1	0.6588	0.3019	4.7609	0.0291
Site	HMO-A	1	-0.8057	0.4935	2.6653	0.1026
Site	HMO-B	1	-0.3763	0.4425	0.7234	0.3950
Site	HMO-C	1	-1.1874	0.4987	5.6683	0.0173
PctPoverty1_2		1	-0.0711	0.0401	3.1479	0.0760
PctPoverty1_3		1	0.00215	0.00130	2.7153	0.0994
DayCareHomeImpVal1		1	0.1492	0.0769	3.7660	0.0523
PreNatAlcohol_1		1	-0.3811	0.4729	0.6496	0.4203
PreNatFish_1		1	-1.7895	1.0311	3.0118	0.0827
PreNatHomePro_1		1	-1.2085	1.0351	1.3631	0.2430
PreNatTuna_1		1	0.3886	0.2352	2.7291	0.0985

Association of Predicted Probabilities and Observed Responses

Percent Concordant	71.7	Somers' D	0.443
Percent Discordant	27.4	Gamma	0.447
Percent Tied	0.9	Tau-a	0.060
Pairs	73568	c	0.721

Exhibit B.38. Motor tics (current): Parent Rating (lower = better)
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Response Variable Tc_PWeekMotorYN Tics Parent Motor This Week Yes/No

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	632.178	607.924
SC	637.120	775.957
-2 Log L	630.178	539.924

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	90.2542	33	<.0001
Score	100.6880	33	<.0001
Wald	73.2901	33	<.0001

Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-82.0971	89.0297	0.8503	0.3565
PreNatThimer		1	0.00256	0.0121	0.0450	0.8319
Exp07mos		1	-0.00095	0.0206	0.0021	0.9630
ChildAge		1	25.4362	29.4884	0.7441	0.3884
sexmale		1	0.6542	0.2502	6.8395	0.0089
ChdBWT_Grp	1	1	-0.2165	0.4216	0.2638	0.6075
ChdBWT_Grp	2	1	-0.8590	0.3076	7.7982	0.0052
MomIQ1	1	1	0.2668	0.3461	0.5944	0.4407
MomIQ1	2	1	0.0780	0.3156	0.0610	0.8049
HOME_TotalIndex		1	0.0103	0.0649	0.0252	0.8738
PctPoverty1		1	0.8538	0.3281	6.7719	0.0093
MomEduc		1	-0.2853	0.1545	3.4104	0.0648
SingleParent		1	-0.1587	0.3159	0.2523	0.6155
Site	HMO-A	1	-1.3120	0.4610	8.0982	0.0044
Site	HMO-B	1	-0.6861	0.4271	2.5805	0.1082
Site	HMO-C	1	-1.0048	0.4509	4.9650	0.0259
ChildAge2		1	-2.8738	3.2318	0.7907	0.3739
ChildAge3		1	0.1082	0.1172	0.8517	0.3561
PctPoverty1_2		1	-0.1239	0.0454	7.4519	0.0063
PctPoverty1_3		1	0.00447	0.00156	8.2277	0.0041
C5APGARImpVal1		1	0.4748	0.3024	2.4654	0.1164
DayCareCentrImpVal1		1	0.2786	0.1072	6.7520	0.0094
EngOnly		1	-0.4773	0.2611	3.3404	0.0676
IronDef		1	0.9195	0.6343	2.1013	0.1472
MatADHD		1	1.3623	0.7494	3.3044	0.0691
MatSTUTTER		1	1.1499	0.9550	1.4499	0.2285
MatSpeechDel		1	0.9853	0.9655	1.0416	0.3075
PreNatFish_1		1	-0.7765	0.5427	2.0474	0.1525
PreNatHomePro_1		1	1.0448	0.4826	4.6868	0.0304
PreNatIllDrug		1	1.2981	0.7750	2.8058	0.0939
PreNatNicotine_1		1	1.2077	0.3449	12.2624	0.0005
PreNatOrgMerc_1		1	0.4473	0.2065	4.6945	0.0303
PreNatTuna_1		1	0.4285	0.2287	3.5096	0.0610
OlderSibs		1	-0.3318	0.2516	1.7394	0.1872

Association of Predicted Probabilities and Observed Responses

Percent Concordant	75.9	Somers' D	0.525
Percent Discordant	23.4	Gamma	0.528
Percent Tied	0.7	Tau-a	0.087
Pairs	88454	c	0.762

Exhibit B.39. Phonics tics (current): Parent Rating (lower = better)
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Response Variable Tc_PWeekPhonicYN Tics Parent Phonic This Week Yes/No

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	681.917	691.092
SC	686.861	849.303
-2 Log L	679.917	627.092

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	52.8246	31	0.0086
Score	56.7112	31	0.0032
Wald	49.8846	31	0.0172

Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-41.8542	80.4942	0.2704	0.6031
PreNatThimer		1	-0.0136	0.0165	0.6810	0.4092
Exp07mos		1	0.00721	0.0186	0.1498	0.6987
ChildAge		1	13.7121	26.7991	0.2618	0.6089
sexmale		1	0.4455	0.2252	3.9134	0.0479
ChdBWT_Grp	1	1	-0.2883	0.4025	0.5132	0.4737
ChdBWT_Grp	2	1	-0.5802	0.2789	4.3286	0.0375
MomIQ1	1	1	0.2493	0.3192	0.6099	0.4348
MomIQ1	2	1	-0.1567	0.2986	0.2754	0.5998
HOME_TotalIndex		1	-0.0272	0.0597	0.2073	0.6489
PctPoverty1		1	0.2413	0.2558	0.8903	0.3454
MomEduc		1	-0.1833	0.1484	1.5254	0.2168
SingleParent		1	0.2228	0.2820	0.6244	0.4294
Site	HMO-A	1	-0.9580	0.4577	4.3816	0.0363
Site	HMO-B	1	-0.3258	0.4149	0.6165	0.4323
Site	HMO-C	1	-0.1582	0.4132	0.1467	0.7018
ChildAge2		1	-1.5662	2.9501	0.2819	0.5955
ChildAge3		1	0.0590	0.1074	0.3017	0.5828
PctPoverty1_2		1	-0.0310	0.0334	0.8591	0.3540
PctPoverty1_3		1	0.00103	0.00112	0.8493	0.3567
BFMthsCat	0	1	-0.0692	0.3083	0.0504	0.8223
BFMthsCat	1	1	0.1697	0.2573	0.4350	0.5095
cMedicalHist_1		1	0.6119	0.6751	0.8214	0.3648
DayCareCentrImpVal1		1	0.2581	0.0951	7.3585	0.0067
MatADHD		1	1.4105	0.6638	4.5146	0.0336
MatSpeechDel		1	1.2886	0.7119	3.2763	0.0703
PreNatAlcohol_1		1	-0.4250	0.3897	1.1894	0.2755
PreNatHomePro_1		1	0.6032	0.4685	1.6575	0.1979
PreNatIllDrug		1	0.8886	0.7992	1.2360	0.2662
PreNatNicotine_1		1	0.7761	0.3422	5.1446	0.0233
PreNatTuna_1		1	0.3242	0.2069	2.4538	0.1172
PreNatlead_1		1	0.3453	0.2895	1.4232	0.2329

Association of Predicted Probabilities and Observed Responses

Percent Concordant	70.8	Somers' D	0.424
Percent Discordant	28.4	Gamma	0.428
Percent Tied	0.8	Tau-a	0.077
Pairs	97860	c	0.712

Exhibit B.40. WASI Verbal IQ
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: IF_VIQAvSS WASI Verbal IQ Scaled

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	31	70339.9524	2269.0307	15.18	<.0001
Error	1000	149465.0089	149.4650		
Corrected Total	1031	219804.9612			

R-Square	Coeff Var	Root MSE	IF_VIQAvSS Mean
0.320011	11.38454	12.22559	107.3876

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		102.3460987	B	8.94082484	11.45	<.0001
PreNatThimer		0.0535105		0.04671153	1.15	0.2523
Exp07mos		-0.0436742		0.06571154	-0.66	0.5064
ChildAge		0.3311707		0.36731073	0.90	0.3675
sexmale		-2.3432497		0.78649202	-2.98	0.0030
ChdBWT_Grp	1	-2.7505016	B	1.54425466	-1.78	0.0752
ChdBWT_Grp	2	1.4085207	B	1.09085945	1.29	0.1969
ChdBWT_Grp	3	0.0000000	B	.	.	.
ComputerExpr	0	-4.2210606	B	3.95377977	-1.07	0.2860
ComputerExpr	1	-2.6140885	B	0.79918877	-3.27	0.0011
ComputerExpr	2	0.0000000	B	.	.	.
MomIQ1	1	-6.7397340	B	1.16246183	-5.80	<.0001
MomIQ1	2	-4.3345386	B	1.02837008	-4.21	<.0001
MomIQ1	3	0.0000000	B	.	.	.
HOME_TotalIndex		0.6350195		0.21947084	2.89	0.0039
PctPoverty1		0.3447060		0.17081948	2.02	0.0439
MomEduc	0	-2.8576237	B	2.07254249	-1.38	0.1683
MomEduc	1	-3.5666651	B	1.25585314	-2.84	0.0046
MomEduc	2	-1.8513792	B	0.96241720	-1.92	0.0547
MomEduc	3	0.0000000	B	.	.	.
SingleParent		-2.1451428		1.05068510	-2.04	0.0414
Site	HMO-A	-6.7637870	B	1.69332611	-3.99	<.0001
Site	HMO-B	-7.5748088	B	1.62213553	-4.67	<.0001
Site	HMO-C	-3.9116160	B	1.64599728	-2.38	0.0177
Site	HMO-D	0.0000000	B	.	.	.
BFMthsCat	0	-6.5295375	B	1.10946757	-5.89	<.0001
BFMthsCat	1	-5.8966448	B	0.91849497	-6.42	<.0001
BFMthsCat	2	0.0000000	B	.	.	.
OlderSibs		-4.4565025		0.89831165	-4.96	<.0001
YoungerSibs		-2.5875351		0.86816695	-2.98	0.0029
C5APGARImpVal1		1.6493997		0.78376385	2.10	0.0356
PreNatFish_1		-3.0625838		1.57485029	-1.94	0.0521
EngOnly		-1.7502633		0.86170762	-2.03	0.0425
ADHDstimulant		-16.6942522		8.91509022	-1.87	0.0614
MatSTUTTER		6.6367855		3.72966646	1.78	0.0755
ChdPICA_1		1.9641535		1.93632017	1.01	0.3106
DayCareCentrImpVal1		0.5907421		0.39313822	1.50	0.1332
MatLangDel		-10.1424110		5.61037825	-1.81	0.0709

Exhibit B.41. WASI Performance IQ
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: IF_PIQAvSS WASI Performance IQ Scaled

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	27	44601.4758	1651.9065	8.46	<.0001
Error	1010	197282.8209	195.3295		
Corrected Total	1037	241884.2967			

R-Square	Coeff Var	Root MSE	IF_PIQAvSS Mean
0.184392	13.30294	13.97603	105.0597

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		106.5245799	B	6.00574563	17.74	<.0001
PreNatThimer		-0.0081189		0.05413295	-0.15	0.8808
Exp07mos		0.1300492		0.07432953	1.75	0.0805
ChildAge		0.4727451		0.41689627	1.13	0.2571
sexmale		1.7403544		0.89498663	1.94	0.0521
ChdBWT_Grp	1	-3.4050694	B	1.77566680	-1.92	0.0554
ChdBWT_Grp	2	0.1479939	B	1.24625879	0.12	0.9055
ChdBWT_Grp	3	0.0000000	B	.	.	.
ComputerExpr	0	-5.8280614	B	4.51730333	-1.29	0.1973
ComputerExpr	1	-1.8968479	B	0.90693500	-2.09	0.0367
ComputerExpr	2	0.0000000	B	.	.	.
MomIQ1	1	-6.3850938	B	1.32170716	-4.83	<.0001
MomIQ1	2	-5.7185365	B	1.16538592	-4.91	<.0001
MomIQ1	3	0.0000000	B	.	.	.
HOME_TotalIndex		0.3412097		0.24943775	1.37	0.1716
PctPoverty1		0.1310969		0.18867038	0.69	0.4873
MomEduc	0	-3.6761714	B	2.35873345	-1.56	0.1194
MomEduc	1	-2.3723087	B	1.43955910	-1.65	0.0997
MomEduc	2	-3.0893860	B	1.09452186	-2.82	0.0049
MomEduc	3	0.0000000	B	.	.	.
SingleParent		-1.8845599		1.18607628	-1.59	0.1124
Site	HMO-A	-1.6396731	B	1.93999483	-0.85	0.3982
Site	HMO-B	-5.4898285	B	1.87489729	-2.93	0.0035
Site	HMO-C	-2.4757801	B	1.89936705	-1.30	0.1927
Site	HMO-D	0.0000000	B	.	.	.
BFMthsCat	0	-5.2129704	B	1.26206240	-4.13	<.0001
BFMthsCat	1	-1.3901906	B	1.04336627	-1.33	0.1830
BFMthsCat	2	0.0000000	B	.	.	.
EngOnly		-2.6619835		0.98003214	-2.72	0.0067
YoungerSibs		-1.6993815		0.90462924	-1.88	0.0606
PreNatFish_1		-3.4984420		1.77419929	-1.97	0.0489
ADHDstimulant		-15.6114736		9.97203939	-1.57	0.1178
DayCareCentrImpVal1		0.5912127		0.44335012	1.33	0.1827
IronDef_1		-4.3923202		3.05698398	-1.44	0.1511

Exhibit B.42. WASI Full Scale IQ
Results from Model: Y = B0+B1(PreNatThimer) + B2(Exp07mos) + covariates + e

Dependent Variable: IF_FSIQAvSS WASI Full Scale IQ Scaled

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	37	65937.8343	1782.1036	11.64	<.0001
Error	987	151126.0154	153.1165		
Corrected Total	1024	217063.8498			

R-Square	Coeff Var	Root MSE	IF_FSIQAvSS Mean
0.303772	11.55377	12.37403	107.0995

Parameter		Estimate		Standard Error	t Value	Pr > |t|
Intercept		126.5250000	B	295.2550573	0.43	0.6684
PreNatThimer		0.0257707		0.0483595	0.53	0.5942
Exp07mos		0.0590716		0.0677106	0.87	0.3832
ChildAge		-13.3981491		98.3375142	-0.14	0.8917
sexmale		-0.3697602		0.8020110	-0.46	0.6449
ChdBWT_Grp	1	-2.9642046	B	1.5809743	-1.87	0.0611
ChdBWT_Grp	2	0.9084395	B	1.1076961	0.82	0.4123
ChdBWT_Grp	3	0.0000000	B	.	.	.
ComputerExpr	0	-5.7208476	B	4.0082475	-1.43	0.1538
ComputerExpr	1	-2.4815095	B	0.8116904	-3.06	0.0023
ComputerExpr	2	0.0000000	B	.	.	.
MomIQ1	1	-7.2942423	B	1.1903565	-6.13	<.0001
MomIQ1	2	-5.5903890	B	1.0468613	-5.34	<.0001
MomIQ1	3	0.0000000	B	.	.	.
HOME_TotalIndex		0.5147310		0.2250700	2.29	0.0224
PctPoverty1		0.1850712		0.4327731	0.43	0.6690
MomEduc	0	-3.5457936	B	2.1548314	-1.65	0.1002
MomEduc	1	-3.1642046	B	1.2974352	-2.44	0.0149
MomEduc	2	-2.7339995	B	0.9816084	-2.79	0.0055
MomEduc	3	0.0000000	B	.	.	.
SingleParent		-1.9804963		1.0872939	-1.82	0.0688
Site	HMO-A	-4.6207417	B	1.7446498	-2.65	0.0082
Site	HMO-B	-7.4550436	B	1.6848308	-4.42	<.0001
Site	HMO-C	-3.6119417	B	1.7136397	-2.11	0.0353
Site	HMO-D	0.0000000	B	.	.	.
BFMthsCat	0	-6.6338037	B	1.1385119	-5.83	<.0001
BFMthsCat	1	-4.0456842	B	0.9386322	-4.31	<.0001
BFMthsCat	2	0.0000000	B	.	.	.
OlderSibs		-2.6768638		0.9164350	-2.92	0.0036
YoungerSibs		-2.4191530		0.8954875	-2.70	0.0070
EngOnly		-2.2981340		0.8870243	-2.59	0.0097
PreNatFish_1		-3.6722147		1.5981722	-2.30	0.0218
ADHDstimulant		-17.2261068		9.0720797	-1.90	0.0579
C5APGARImpVal1		1.3444659		0.7986080	1.68	0.0926
DayCareCentrImpVal1		0.5742312		0.4007232	1.43	0.1522
IronDef_1		-4.0302041		2.7210356	-1.48	0.1389
MatSTUTTER		4.4806668		3.7921706	1.18	0.2377
MatLangDel		-3.3088872		6.4343109	-0.51	0.6072
MatADHD		-4.1424889		3.6879966	-1.12	0.2616
PreNatNicotine_1		-1.4609275		1.5224023	-0.96	0.3375
DayCareHomeImpVal1		-0.2410973		0.2810925	-0.86	0.3913
PctPoverty1_2		0.0054006		0.0252076	0.21	0.8304
ChildAge2		2.1506831		10.8327569	0.20	0.8427
ChildAge3		-0.1005009		0.3947896	-0.25	0.7991

3. Appendix C. Model Checking with Partial-Partial Residual Plots

This appendix presents results of model diagnostic procedures and results of analyses that were conducted to assess the sensitivity of model results to points of potentially high influence. The primary diagnostic procedures employed was the production of partial-partial residual plots, which are useful for identification of observations that may be outliers, points of high leverage, or points of high influence. We also ran additional diagnostic procedures to evaluate whether there were any problems with multicollinearity. Since no problems with multicollinearity were indicated, those analyses are not presented.

Partial-partial residual plot diagnostics were produced separately for each of the three main exposure measures of interest: *HepB* [2] and *PreNatThimer*[3] , and the *Exp07mos*[4] exposure measures. And separate plots were created for males and females. Diagnostics, were conducted for the *Exp17mos*[5] measure of postnatal exposure but are not shown here because they were very similar to those for the *Exp07mos* measure.

Using the *HepB* exposure measure as an example, we now explain the steps involved in the production of a partial-partial residual plot. Each partial-partial residual plot was created in three steps. First, residuals[6] were obtained from a regression model that is the same as the main effects model specified in Section 9.2.2.2, except that the *HepB* term is omitted, and the model was fit to data from only one sex (boys or girls). In the second step, the residuals were obtained from the same model, except where the outcome variable is the *HepB* variable. In the third step, a scatter plot was created using the residual values from the first step plotted along the y-axis, and the residuals from the second step plotted along the x-axis.

Overlaid on each partial-partial plot is a linear regression line showing the slope of the exposure effect, (e.g., the *HepB* effect), and a nonparametric scatter plot smoothing curve. The simple linear regression of the residuals from the first step on the residuals from the second step gives a slope for the exposure effect that is identical to the estimated effect from the main analytic model fit to data from only one sex.

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[2] The *HepB* variable is a measure of cumulative exposure to mecury from thimerosal in vaccines and immune globulins for the age range spanning birth through 28 days. The cumulative measure is divided by the child's body weight at the time of vaccine receipt. The variable is called *HepB* because most children that had any exposure during this age range were exposed via receipt of the Hepatitis B vaccine. Several children also received Hepatitis B immune globulins during this age range. Their values in the *HepB* variable are much higher. For details on the coding of the *HepB* variable, see Chapter 7.

[3] *PreNatThimer* is a measure of prenatal exposure to ethylmercury. See Chapter 7 for details.

[4] *Exp07mos* is a measure of cumulative exposure to ethylmercury during the age range of birth to 7 months (1-214 days). See Chapter 7 for details.

[5] *Exp07mos* is a measure of cumulative exposure to ethylmercury during the age range of birth to 7 months (1-214 days). See Chapter 7 for details.

[6] A residual is the difference between an observed value and a predicted value from the model.

The plots indicate that,

- For *HepB*:
  - The distribution of the *HepB* exposure variable has an extremely long tail, making the *HepB* estimates susceptible to influence by a small number of very high leverage observations.
- For *PreNatThimer:*
  - The distribution of the *PreNatThimer* exposure variable has an extremely long tail, making the *PreNatThimer* estimates susceptible to influence by a small number of very high leverage observations.
- For *Exp07mos*:
  - The distribution of the *Exp07mos* exposure measure does not have extremely long tails. There is little potential for an observation to have a unusually high degree of leverage, and therefore estimates for *Exp07mos* are unlikely to be unduly influenced a small number of highly influential observations.

3.1. Partial-partial Plots for HepB Effects

Plots are shown for all outcome measures in the same order as they appear in the model results summary tables in Chapter 9 of Volume I of the Technical Report. The first plot shown in the upper left-hand panel of Exhibit B.1 shows the partial-partial plot for the *HepB* effect for the Boston Naming Test for females. The y- and x-axes of the plots correspond to outcome and exposures, respectively. A residual shown, for example, as being high along the y-axis dimension indicates someone who scored higher on the outcome measure than expected, given the person's age, sex, family demographics and all other covariates. And a residual that is far to the right along the x-axis indicates a person who had higher than expected values on the *HepB* measure of exposure, given the person's age, sex, family demographics and all other covariates. The plot shows two dominant swarms of points that are residuals from individuals who had either of the two typical *HepB* exposure amounts – the leftmost swarm being the children who received zero exposure in the first month of life, and the large swarm shown to the right representing children that received 12.5 micrograms of mercury from a single hepatitis-b vaccine received in the first month of life.

The plot shows that there are a few points appearing out to the right of the dominant swarms of points. These are the residuals of high-exposure individuals that received a hepatitis-b immune globulin in addition to a hepatitis-b vaccine, or received two hepatitis-b vaccines in the first month of life.

A residual that is far from the mean along the x-axis (e.g. a high exposure individual) has high *leverage*. To understand the term "leverage" think of a see-saw where the fulcrum is not in the center, but is instead, much closer to one end than the other. A light person on the long end of the see-saw can lift a heavy person on the short end by applying relatively little force because the person on the long end has leverage working for them. On the residual plot, imagine that the *HepB* slope is the see-saw and the fulcrum is placed at the

mean of *HepB* along the x-axis. The fulcrum would be located on the x-axis around zero. An individual that is far from the fulcrum will have high leverage on the *HepB* see-saw.

A residual that is far from the regression line in the y-axis direction has high *distance*. The greater the distance, the greater the force exerted on the see-saw. To understand why distance is related to the force exerted on the slope of the regression line, recall that the algorithm for finding the slope of a regression line minimizes the sum of squared distances of the residuals. A point that is far from the regression line will have a large value of its squared distance. The algorithm will try to reduce that squared distance by moving the regression line closer to the distant point.

A residual that is both high leverage (far from the mean on the x-axis), and high distance (exerts a lot of force on the slope) is likely to be a point of high *influence*. A point of high influence has much more weight than other points in determining the slope of the regression line. In the plot in the upper left-hand panel of Exhibit B.1, the point that is the farthest to the right, and well above the mean (the mean of residuals is zero and is indicated by a horizontal dotted line), could potentially be exerting a great deal of influence on the slope of the regression line for the *HepB* effect. However, in this example, the point that is similarly far out to the right on the x-axis, but just below the mean is likely to be counteracting the effect of the former.

Binary outcomes such as the *Parent Reported Motor Tics* outcome, shown in the middle panel of Exhibit B.13, were analyzed in a logistic regression models. The plots corresponding to binary outcomes are not residual plots, but rather are simply plots of the outcome value (1=tics present, 0= tics absent) against the values of the *HepB* exposure measure [7]. The plot for *Parent Reported Motor Tics* shows that none of the high exposure females had parent reported motor tics. This plot alerts us to the concern that this small handful of high exposure individuals may have been overly influential in producing the statistically significant estimate of a beneficial *HepB* effect in females.

Exhibit B.7 shows residual plots from Finger Tapping outcome measures where model results indicated beneficial *HepB* effects for males. A single individual that had very high scores on the finger tapping assessments is indicated with a filled diamond-shaped plotting symbol. It has been verified that this individual's very high score is a real score and is not the result of a data entry error. This was not a high exposure individual. However, since his score was so much higher than the scores of all other individuals, this one particular child's data may have been influential in producing the estimate of the beneficial *HepB* effect.

[7] The plot shows "jittered" values of outcome variable along the y-axis. Possible values for motor tics are zero or one. If the zero/one values were plotted, the plotting symbols would tend to lie on top of one another so that many could not be seen. "Jittered" values are obtained by adding a small, random number to the value. Each jittered value is slightly different than zero or one. This allows more of the individual plotting symbols to be in view.

3.2. Partial-partial plots for PreNatThimer Effects

Partial-partial residual plots for *PreNatThimer* effects are shown in Exhibits B.15–B.28. Similar to the *HepB* exposure measure, there were a few individuals with *PreNatThimer* exposure measures that were much higher that then the rest. The distribution of this variable is cause for concern because a few unusual observations could be highly influential on the regression slope.

3.3. Partial-partial plots for Exp17mos Effects

Exhibits B.29 – B.42 indicate that the distribution of the *Exp17mos* measure is such that it would be unlikely to find a single or just a few high leverage observations with the potential to exert undue influence on the estimated slope.

3.4. Sensitivity Testing

The partial-partial residual plots made obvious the unevenness of the distributions of the *PreNatThimer* and *HepB* exposure measures. The plots showed a small number of cases with *PreNatThimer* and *HepB* values that strayed very far from the mean values. Those high leverage cases have the potential to have a great deal of influence on the estimated exposure effects. The plots also identified an individual male that had typical exposure values, but who had unusually high scores on the finger tapping tests.

In their chapter on regression diagnostics, Bollen and Jackman (1990) make the argument that:

> "Regression analysis is a powerful tool in social research because it helps to identify and summarize relations between variables. The emphasis on generalization is critical: Among the many assumptions that statistical analysis involves is the idea that a minority of observations does not drive the results. We are justly skeptical of empirical results that are unduly sensitive to one case (or to a very small number of observations)."

The argument articulated above motivates analyses to evaluate the sensitivity of the model results to the high leverage observations identified in the partial-partial residual plots. In order to assess sensitivity of the model results to the high-leverage observations, we compared the results of the following three sets of models. The first set of models was fit to the full data set, as reported in Chapter 9 of Volume I of the Technical Report. The second set of models was identical to the first except that data from a single individual was omitted from the analysis. This individual was the male, identified in the partial-partial residual plots, that had unusually high values on the finger tapping measures. As will be shown subsequently, the estimated *HepB* exposure effects for were not particularly sensitive to the inclusion or omission of this one individual.

The approach in the third set of models was to truncate the distributions of the *HepB* and *PreNatThimer* measures so that neither had a long tail, and then to re-fit the set of sex-by-exposure interaction models with the truncated exposure measures substituted in place of the original measures.

The truncated version of *PreNatThimer* was created by recoding the 13 observations that had very high values of 50, 62.75, or 100 to the more frequently occurring value of 25. The truncated version of the *HepB* measure was created by simply making a dichotomous (yes/no) variable which takes the value "1" if the child had any thimerosal exposure during the age range from birth through 28 days of life, and takes the value "0" if there was no exposure. We will refer to both the original *HepB* variable, and the truncated (yes/no coded) version as "Month-1 exposure variables".

In this set of models the handful of high exposure children have no greater leverage on the regression slopes than children that had typical exposure amounts. These models may, of course, underestimate exposure effects because they reduce the variation of the exposure measures. Nonetheless, they may help us understand the influence of the high leverage points on the results. These models were of the same form as specified for the sex-by-exposure interaction (Section 9.2.3.2, Model 2, Volume I of Technical Report) except that the truncated prenatal and Month-1 exposure variables (named *PN_Trunc* and *HepB_YN*) replaced the originally coded prenatal and Month-1 exposure variables (*PreNatThimer* and *HepB*).

It should be noted that the very high leverage observations are just as likely to hide effects as to cause them. If a few very high exposure individuals had near average scores on a particular outcome measure, then their influence could be to draw the regression slope toward zero, thus potentially hiding exposure effects. The strategy of fitting models to the data with truncated exposure variables could potentially illuminate exposure effects that would be otherwise hidden due to high-leverage, but average scoring high exposure individuals.

3.4.1. Results

The estimated effects of *HepB* exposure on the finger tapping tests for males were not particularly sensitive to the inclusion or omission of the male with the extremely high scores. In the full data set that included the male the estimates, standard errors, and p-values for *HepB* effects on *Finger Tapping Dominant Hand*, were 0.41 (0.14), p=0.004, and for *Finger Tapping Non-dominant Hand* were 0.27 (0.13), p=0.038. After removal of the male with the unusual score the corresponding results were 0.37 (0.13), p=0.006 for *Finger Tapping Dominant Hand*, and 0.25 (0.12), p=0.046 for *Finger Tapping Non-dominant Hand.*

The results from the models with the truncated prenatal and Month-1 exposure variables are summarized in Exhibits B.43 and B.44. By comparing to the results from the models

with the original coding of the exposure variables, shown in Exhibits 9.2.3.1 and 9.2.3.2 of Volume I of the Technical Report, we conclude that the estimates were not overly sensitive to the effects of the high leverage and potentially high influence observations. Although there are some minor differences, the pattern of results looks similar in the two sets of summaries. In both there are small numbers of effects that are significant, some of which are in the direction of benefit, others in the direction of harm.

For females, there were no significant prenatal effects using either the original coding or the truncated prenatal exposure variable. Use of the truncated Month-1 exposure variable tipped the estimate for neonatal exposure effects on the WASI full Scale IQ measure below the $p<0.05$ criterion for statistical significance. With the original coding, it was a little above the criterion, having a p-value of 0.098. The truncated coding also resulted in a significant neonatal exposure effect on the NEPSY Speeded naming test that was not significant with the originally coded variable. This result was in the direction of harm. For males, however, the truncated prenatal exposure measure resulted in a significant beneficial effect of prenatal exposure on the NEPSY Speeded naming outcome measure. For males, the use of the truncated Month-1 exposure variable resulted in three additional test results that fell below the $p<0.05$ criterion for statistical significance. All were in the direction of high exposure being related to better outcomes.

Exhibit B.1. Partial-partial Residual Plots: HepB

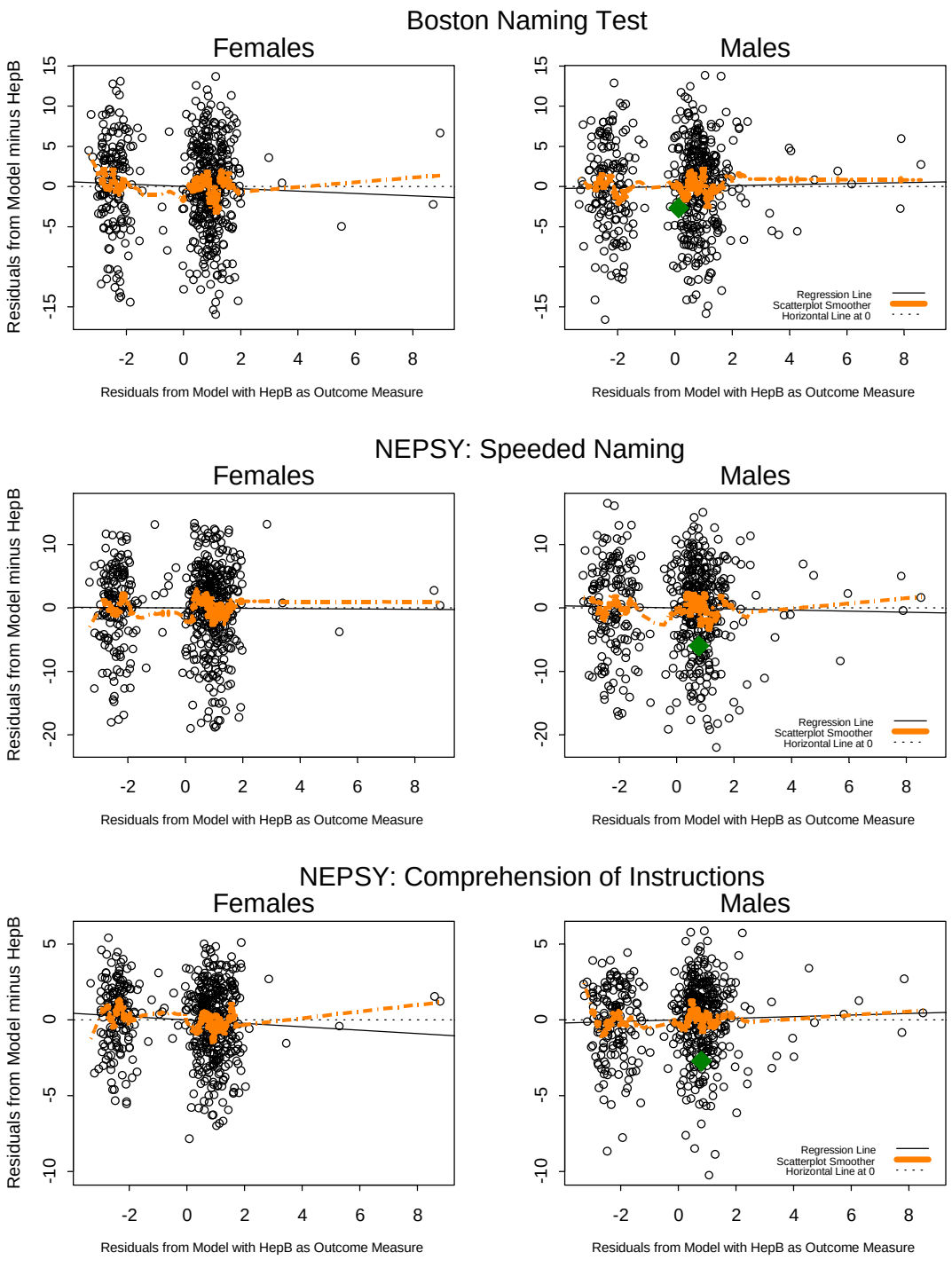


Exhibit B.2. Partial-partial Residual Plots: HepB

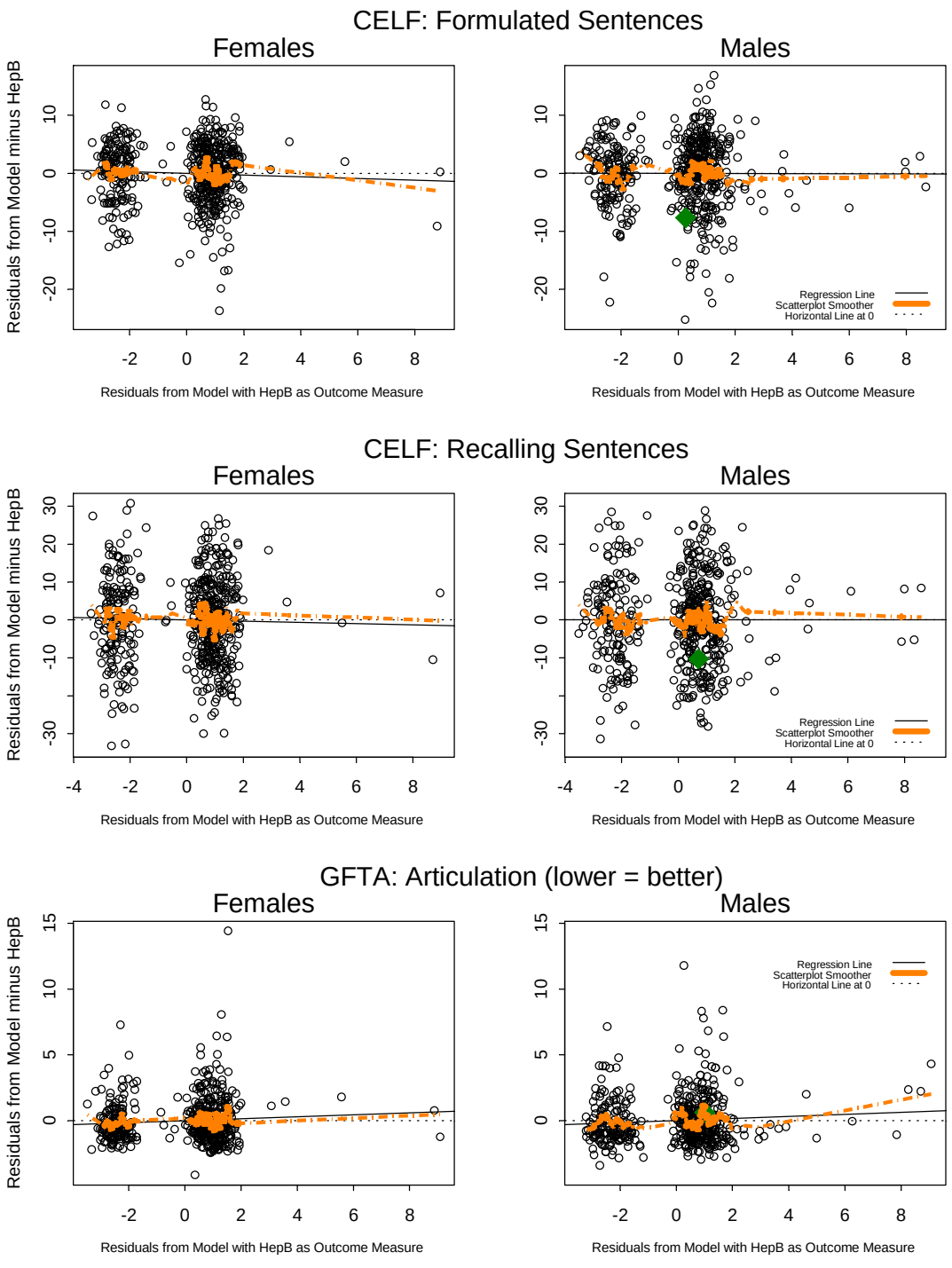
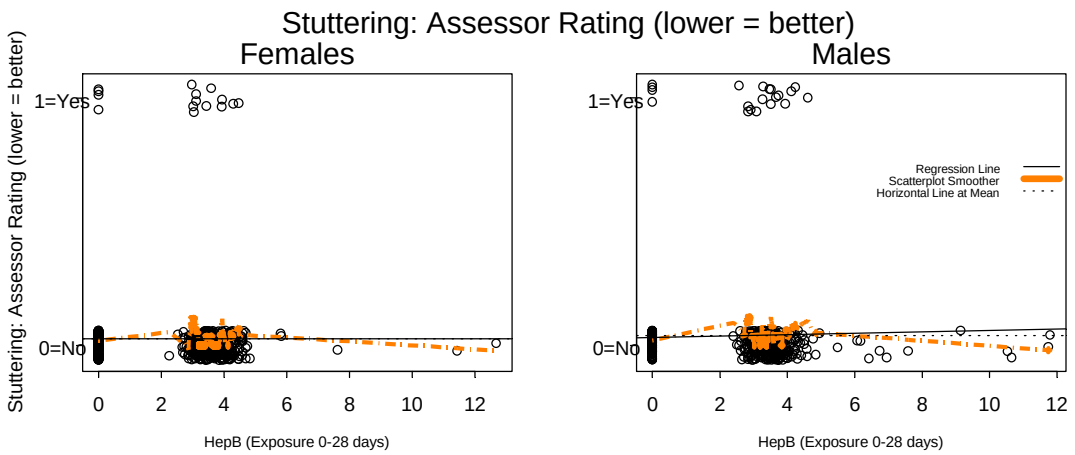
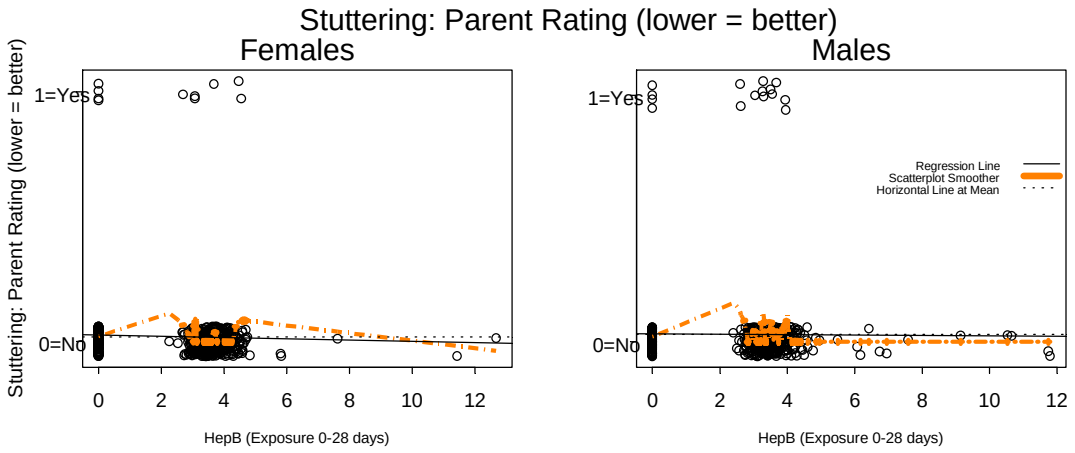


Exhibit B.3. Partial-partial Residual Plots: HepB





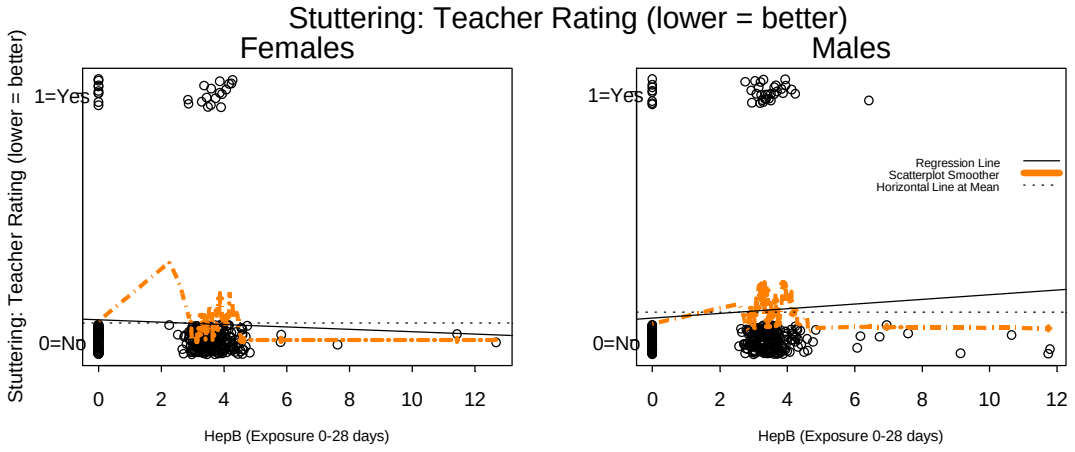


Exhibit B.4. Partial-partial Residual Plots: HepB

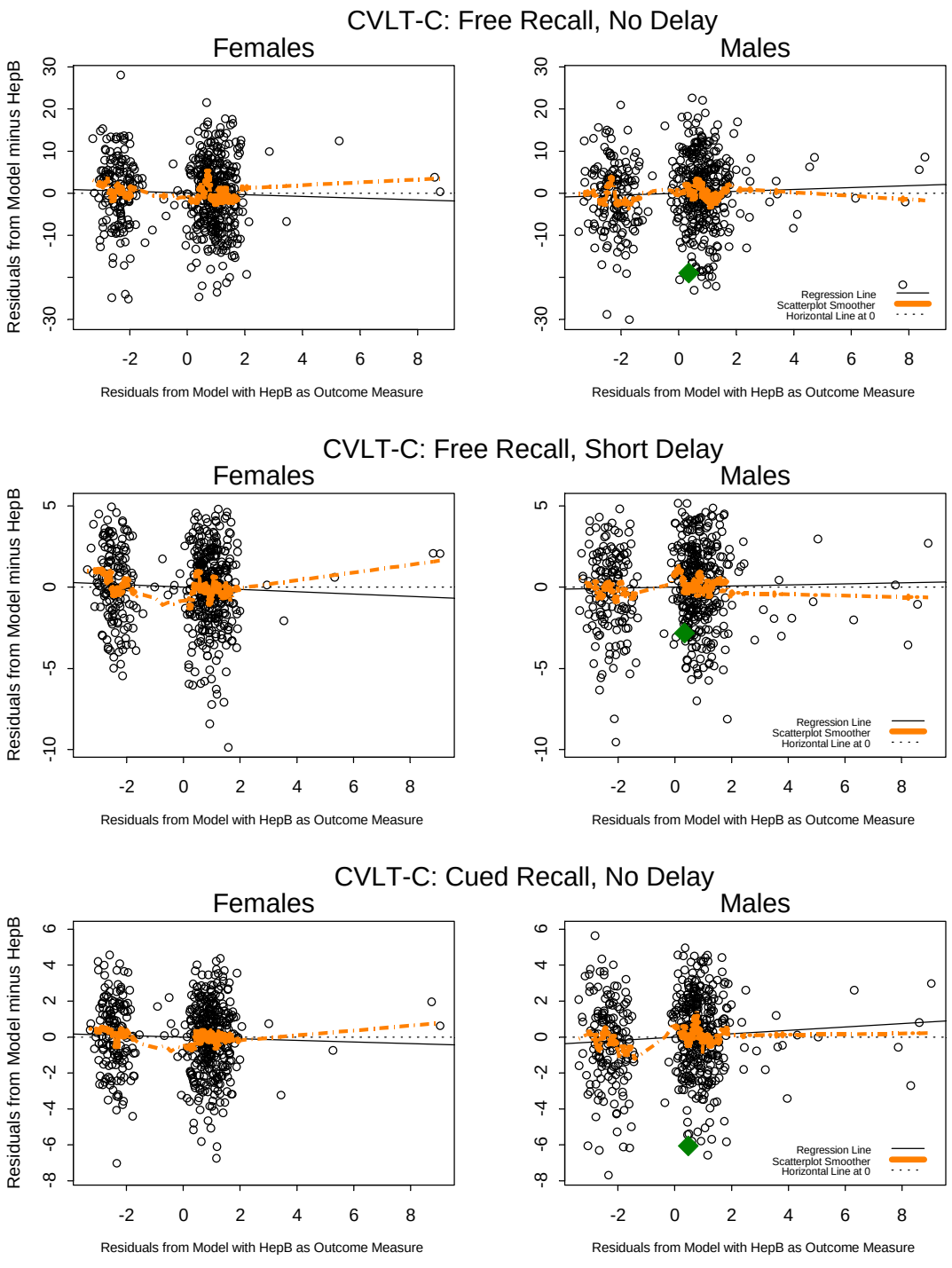
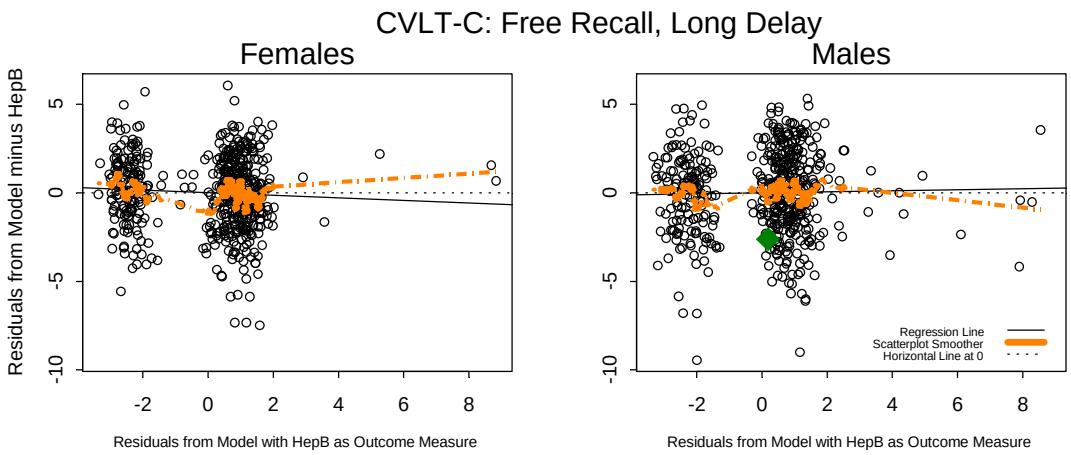
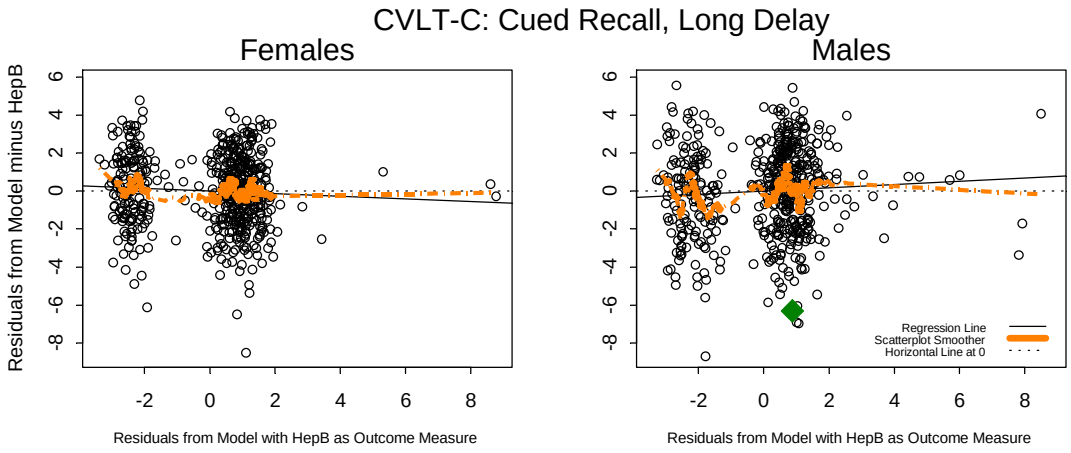


Exhibit B.5. Partial-partial Residual Plots: HepB





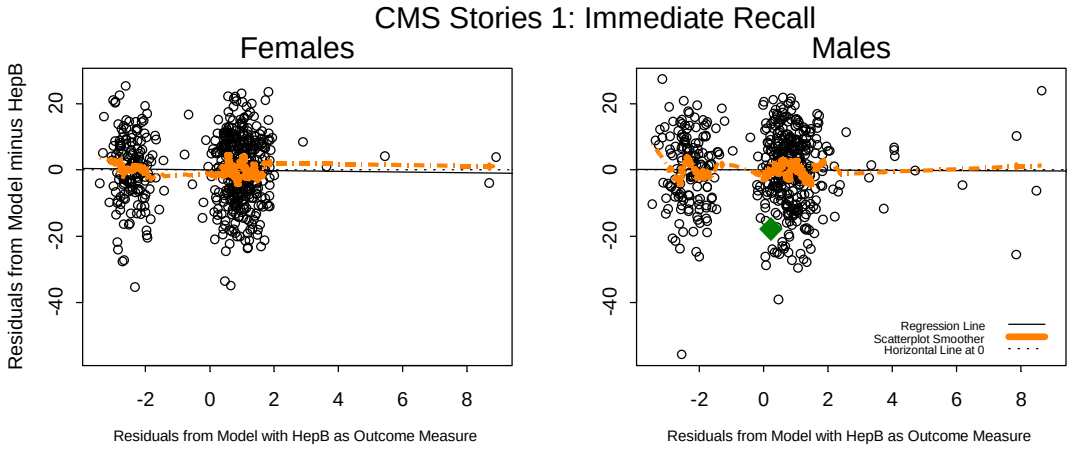


Exhibit B.6. Partial-partial Residual Plots: HepB

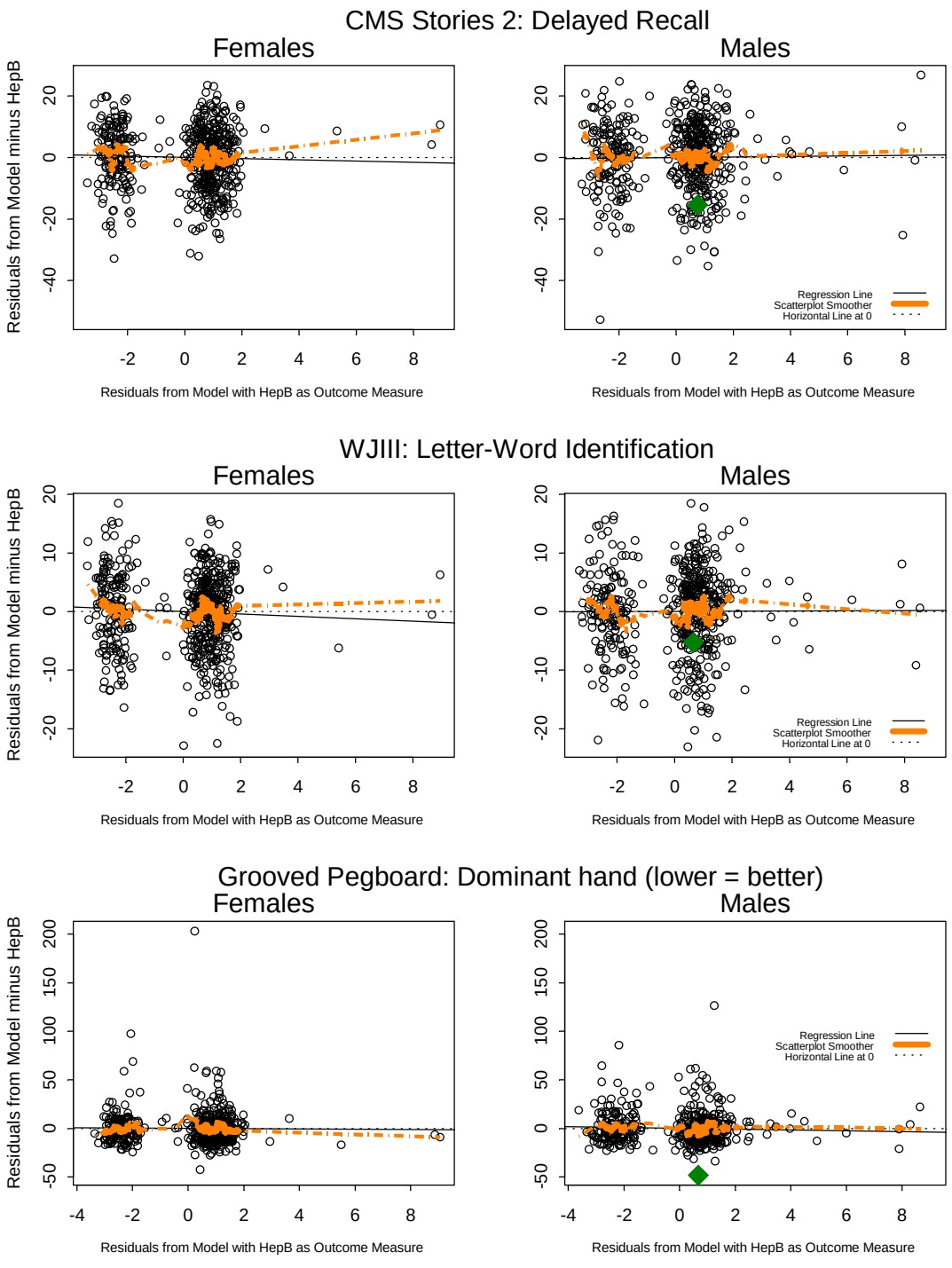


Exhibit B.7. Partial-partial Residual Plots: HepB

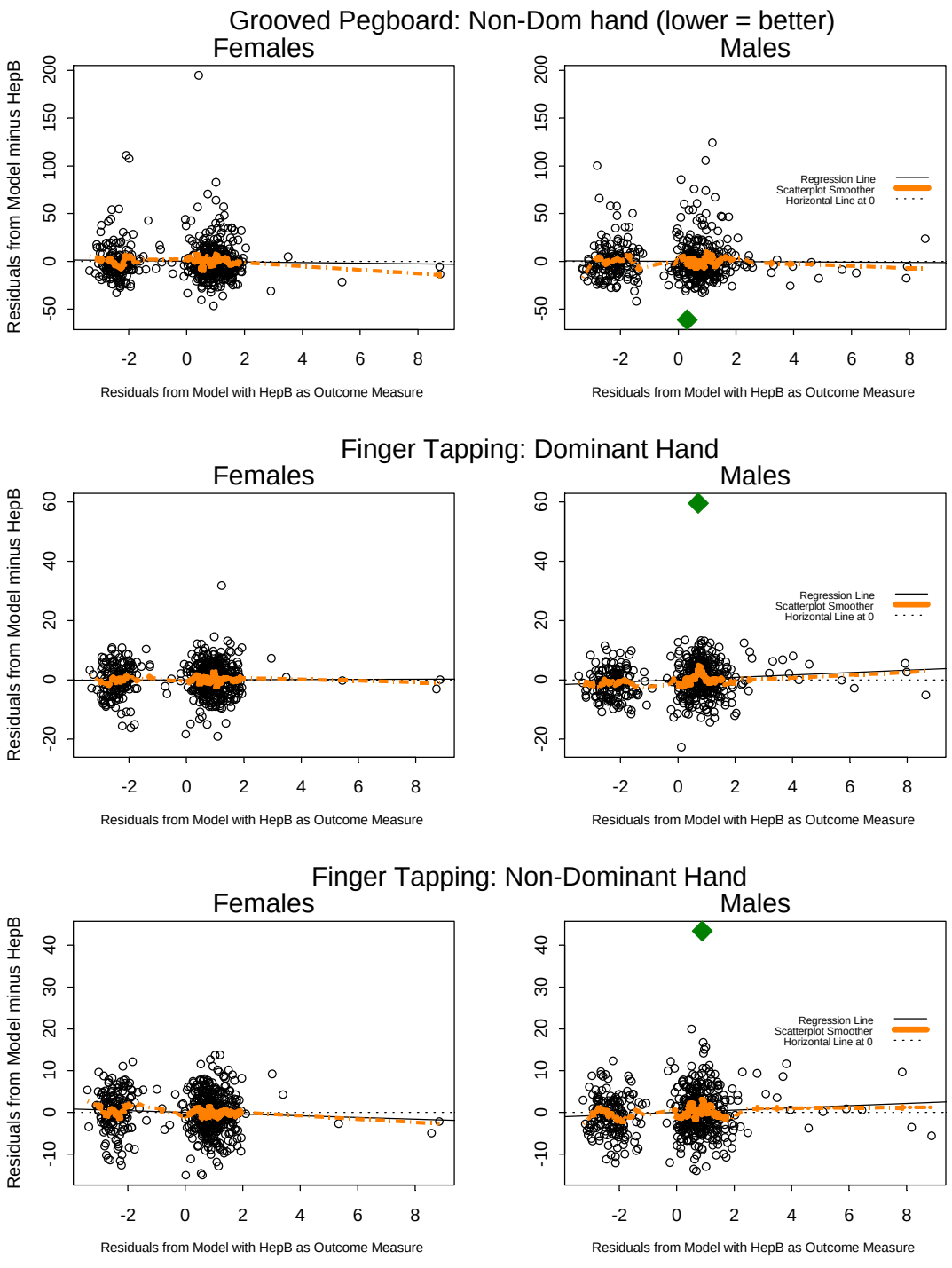


Exhibit B.8. Partial-partial Residual Plots: HepB

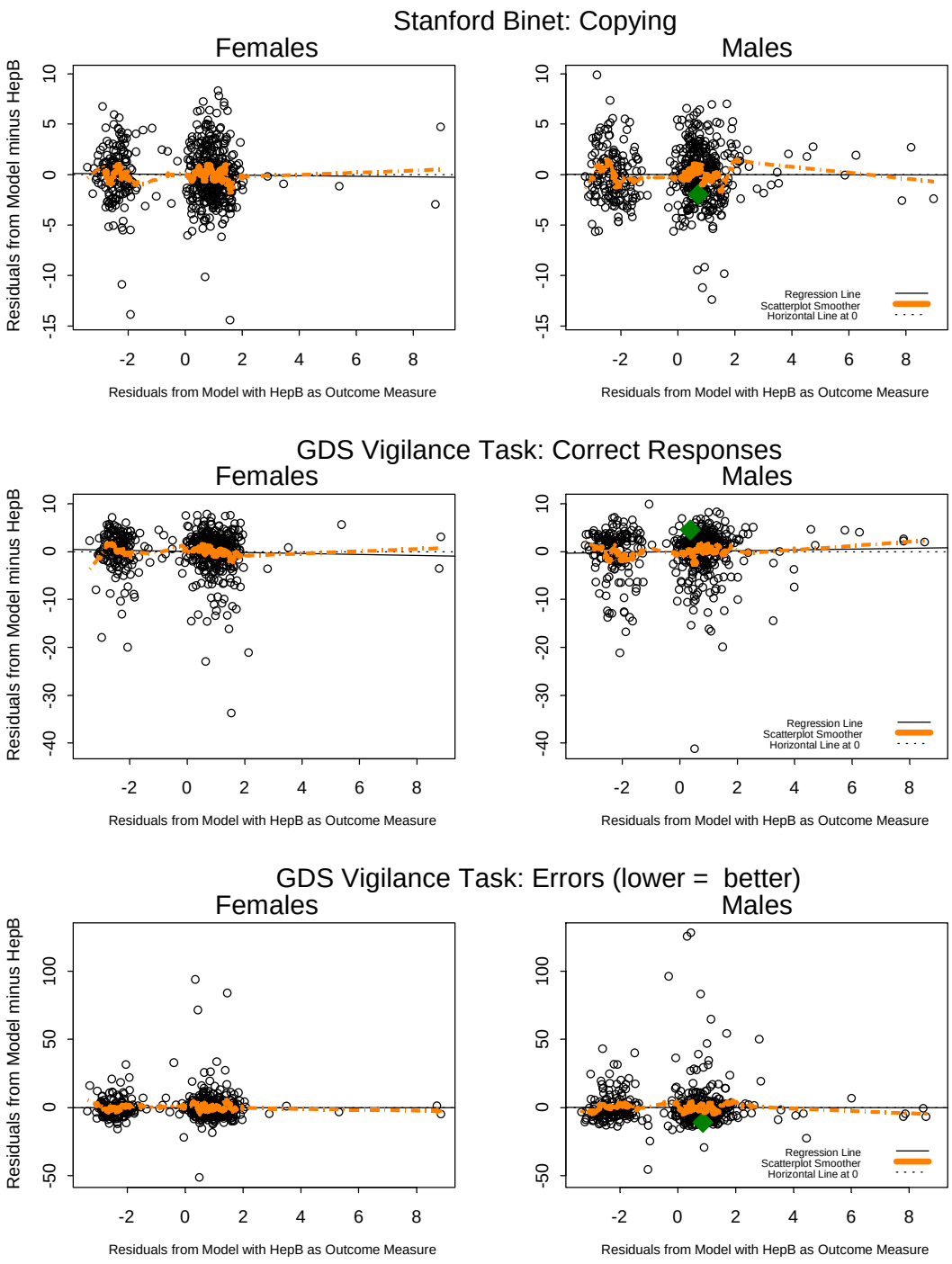
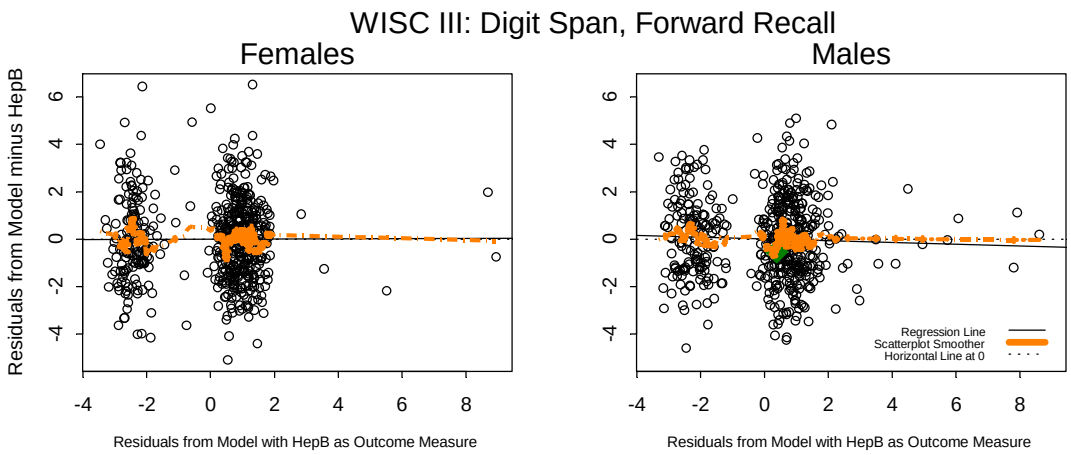
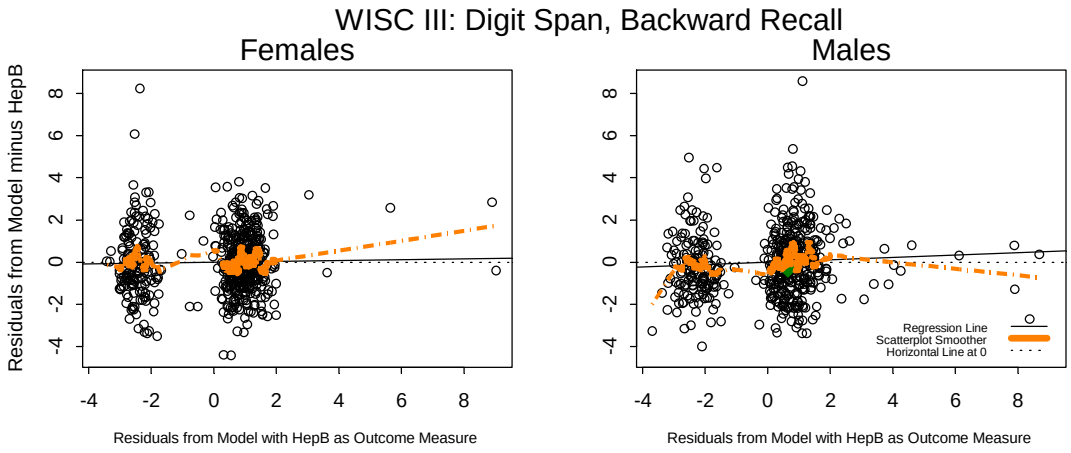


Exhibit B.9. Partial-partial Residual Plots: HepB





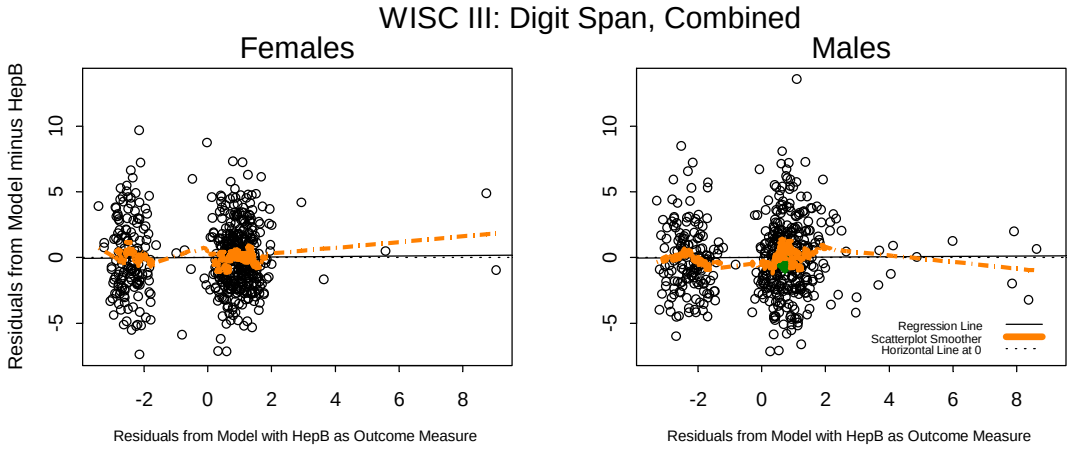
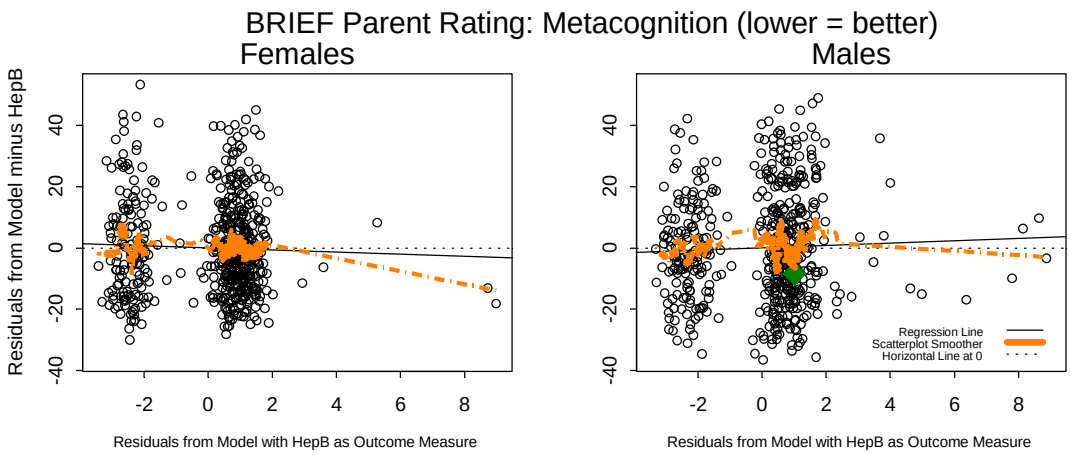
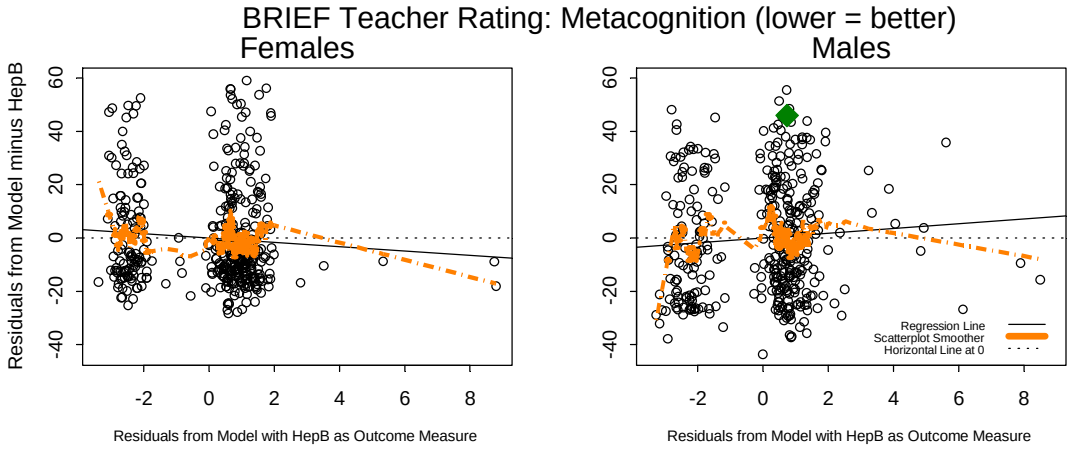


Exhibit B.10. Partial-partial Residual Plots: HepB





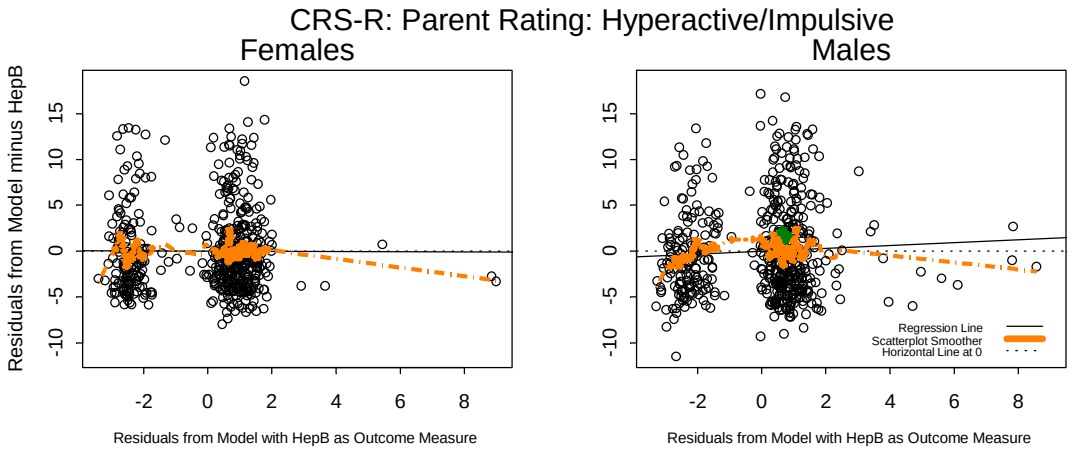
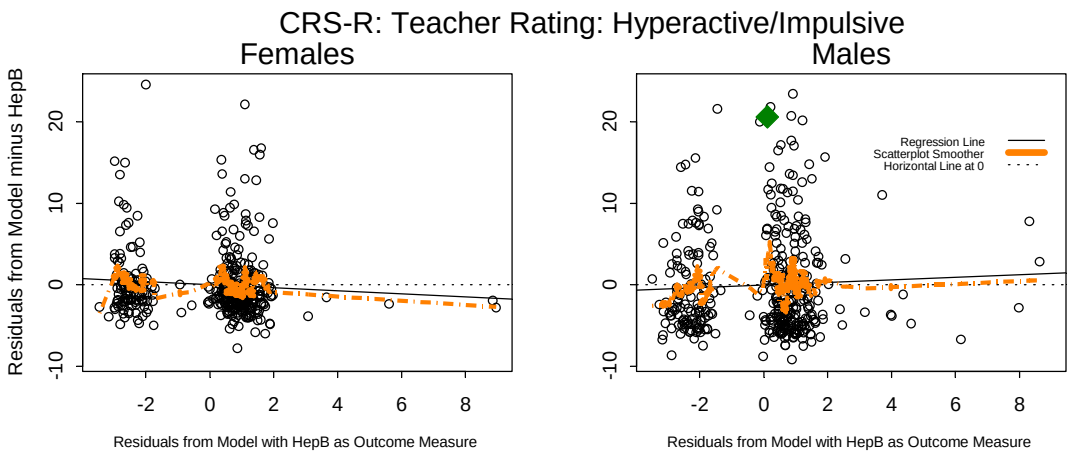
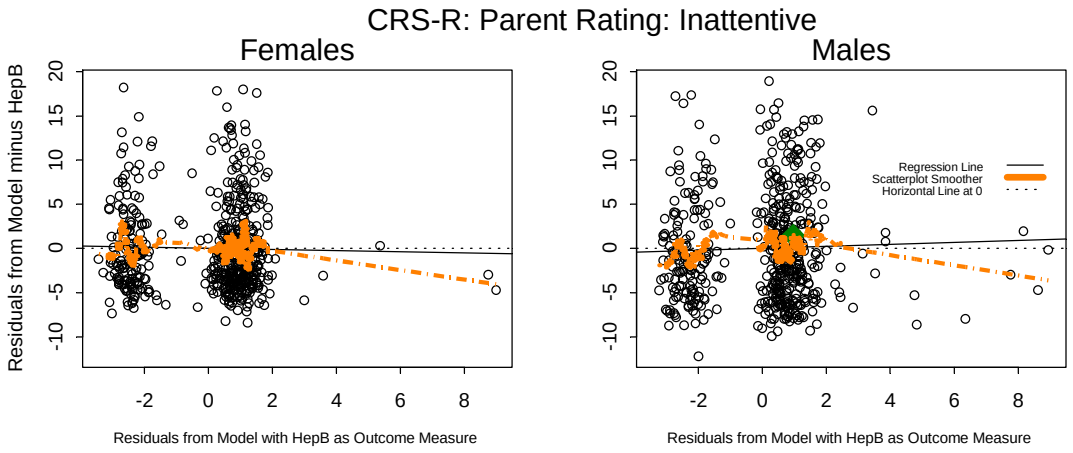


Exhibit B.11. Partial-partial Residual Plots: HepB





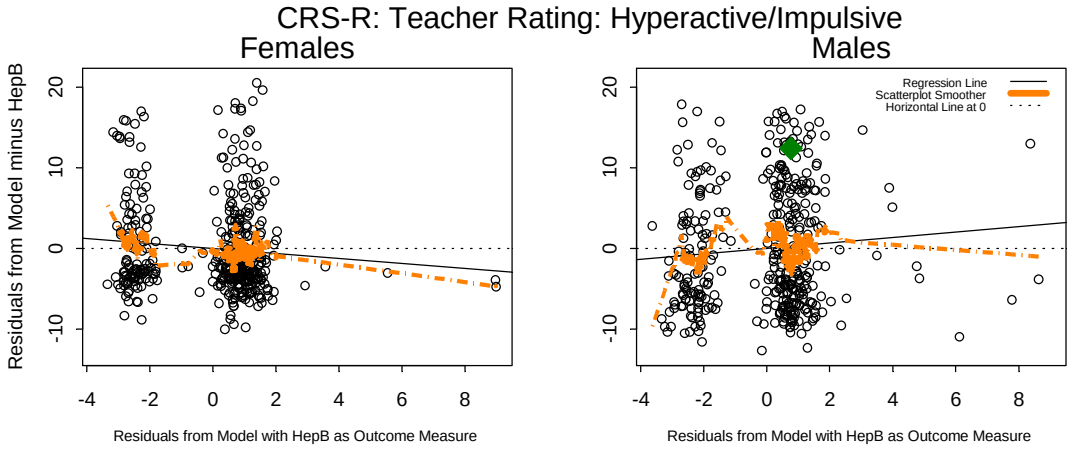


Exhibit B.12. Partial-partial Residual Plots: HepB

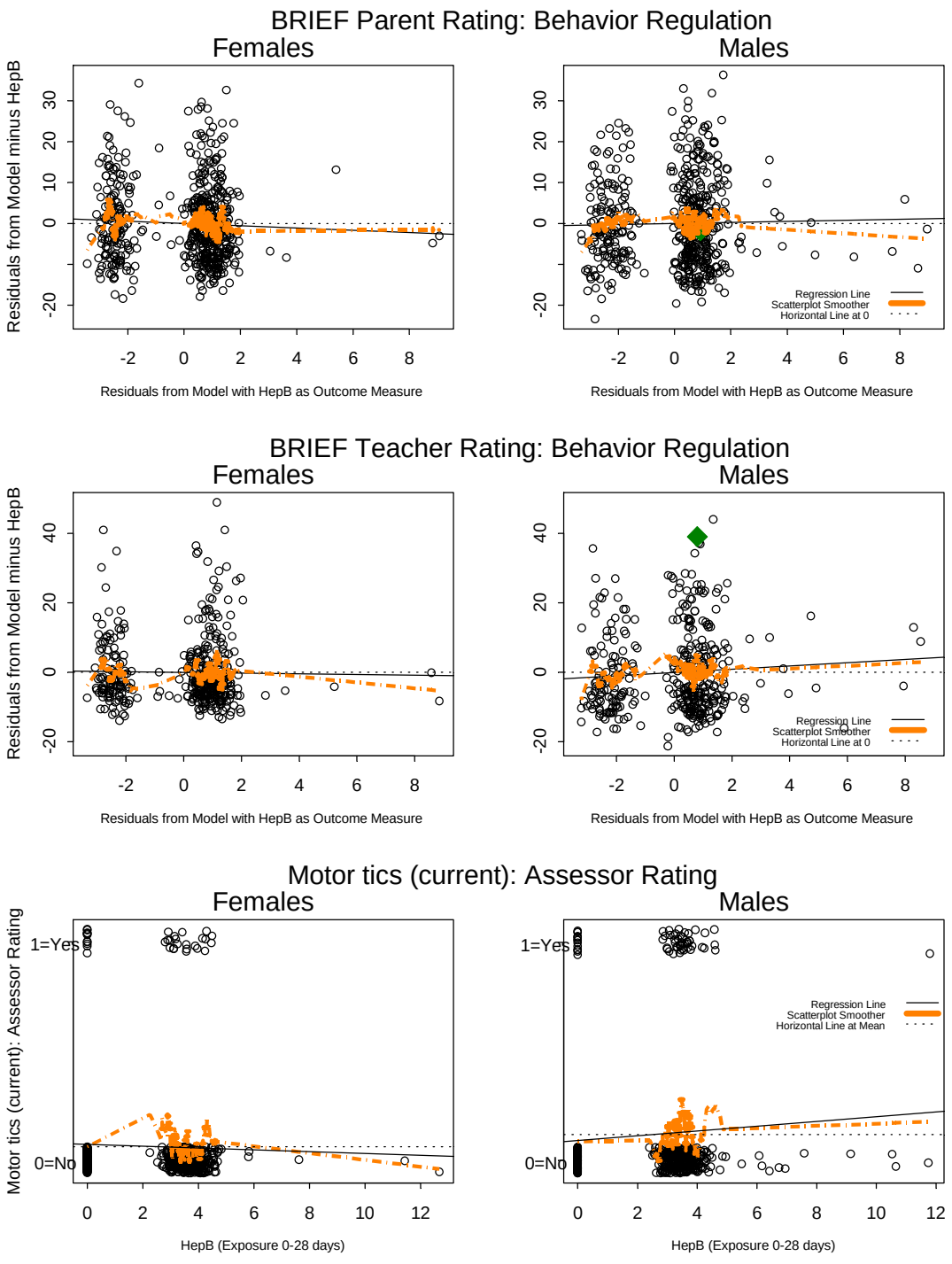


Exhibit B.13. Partial-partial Residual Plots: HepB

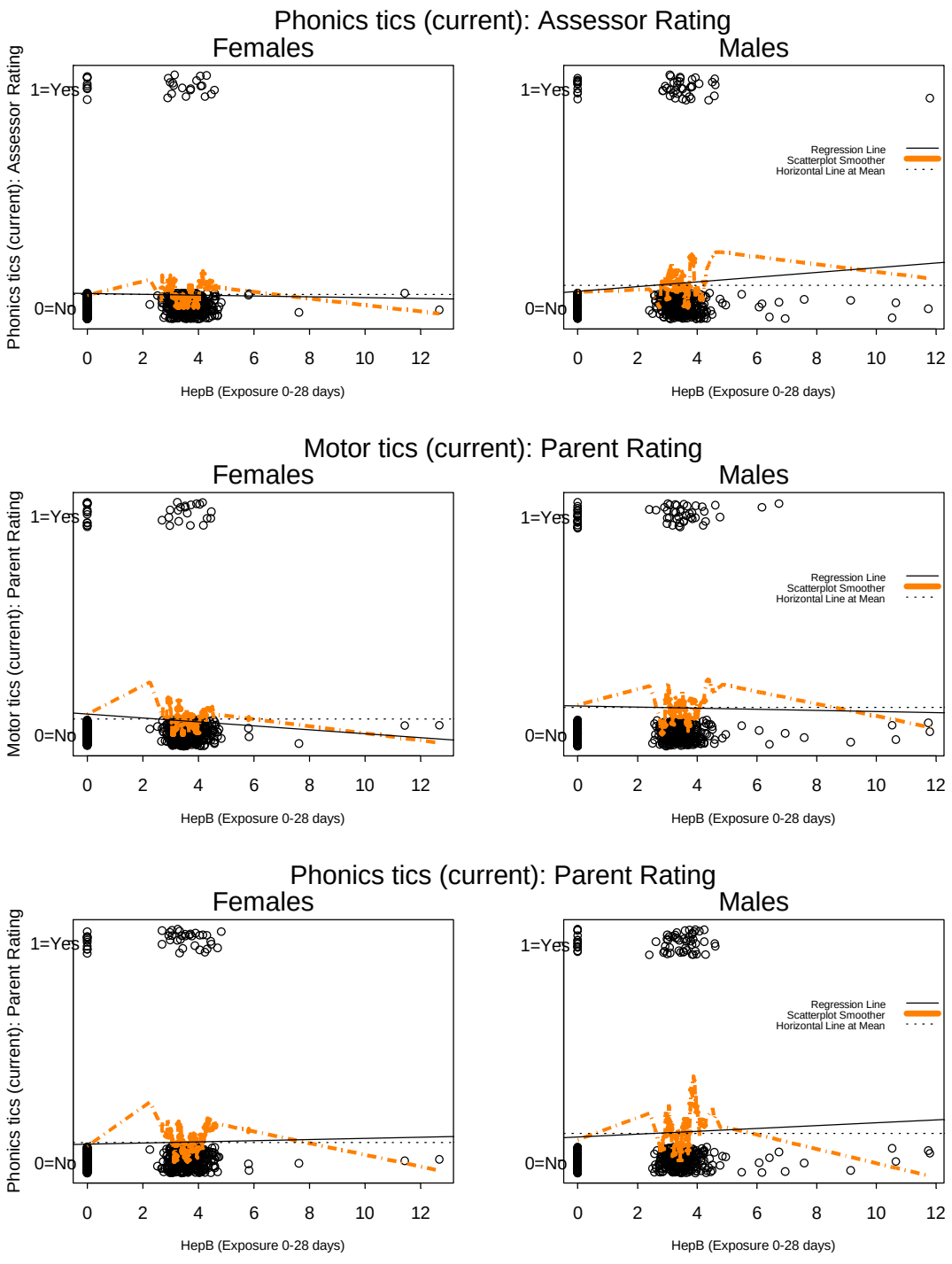


Exhibit B.14. Partial-partial Residual Plots: HepB

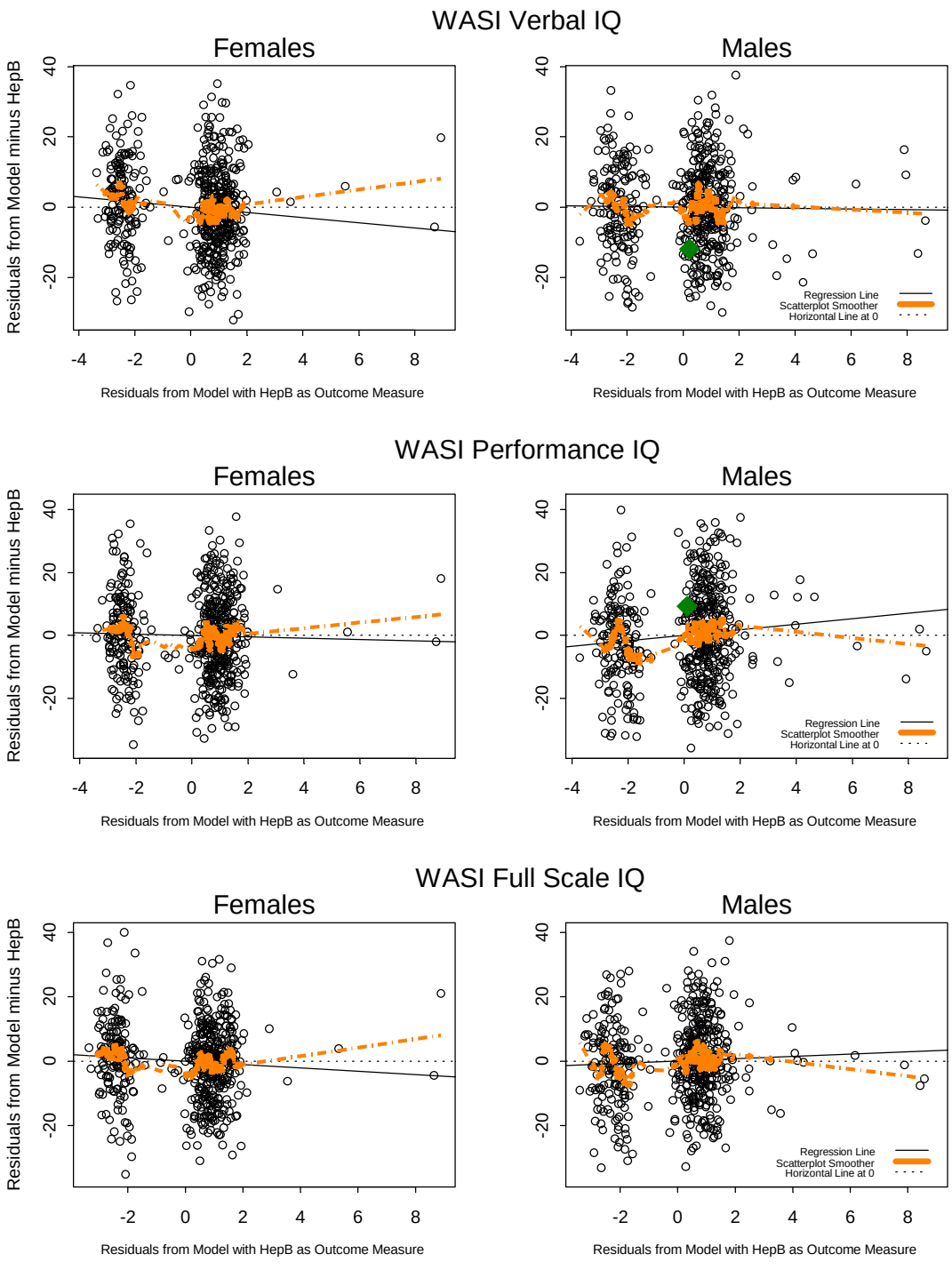
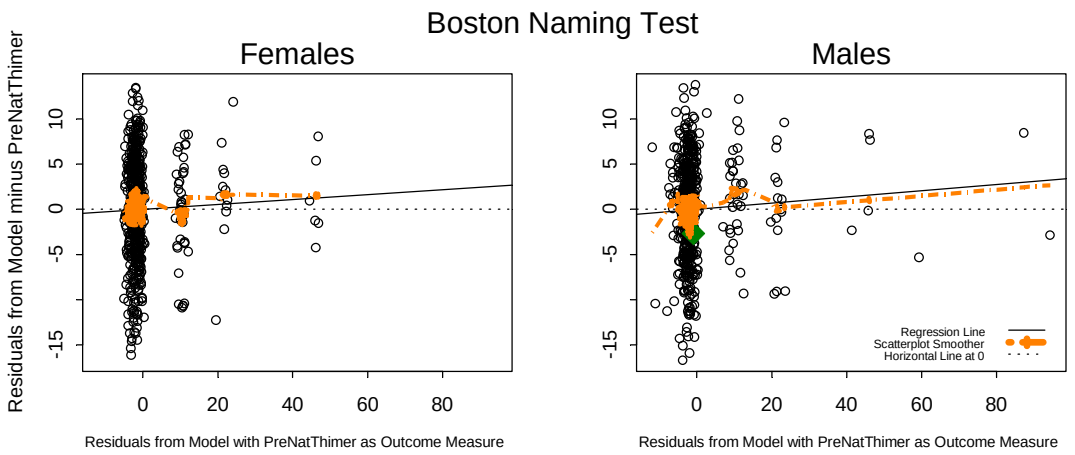
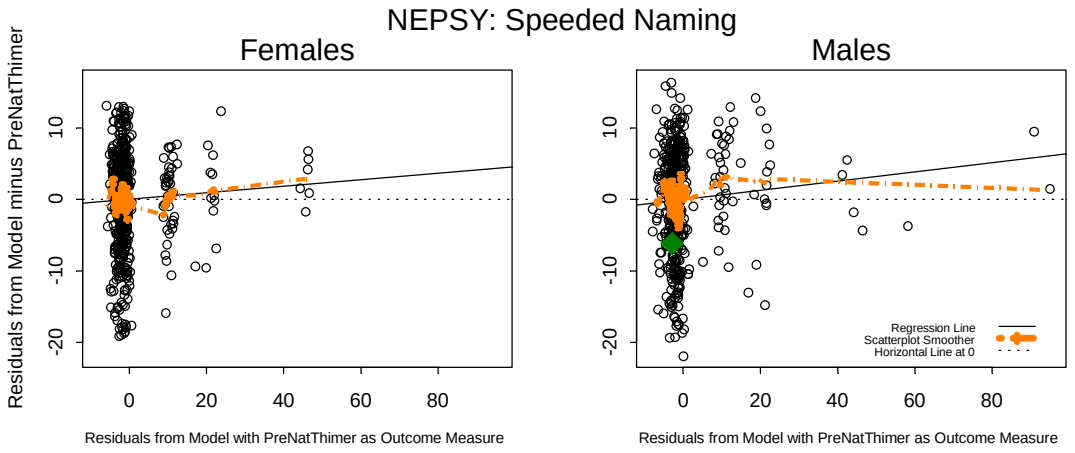


Exhibit B.15. Partial-partial Residual Plots: PreNatThimer





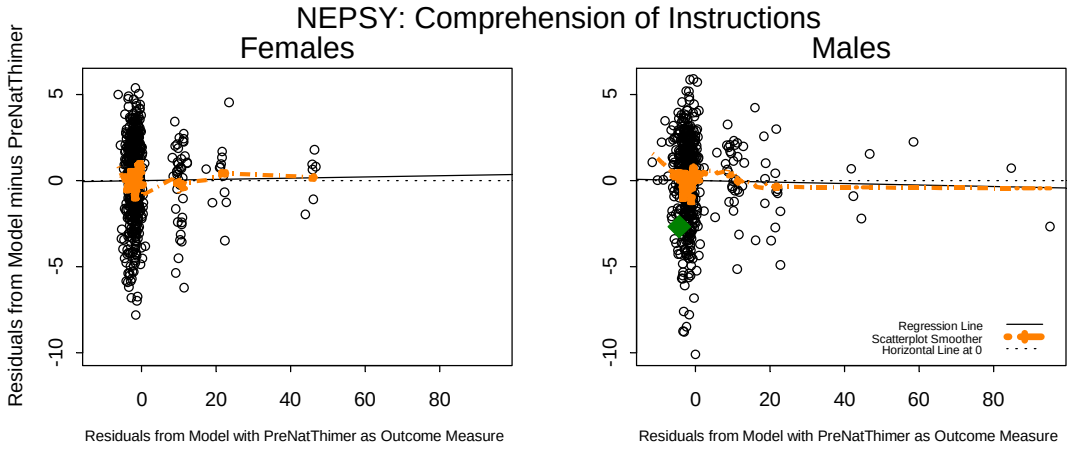
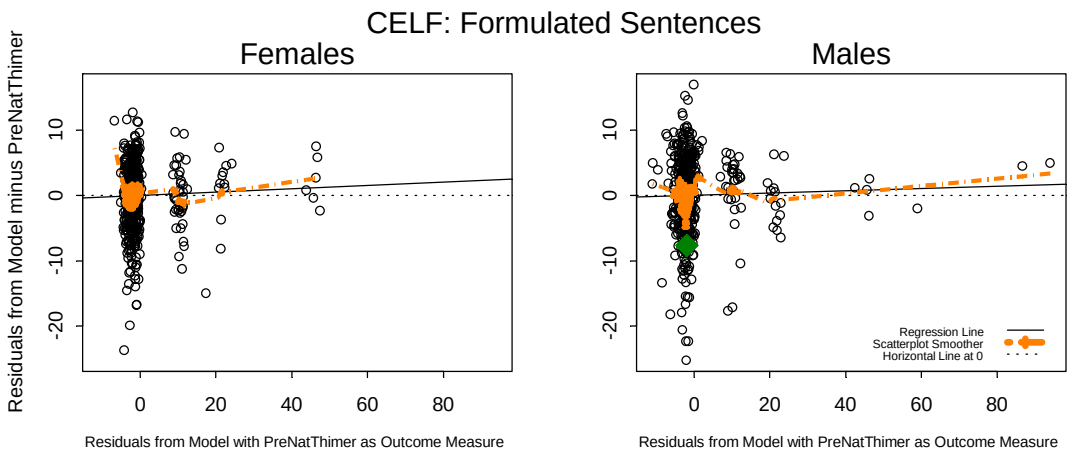
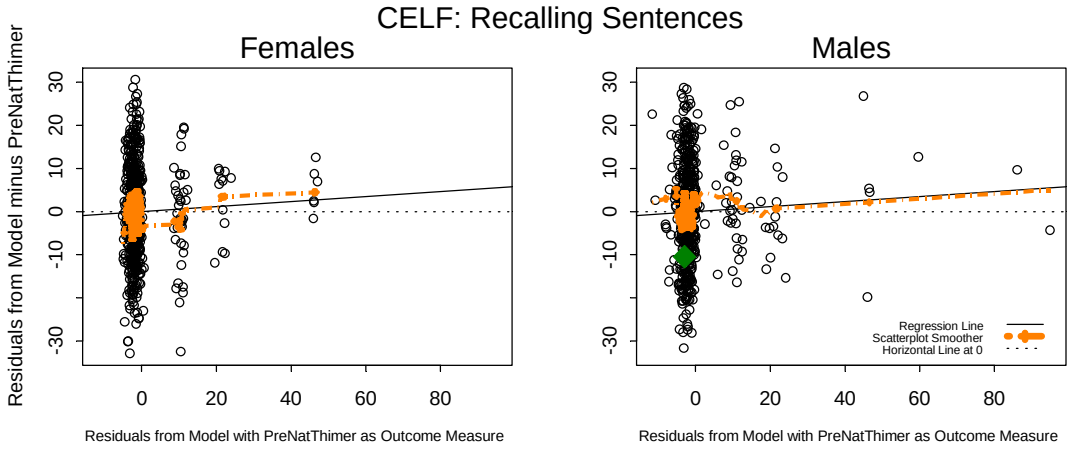


Exhibit B.16. Partial-partial Residual Plots: PreNatThimer





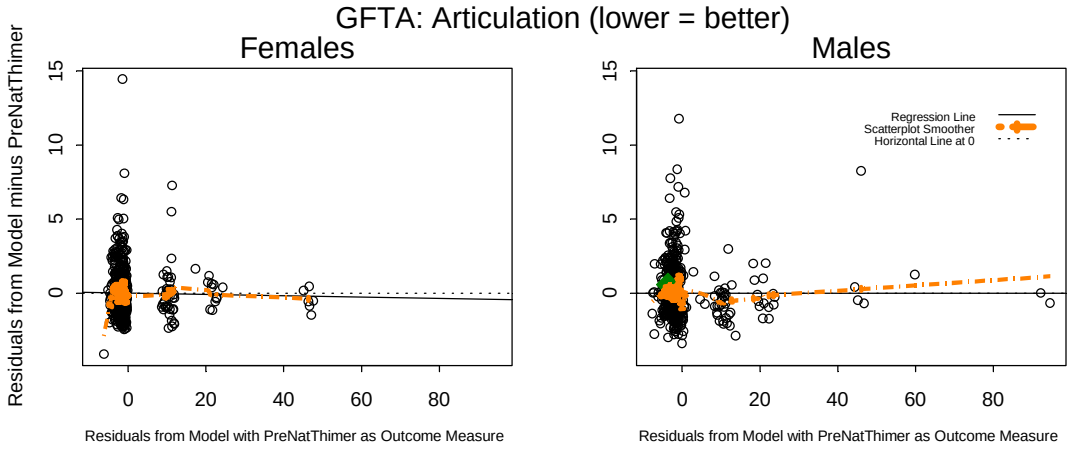


Exhibit B.17. Partial-partial Residual Plots: PreNatThimer

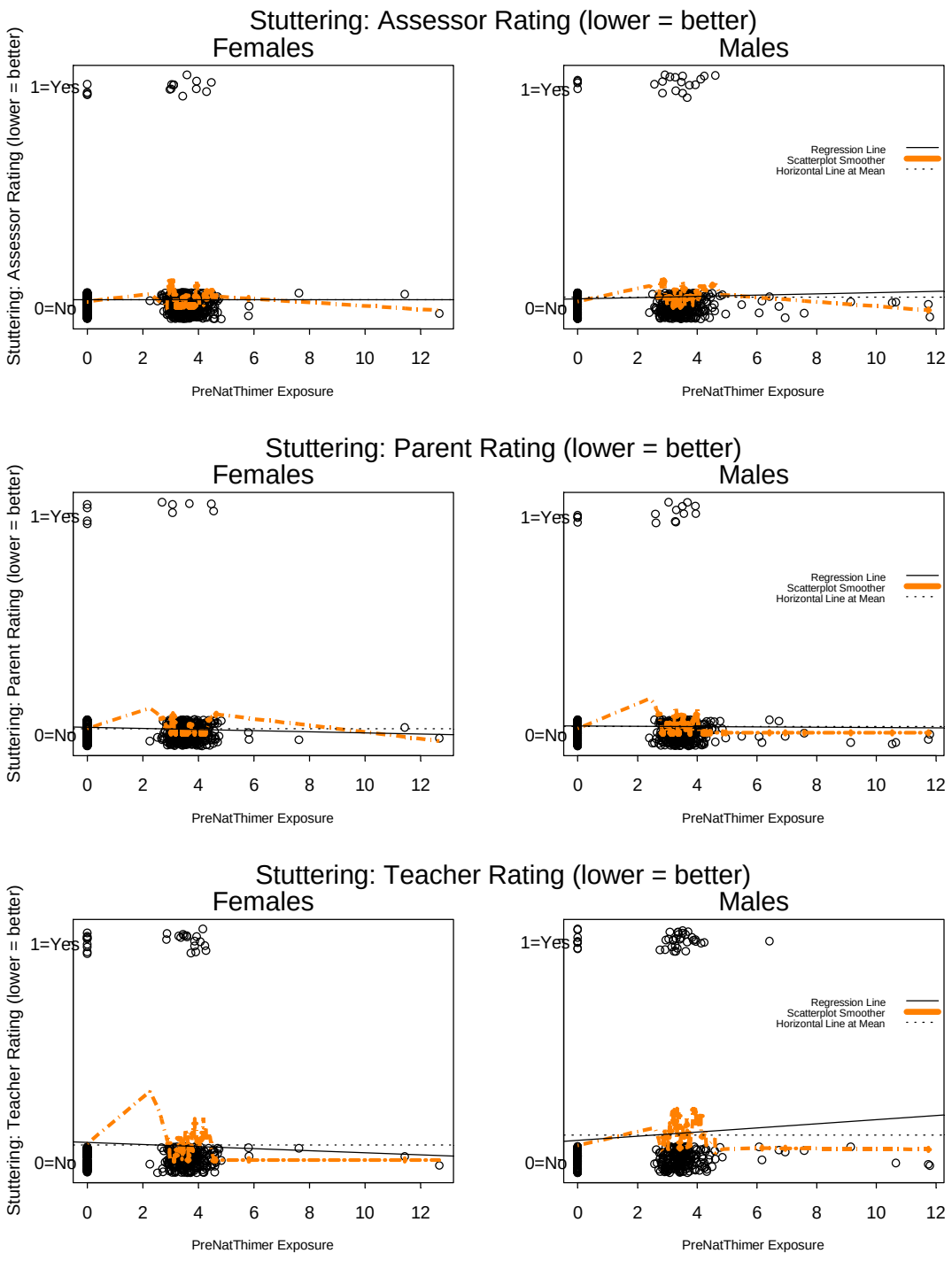


Exhibit B.18. Partial-partial Residual Plots: PreNatThimer

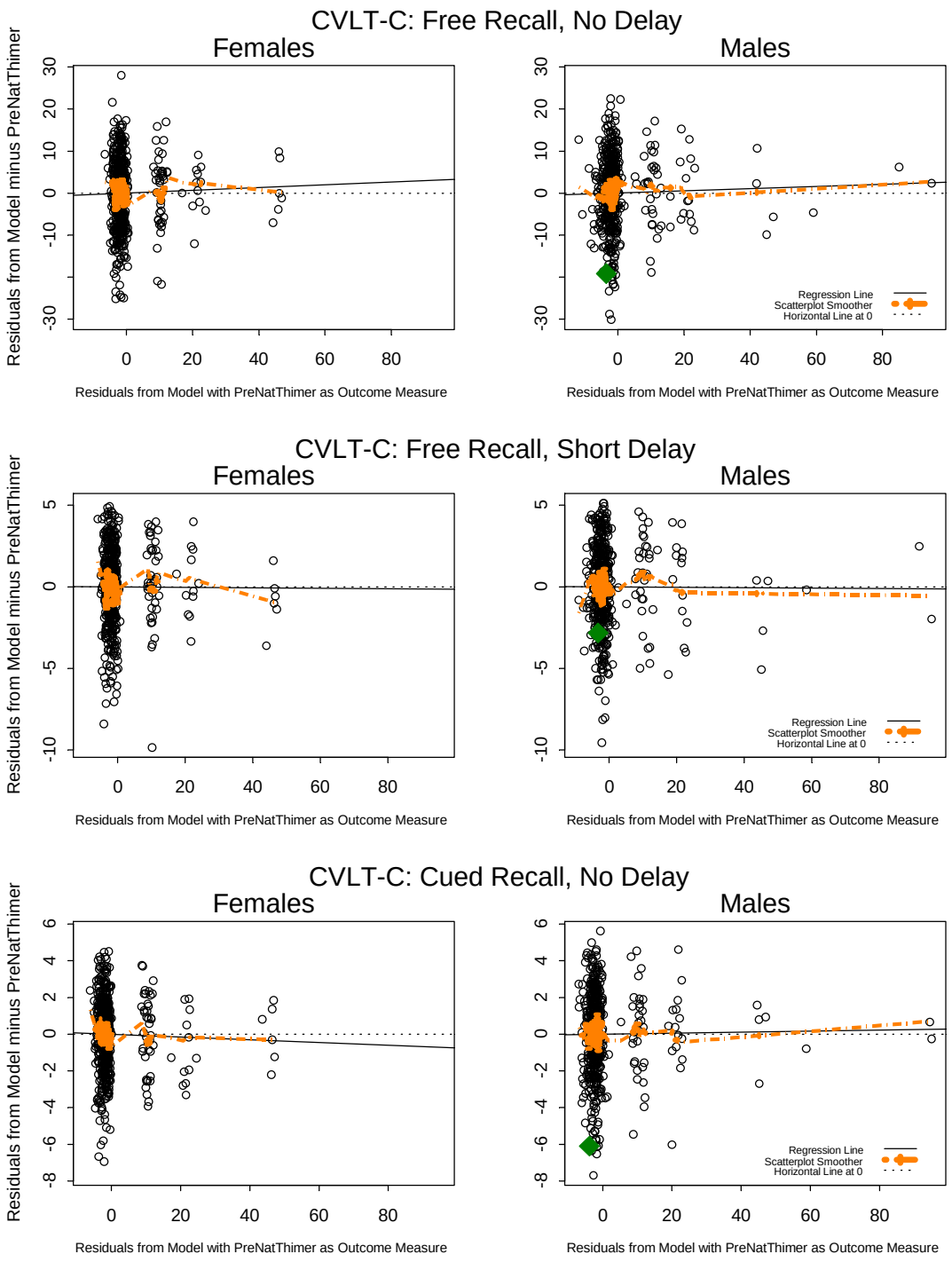
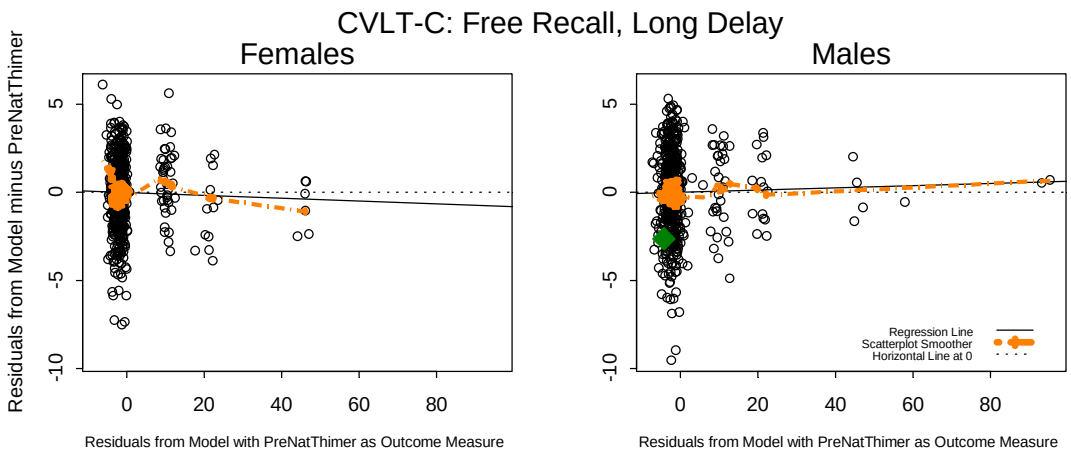
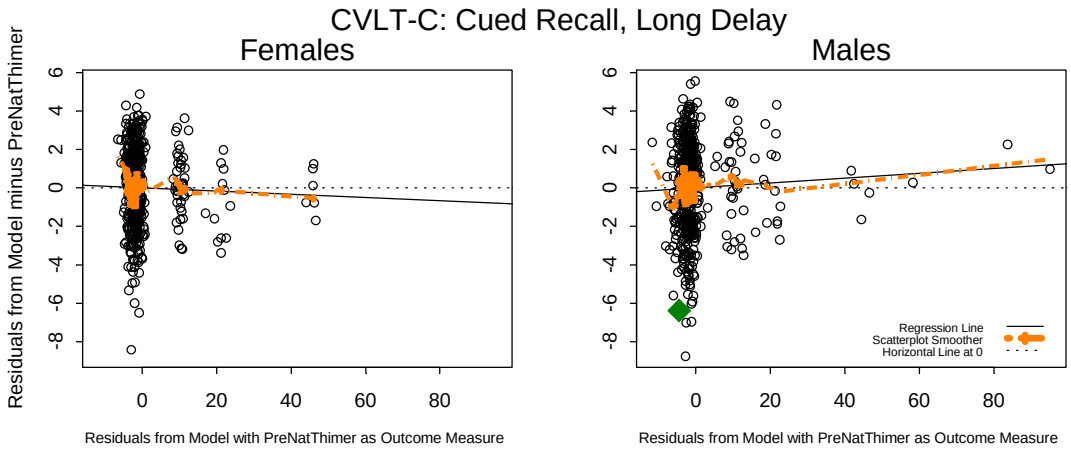


Exhibit B.19. Partial-partial Residual Plots: PreNatThimer





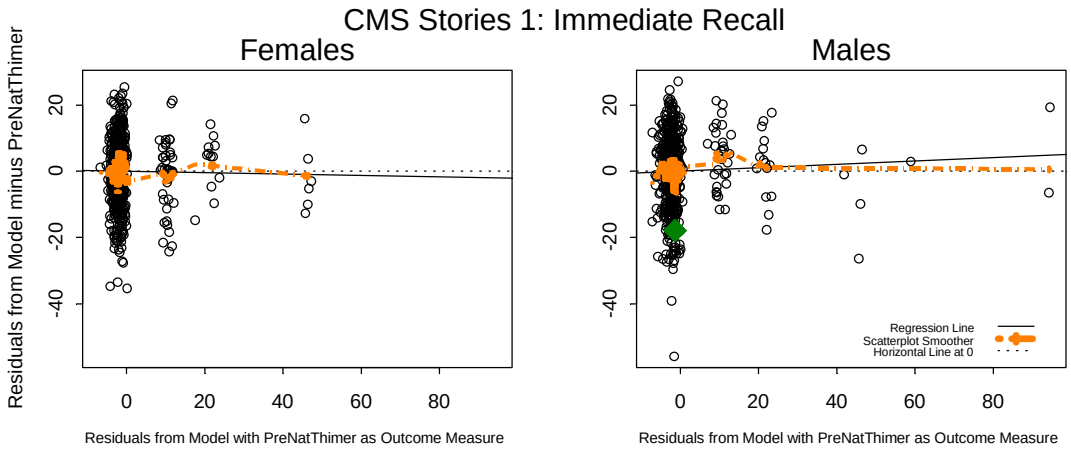


Exhibit B.20. Partial-partial Residual Plots: PreNatThimer

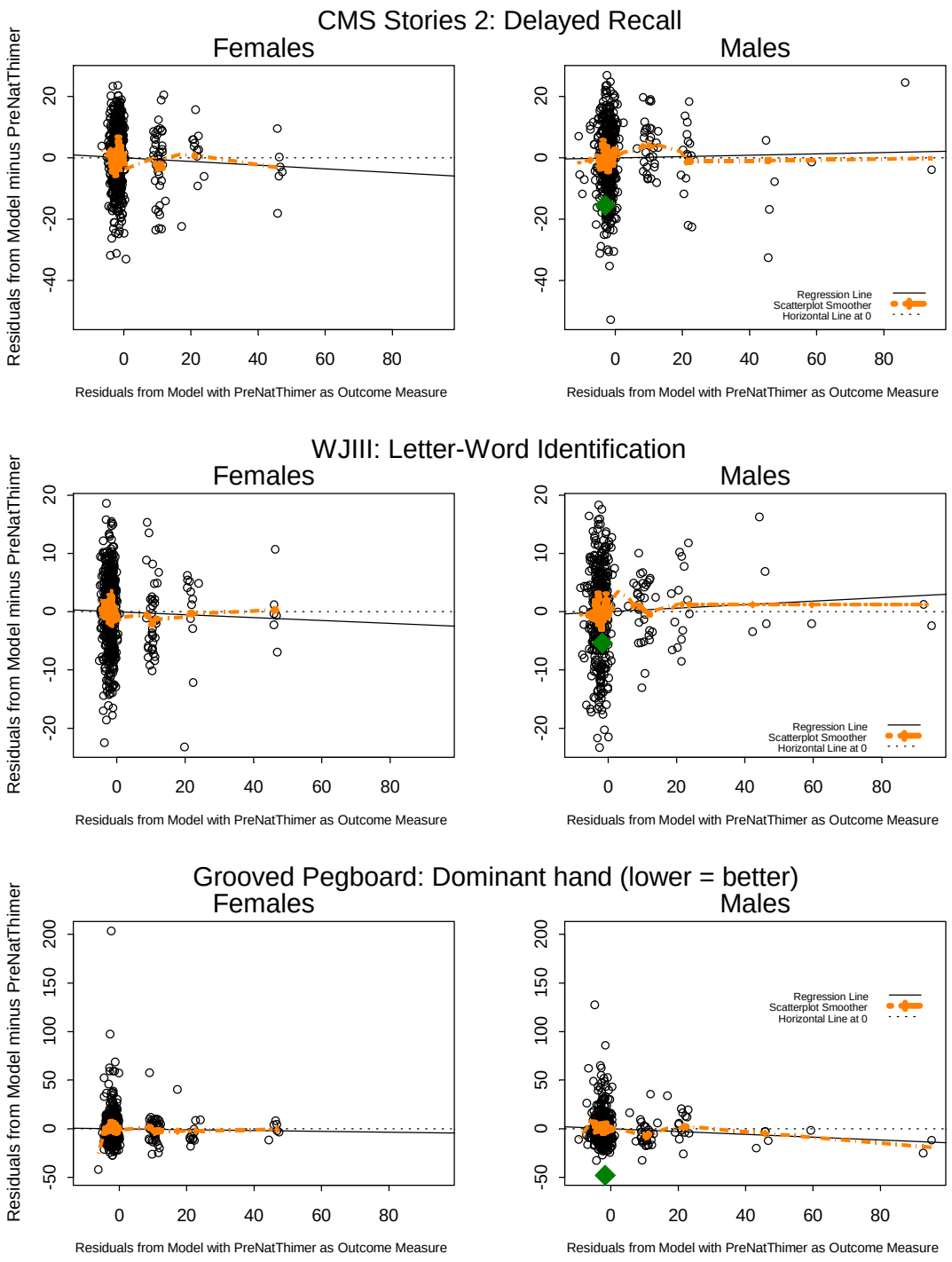


Exhibit B.21. Partial-partial Residual Plots: PreNatThimer

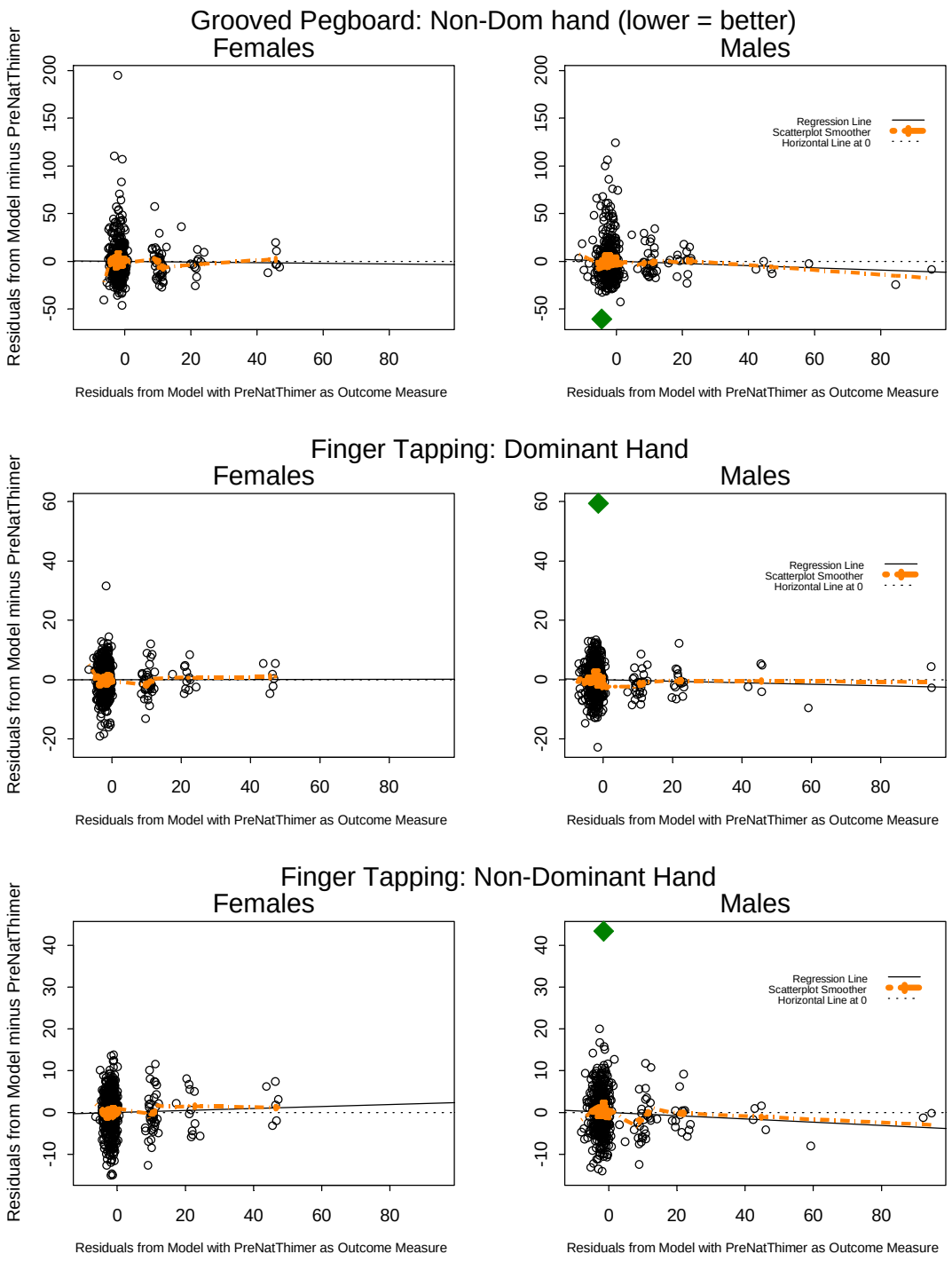


Exhibit B.22. Partial-partial Residual Plots: PreNatThimer

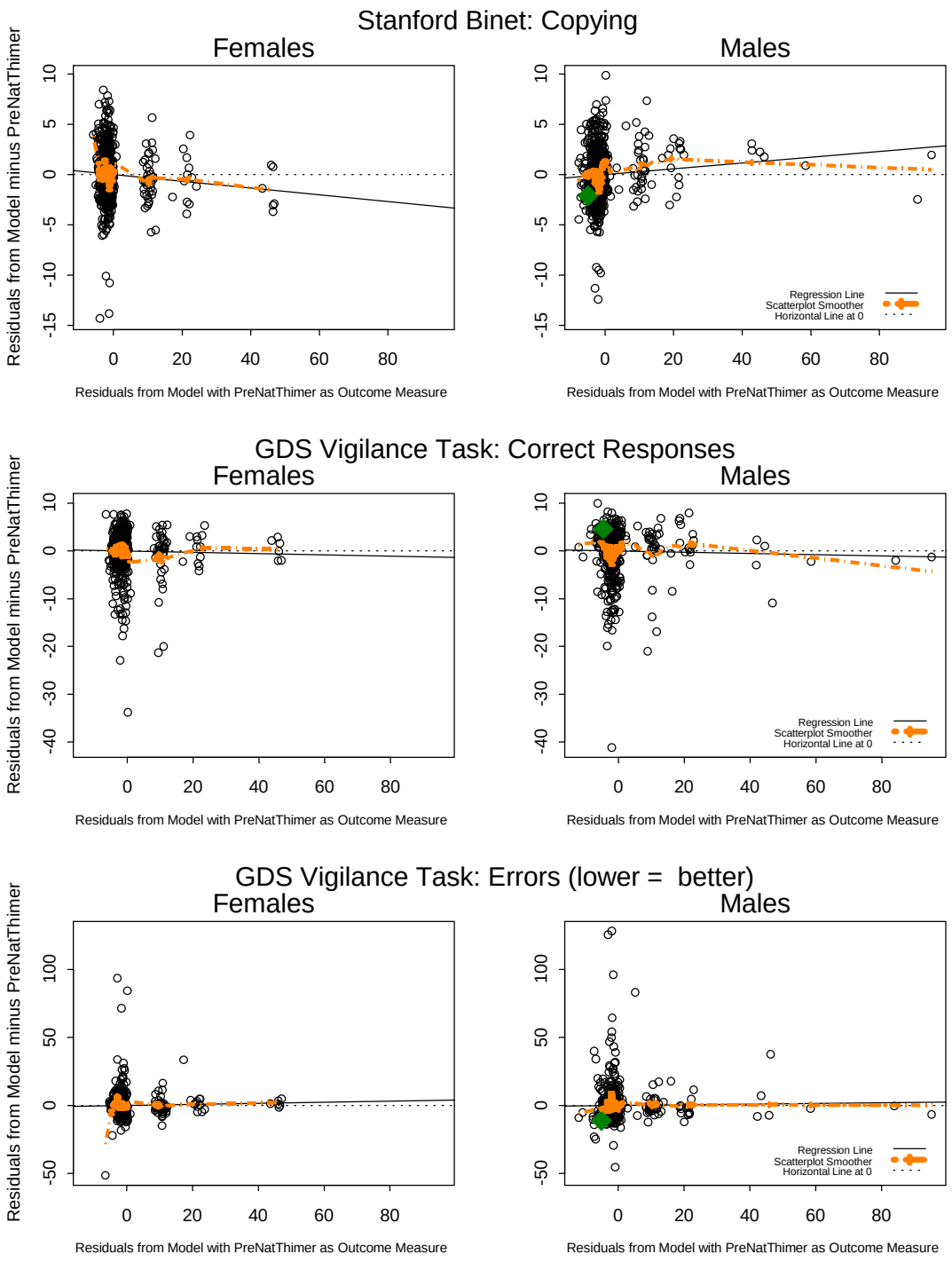
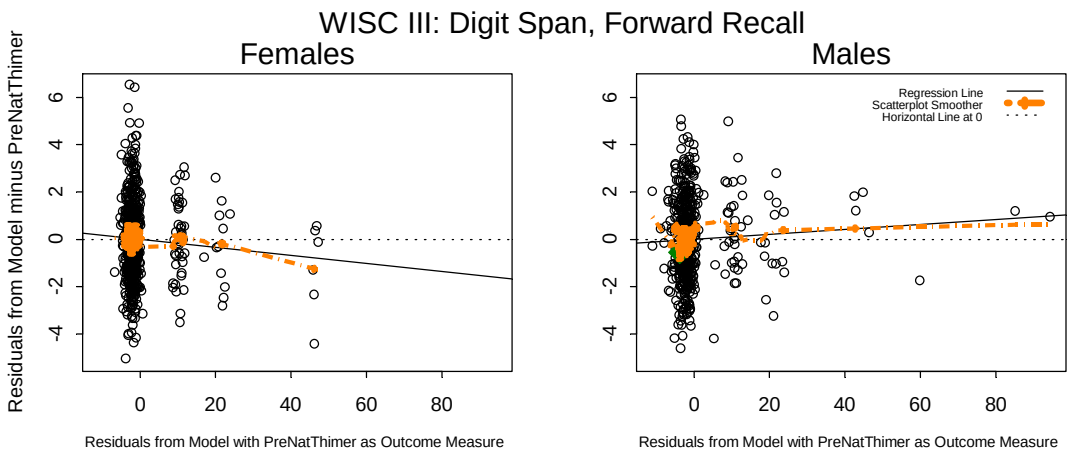
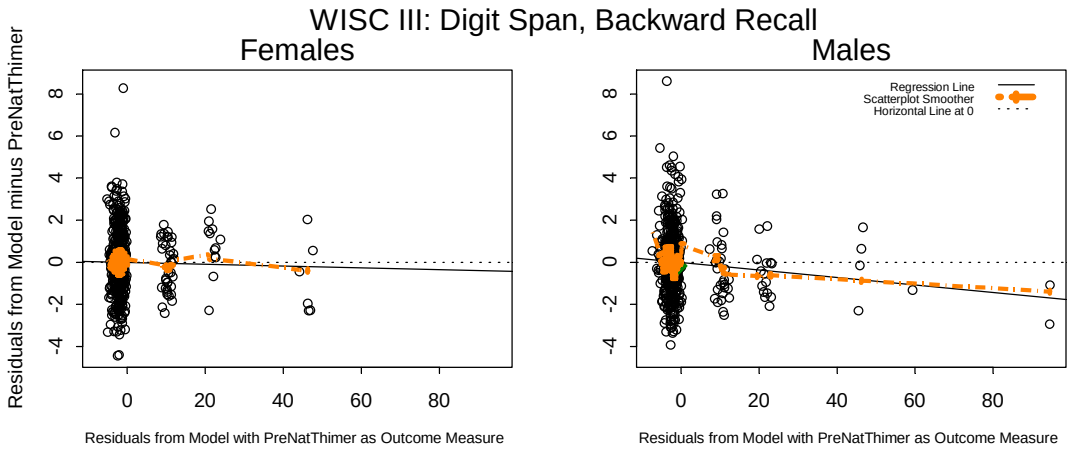


Exhibit B.23. Partial-partial Residual Plots: PreNatThimer





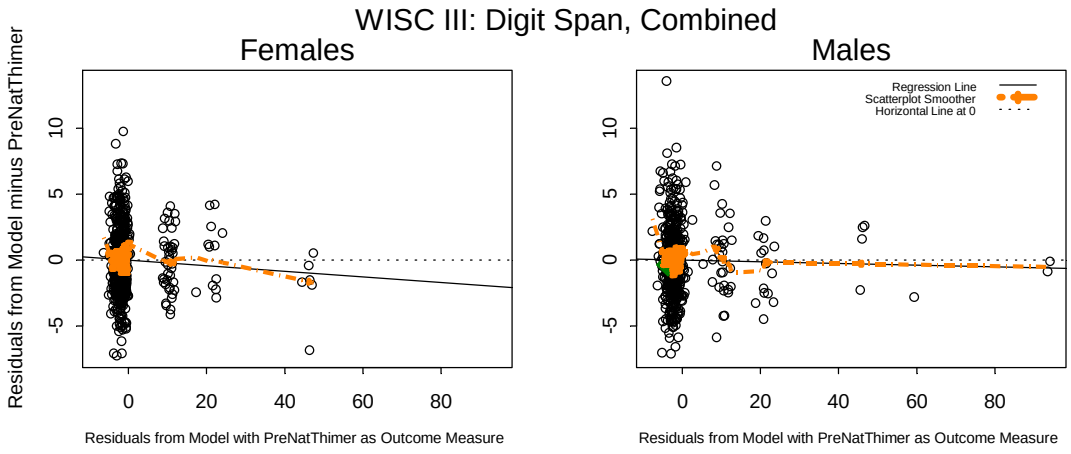
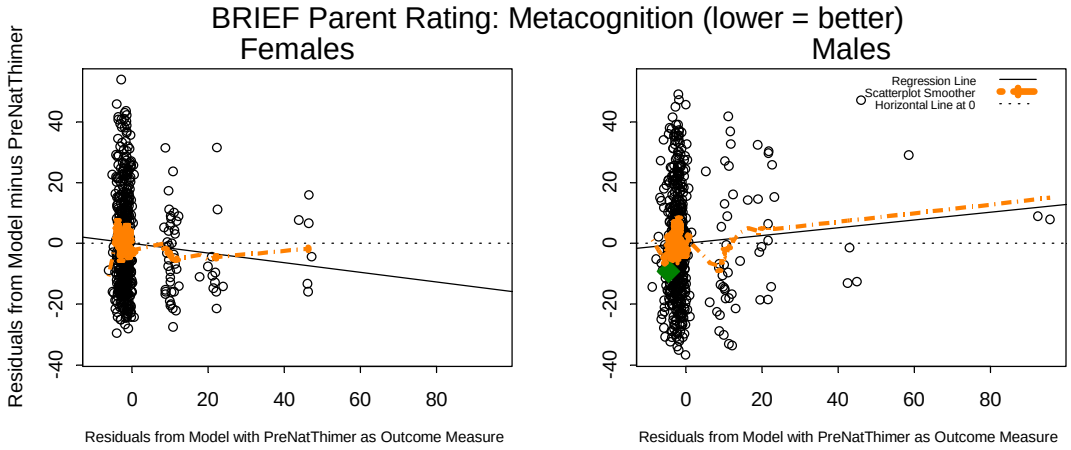
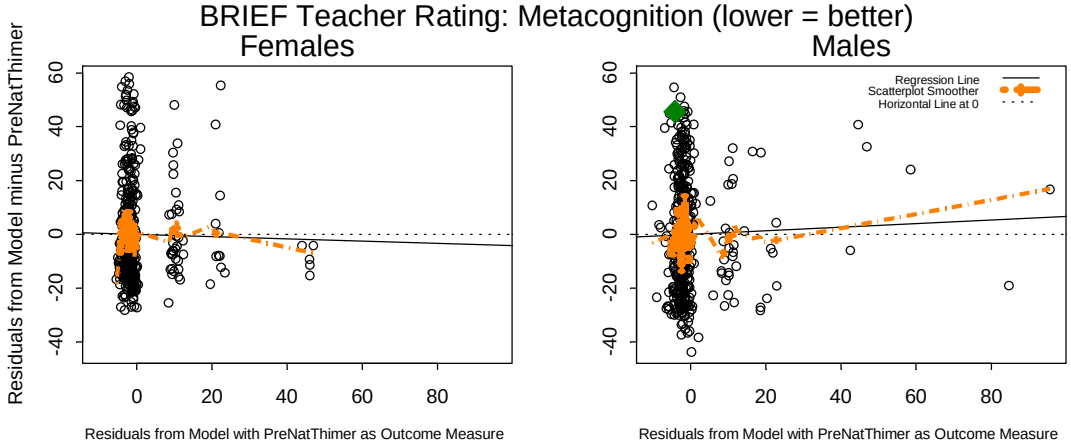


Exhibit B.24. Partial-partial Residual Plots: PreNatThimer





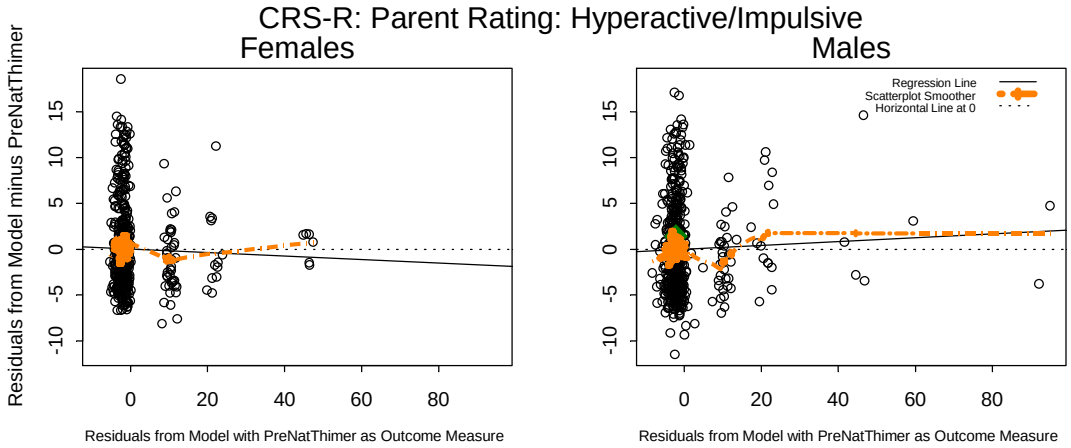
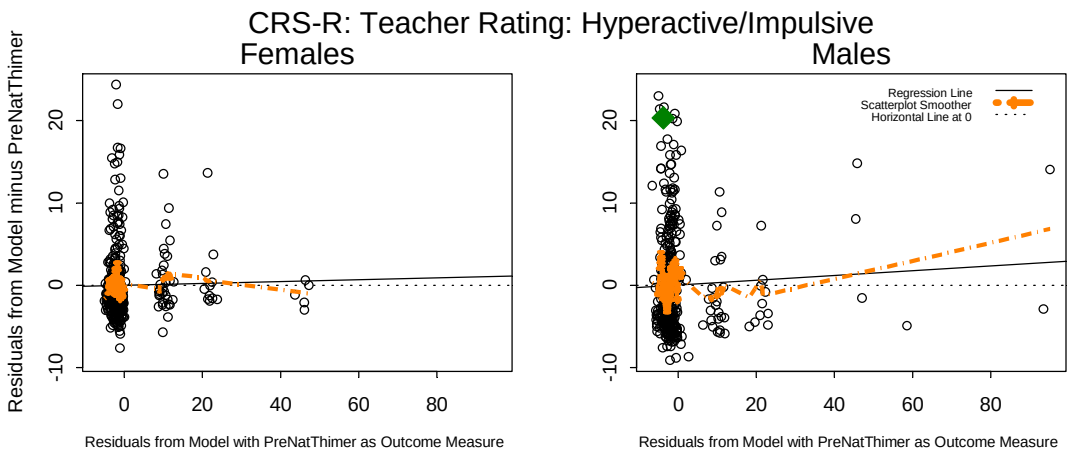
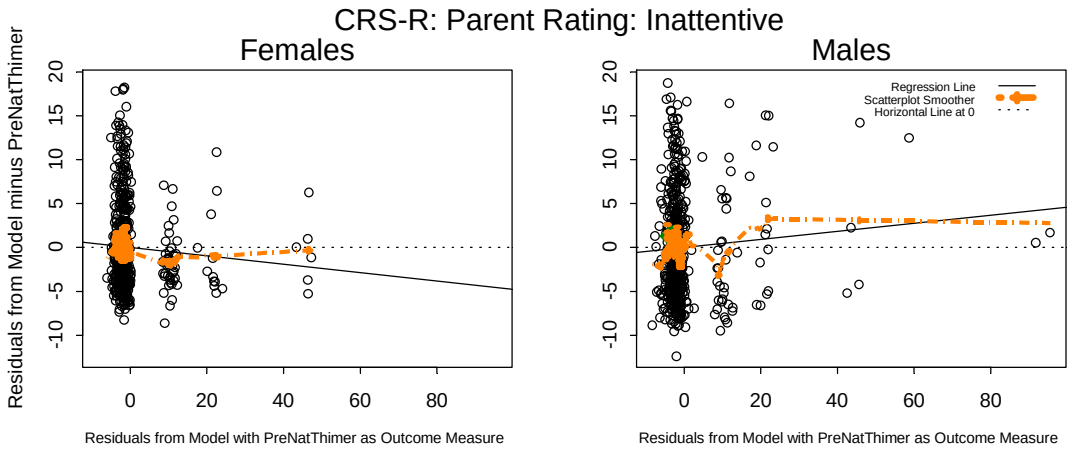


Exhibit B.25. Partial-partial Residual Plots: PreNatThimer





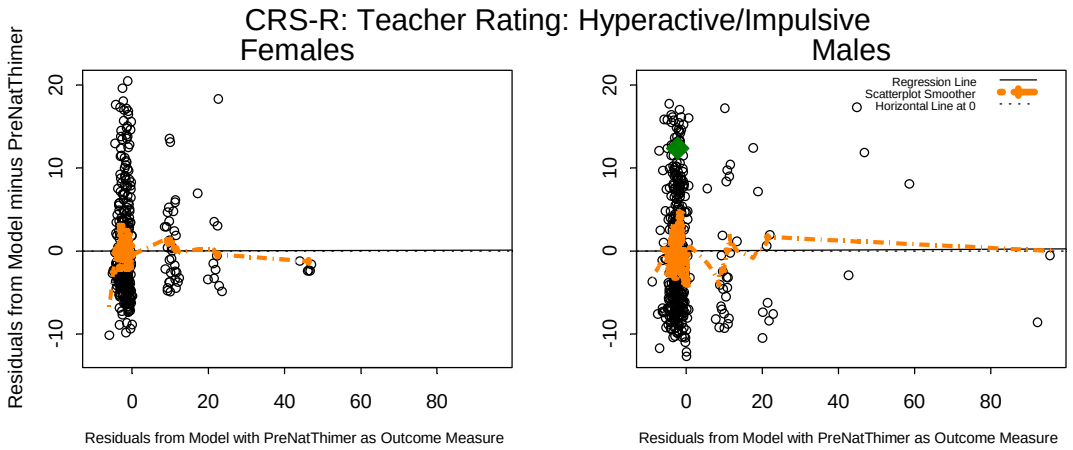


Exhibit B.26. Partial-partial Residual Plots: PreNatThimer

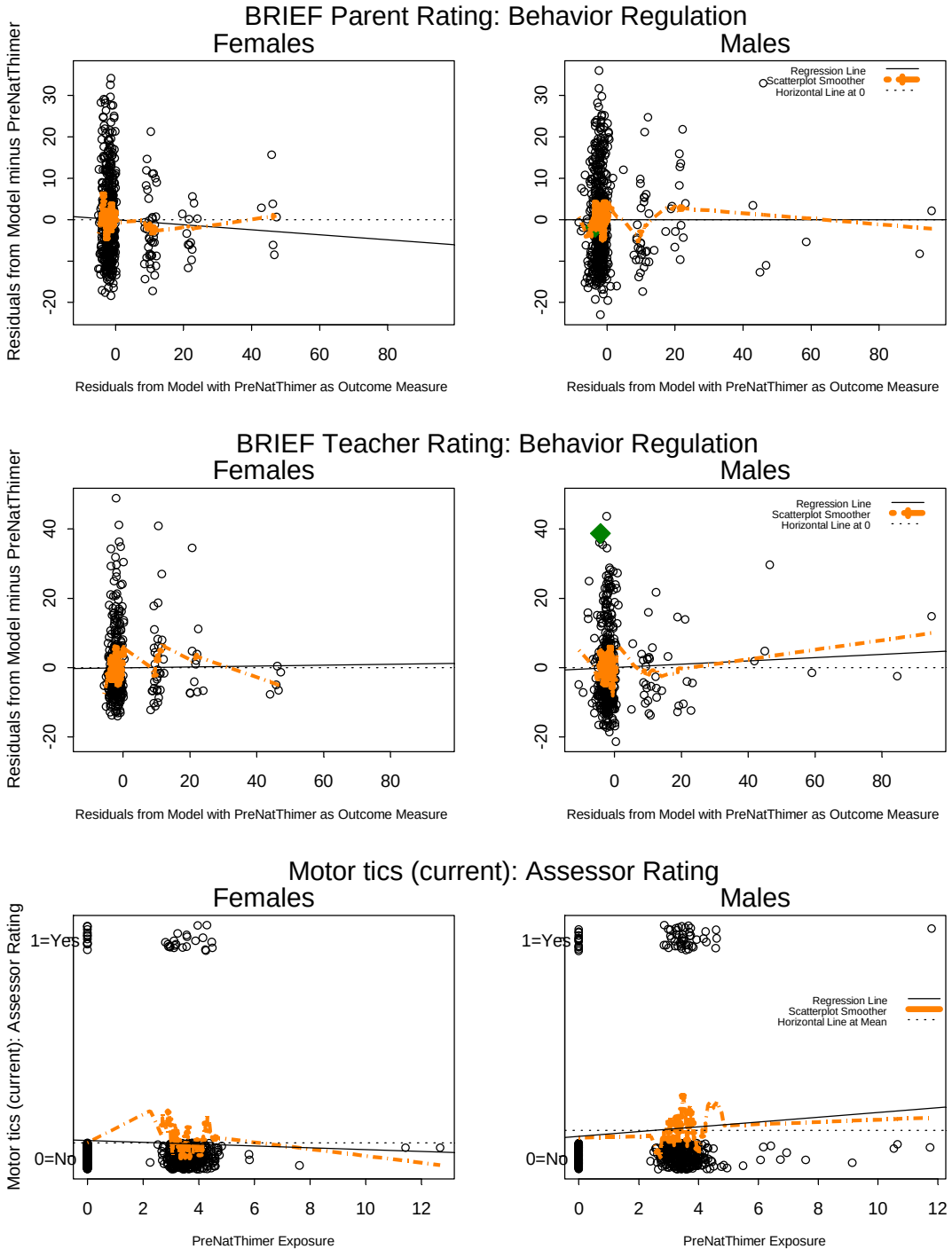


Exhibit B.27. Partial-partial Residual Plots: PreNatThimer

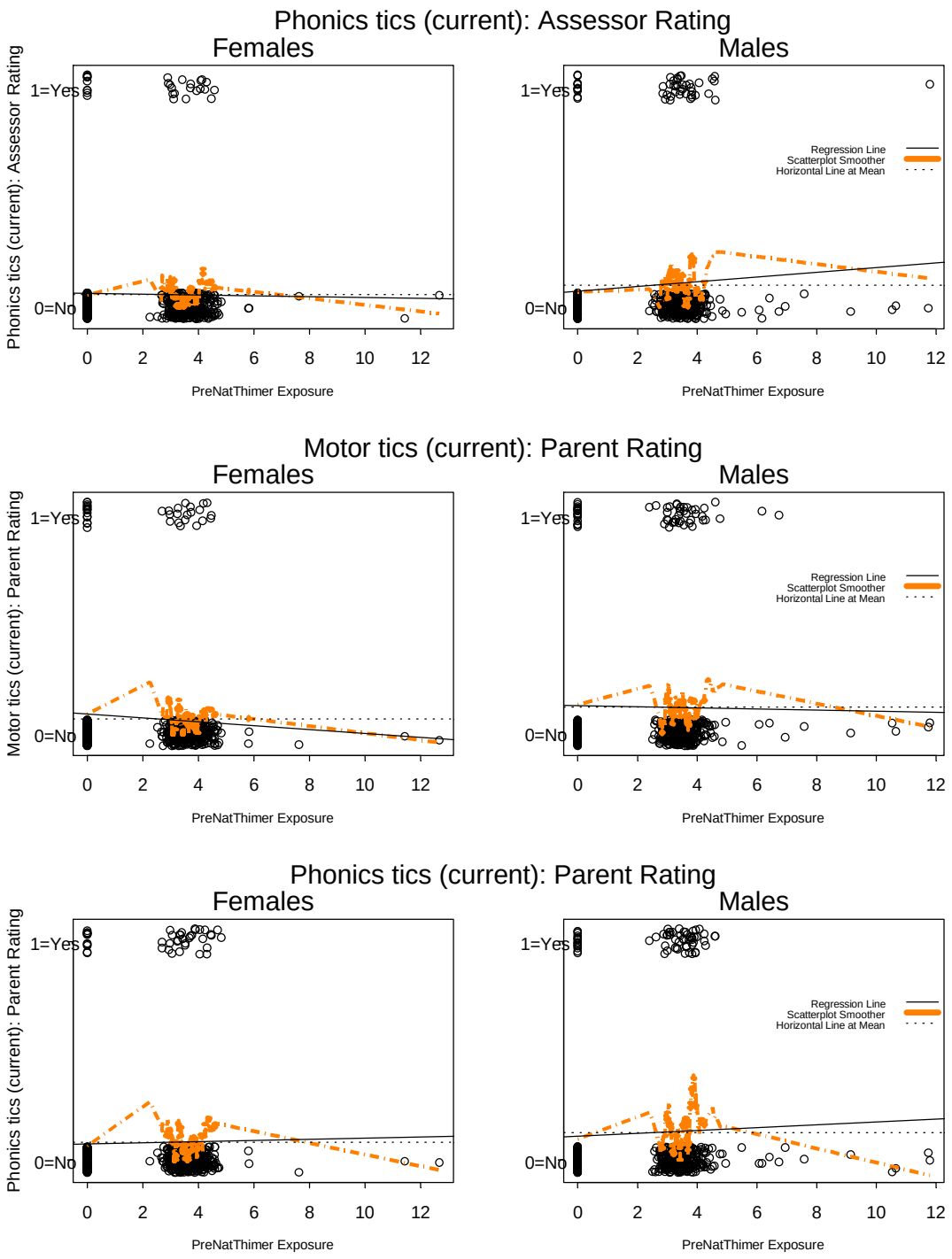


Exhibit B.28. Partial-partial Residual Plots: PreNatThimer

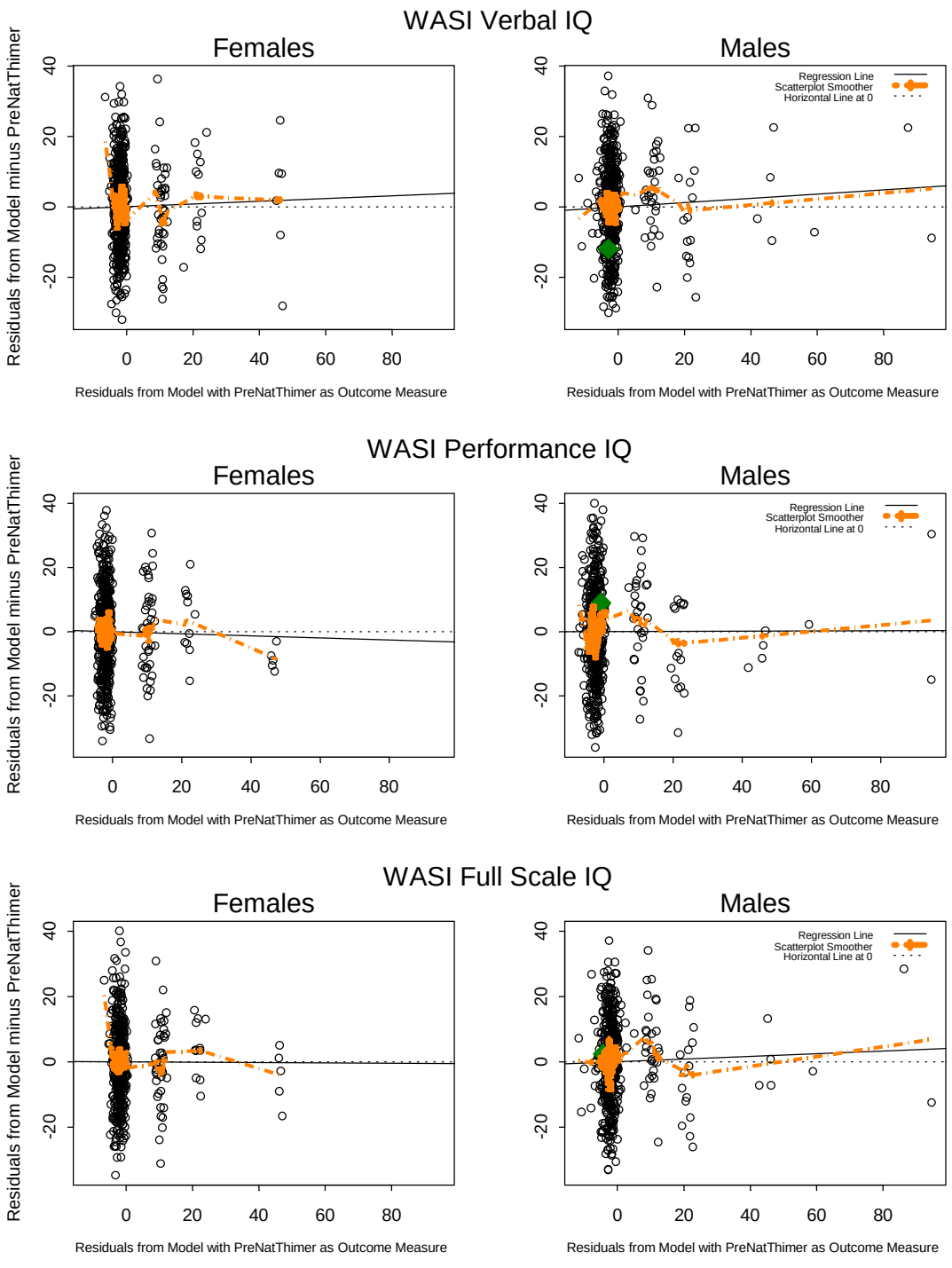
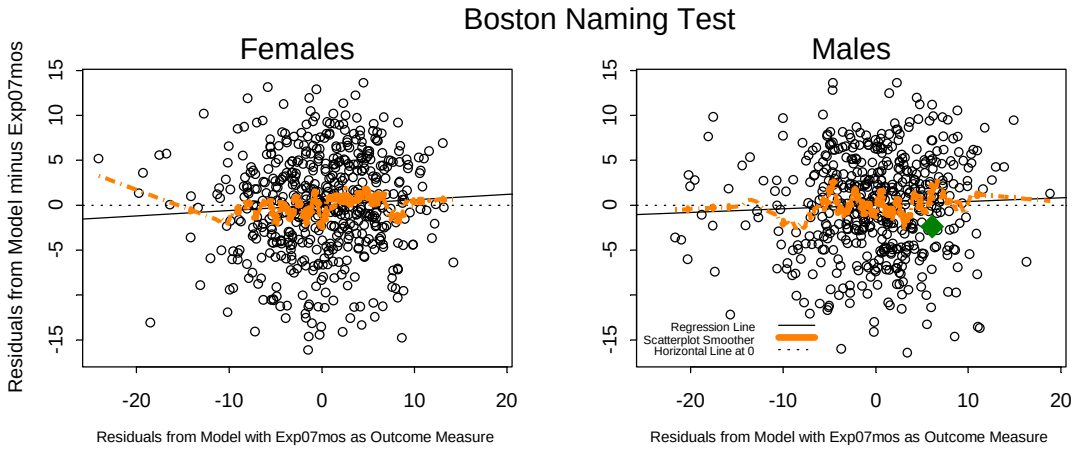
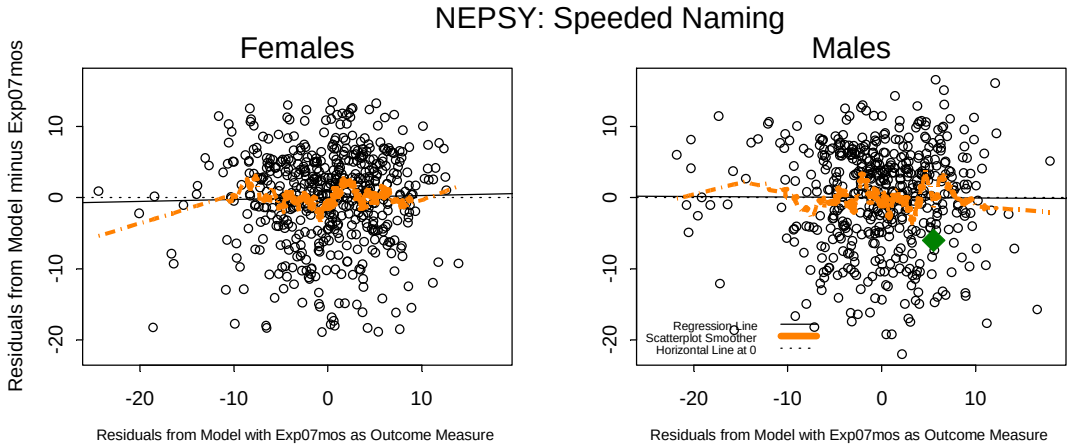


Exhibit B.29. Partial-partial Residual Plots: Exp07





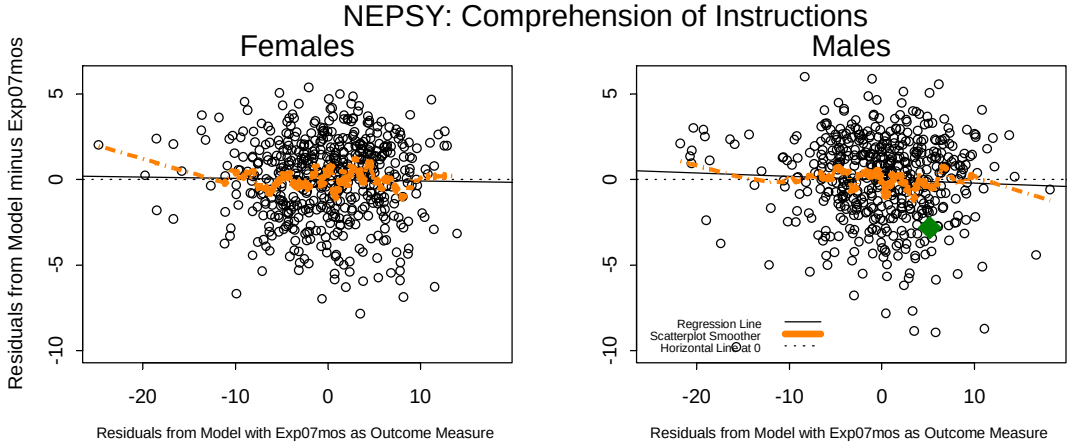


Exhibit B.30. Partial-partial Residual Plots: Exp07

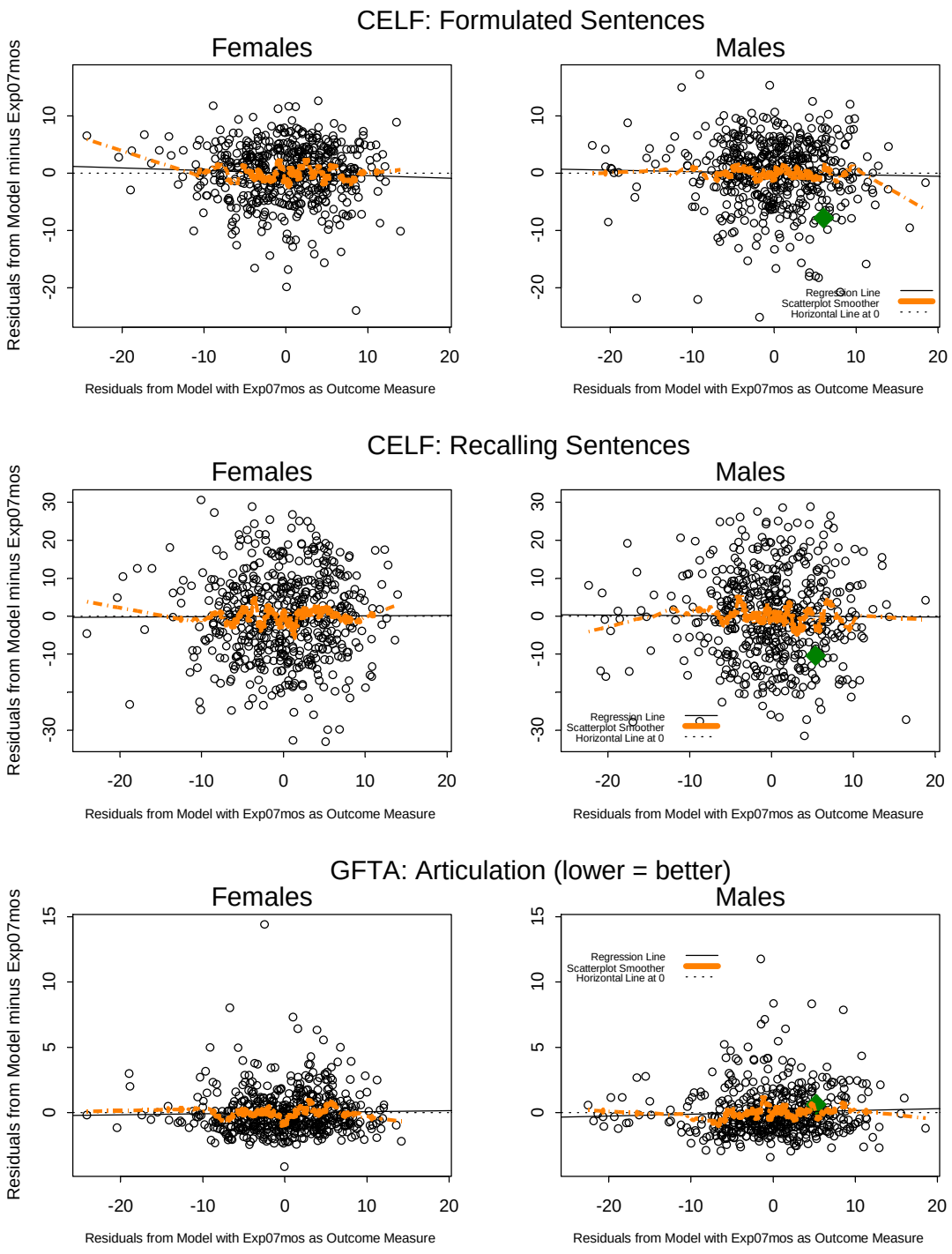


Exhibit B.31. Partial-partial Residual Plots: Exp07

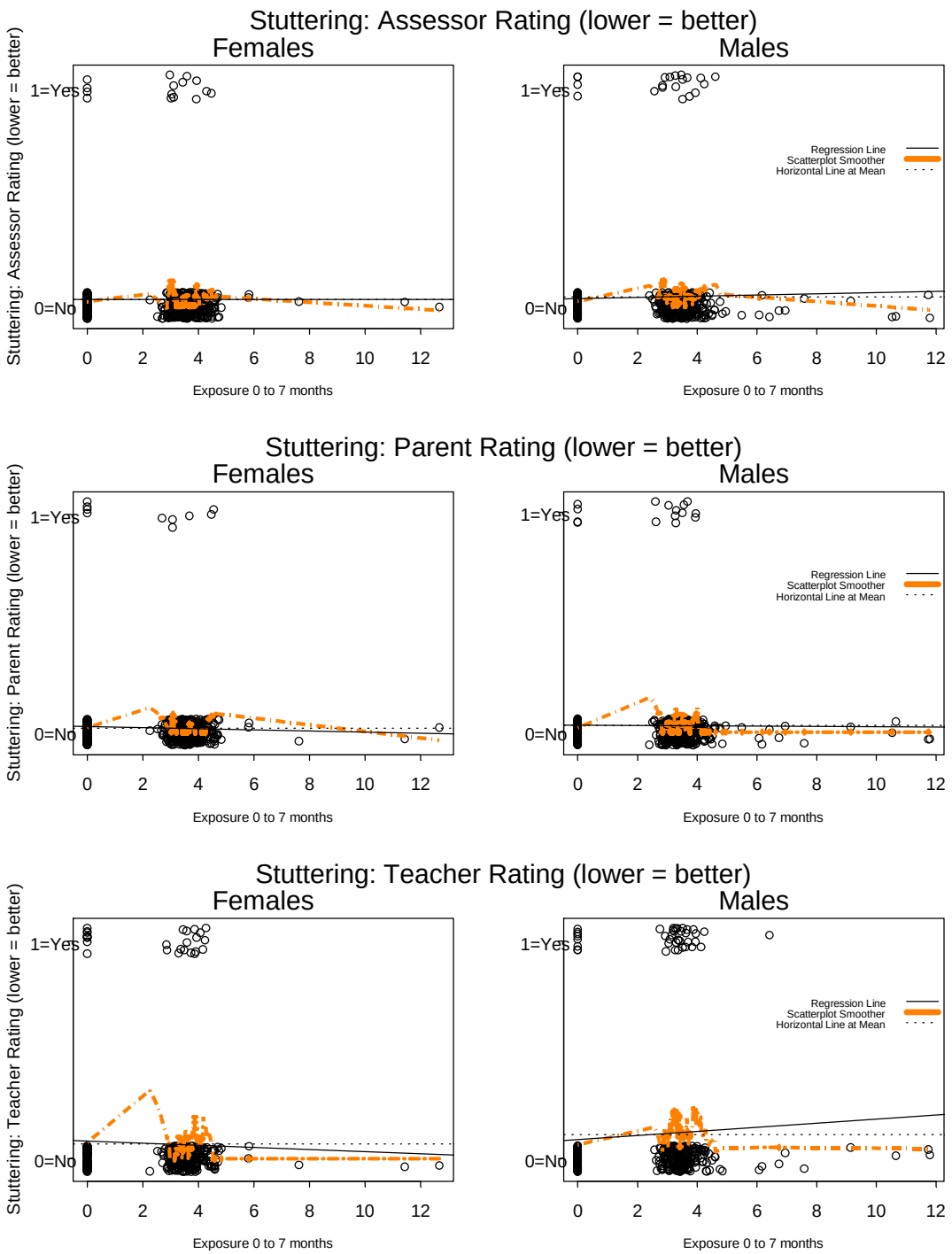


Exhibit B.32. Partial-partial Residual Plots: Exp07

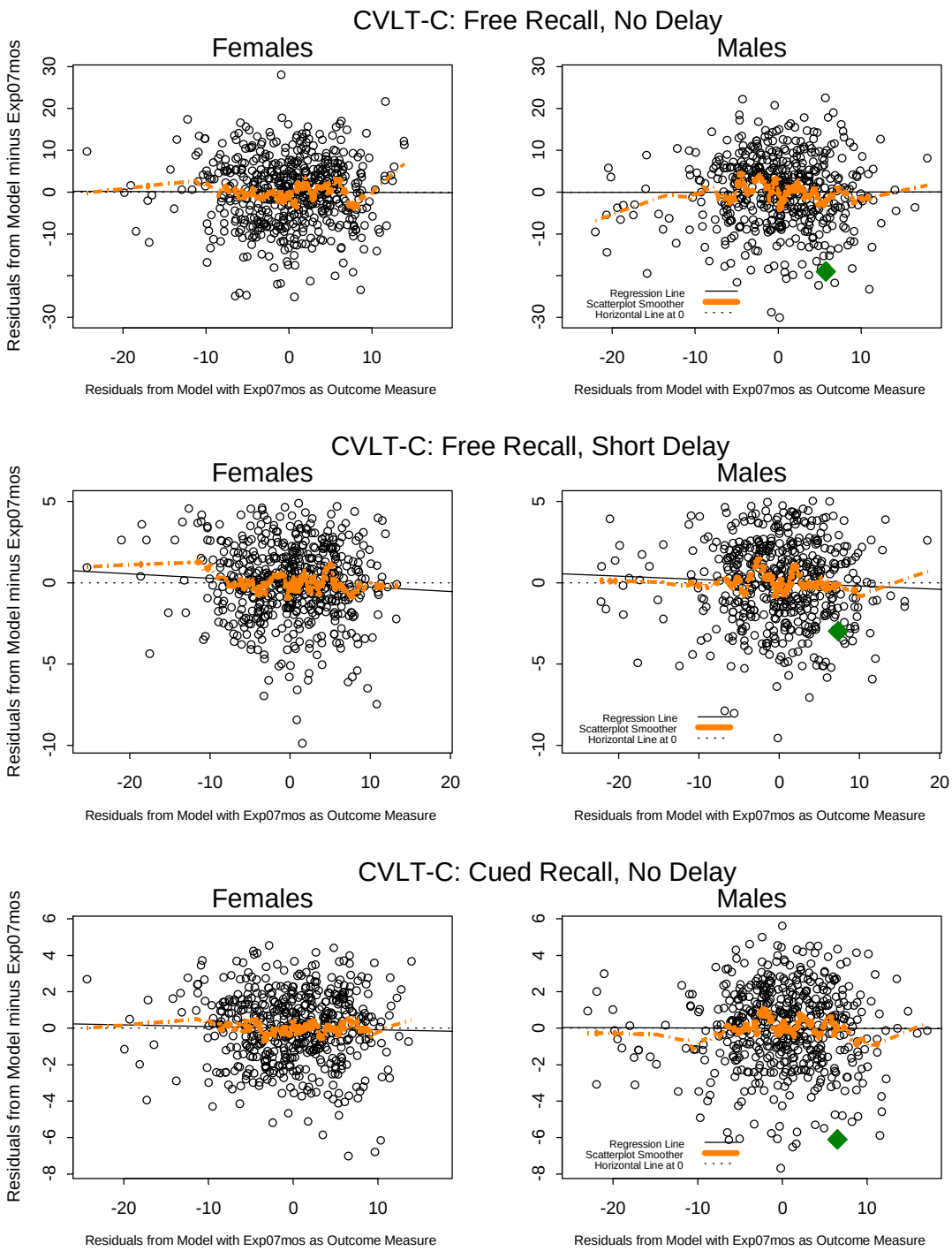


Exhibit B.33. Partial-partial Residual Plots: Exp07

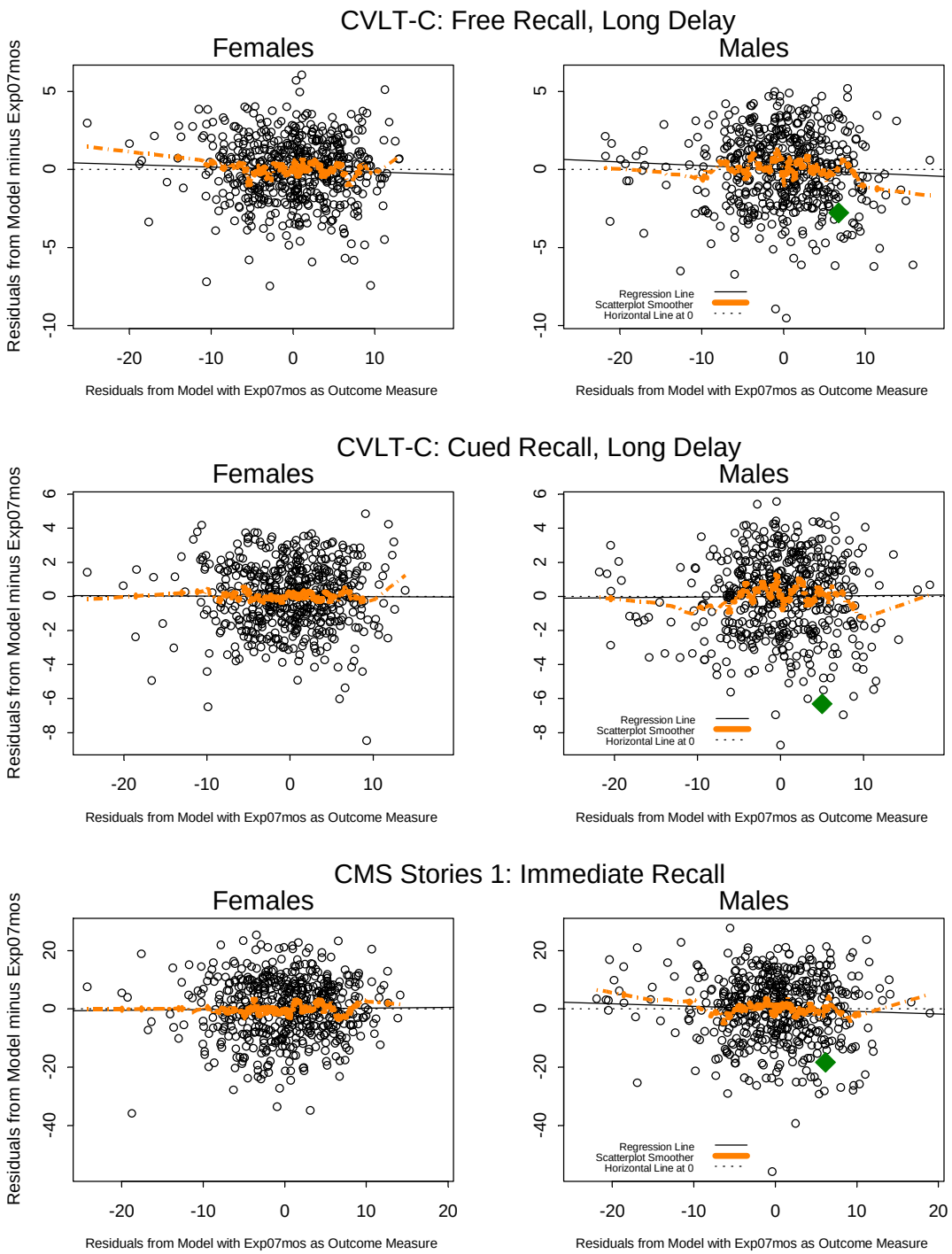
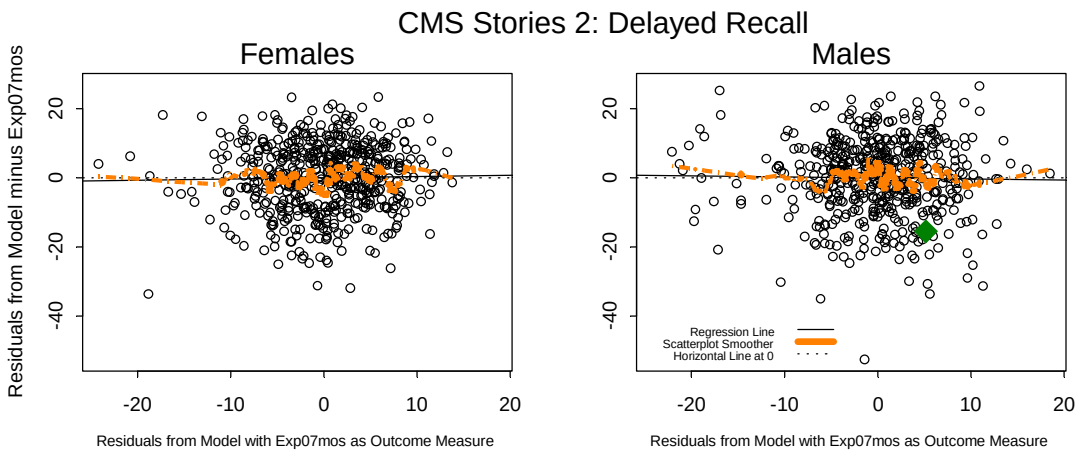
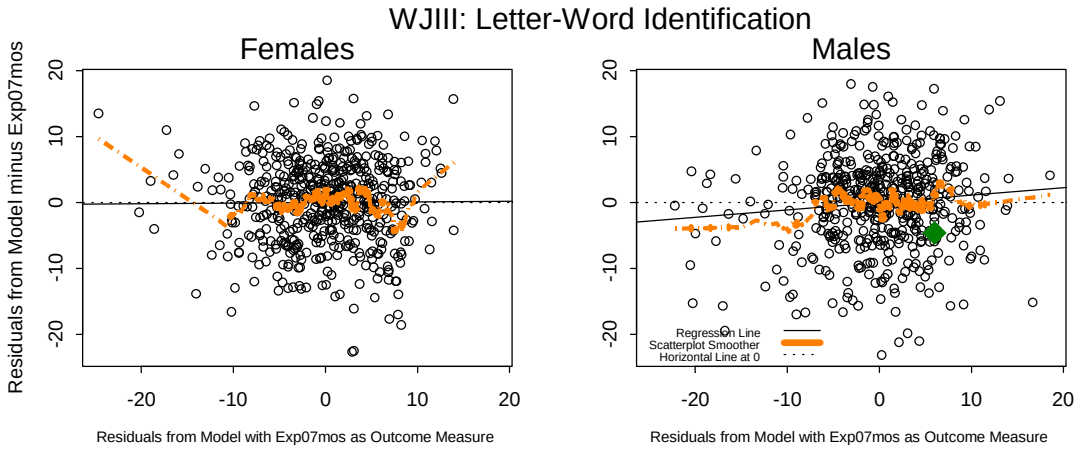


Exhibit B.34. Partial-partial Residual Plots: Exp07





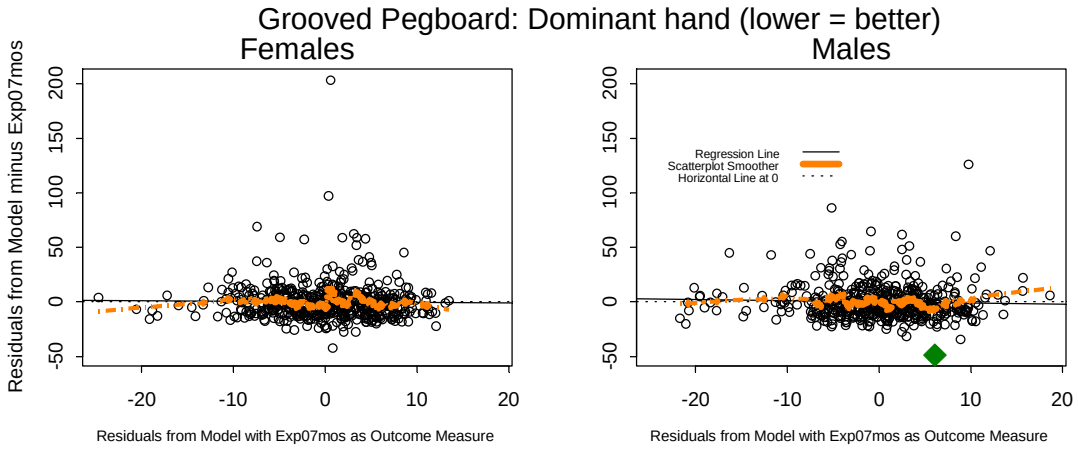


Exhibit B.35. Partial-partial Residual Plots: Exp07

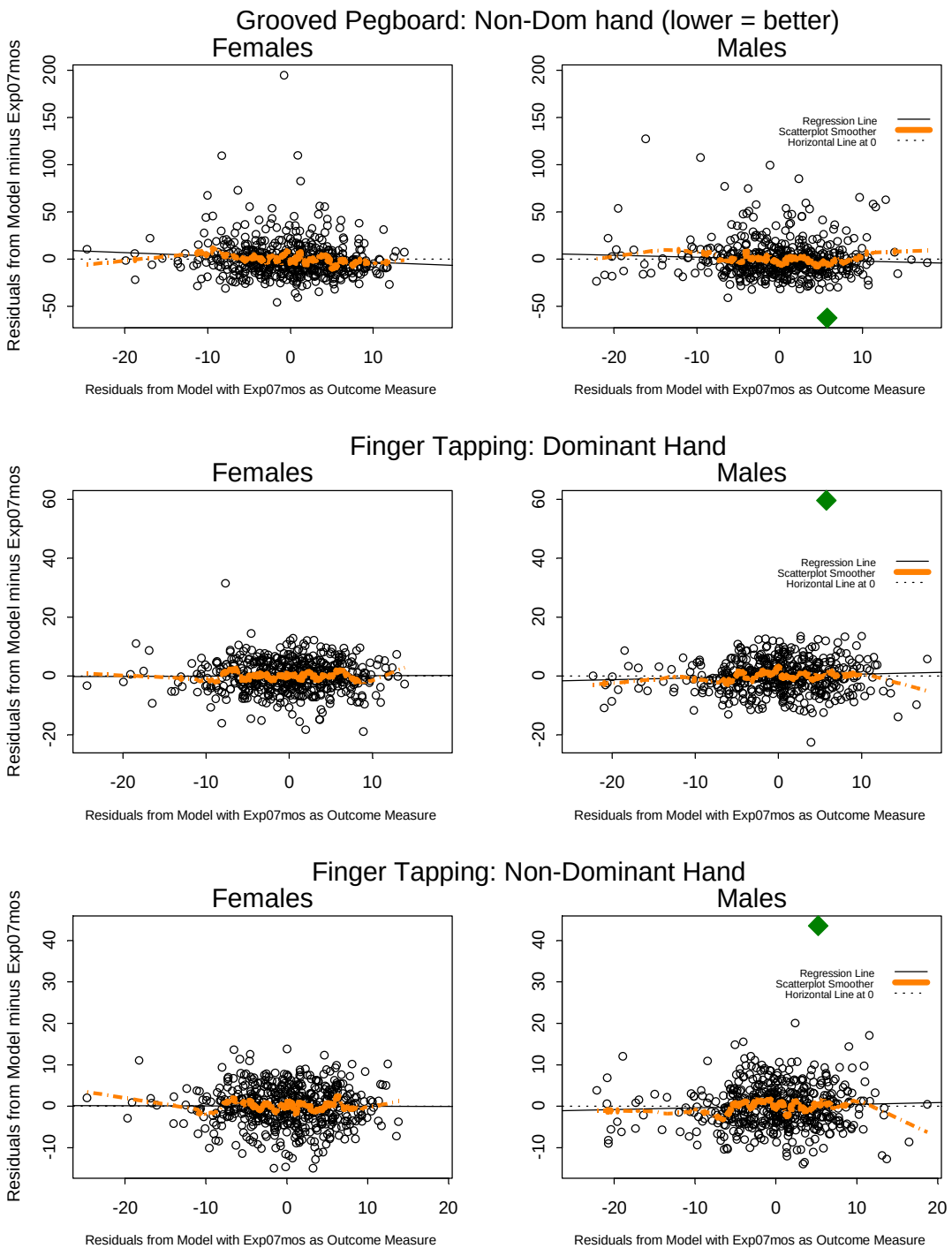


Exhibit B.36. Partial-partial Residual Plots: Exp07

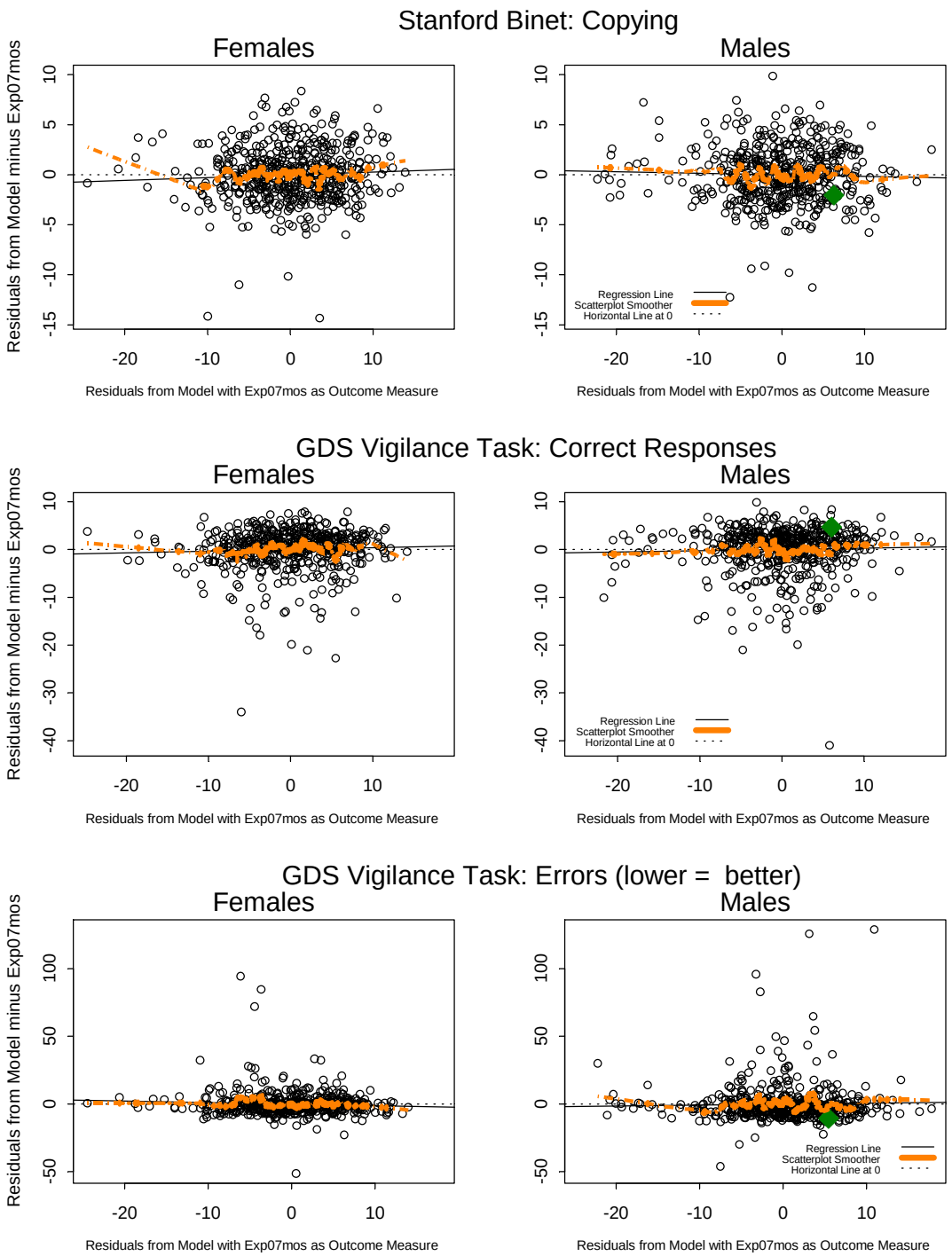
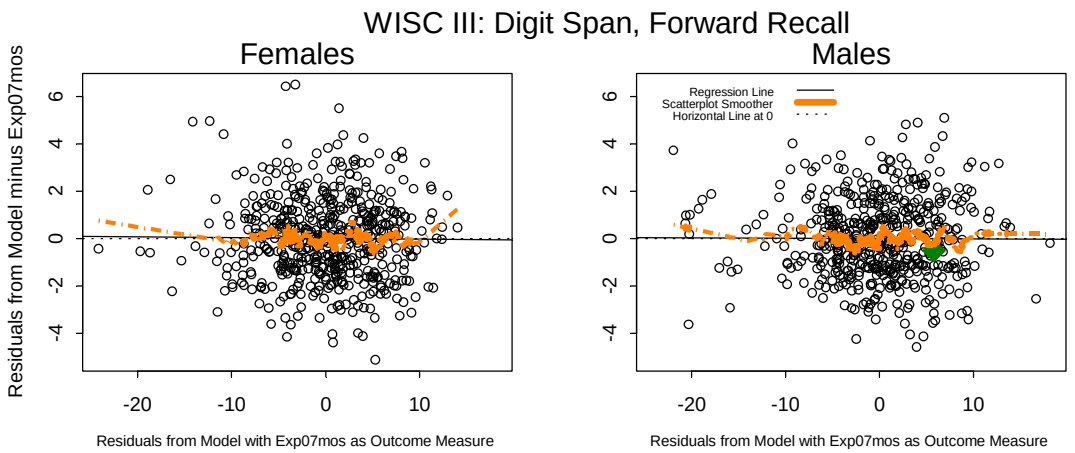
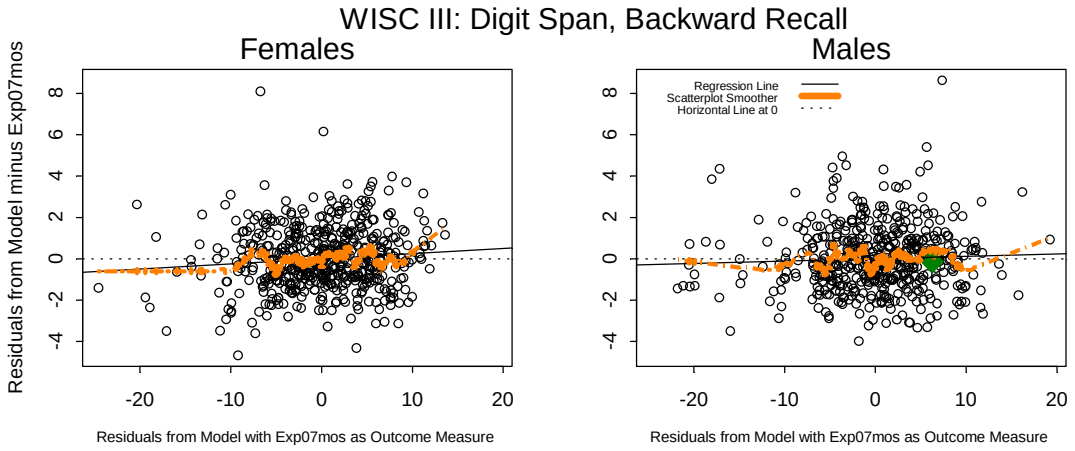


Exhibit B.37. Partial-partial Residual Plots: Exp07





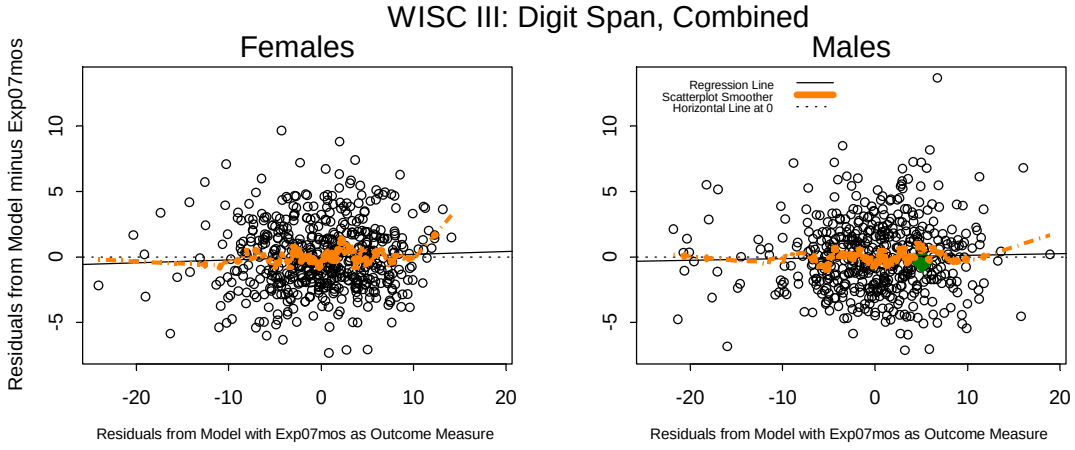
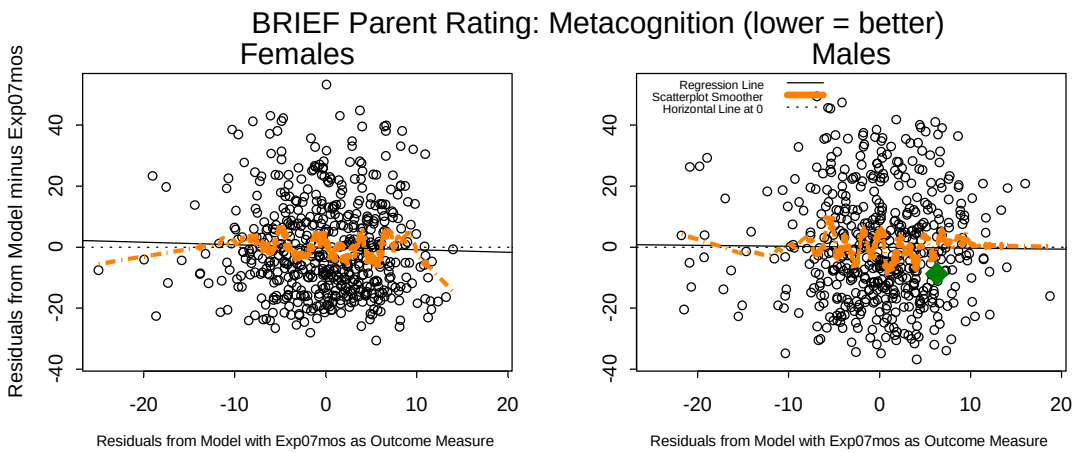
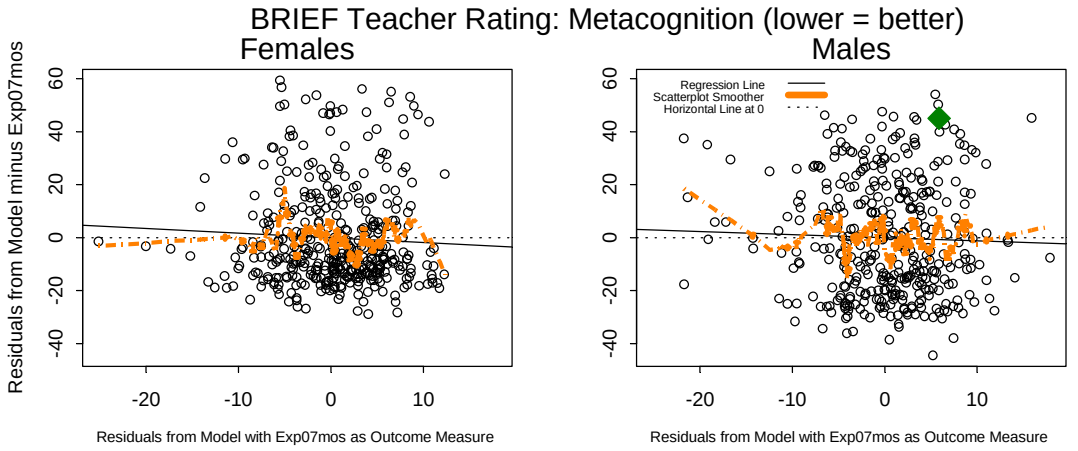


Exhibit B.38. Partial-partial Residual Plots: Exp07





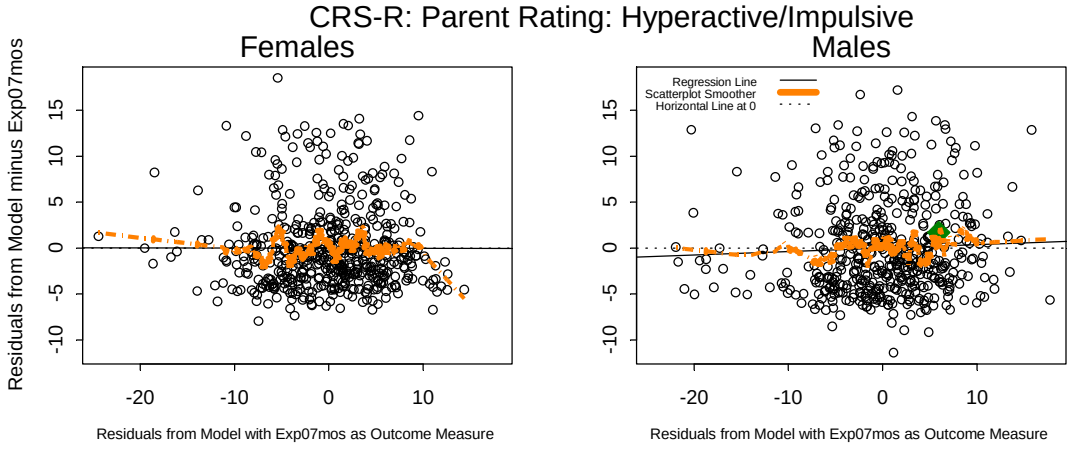


Exhibit B.39. Partial-partial Residual Plots: Exp07

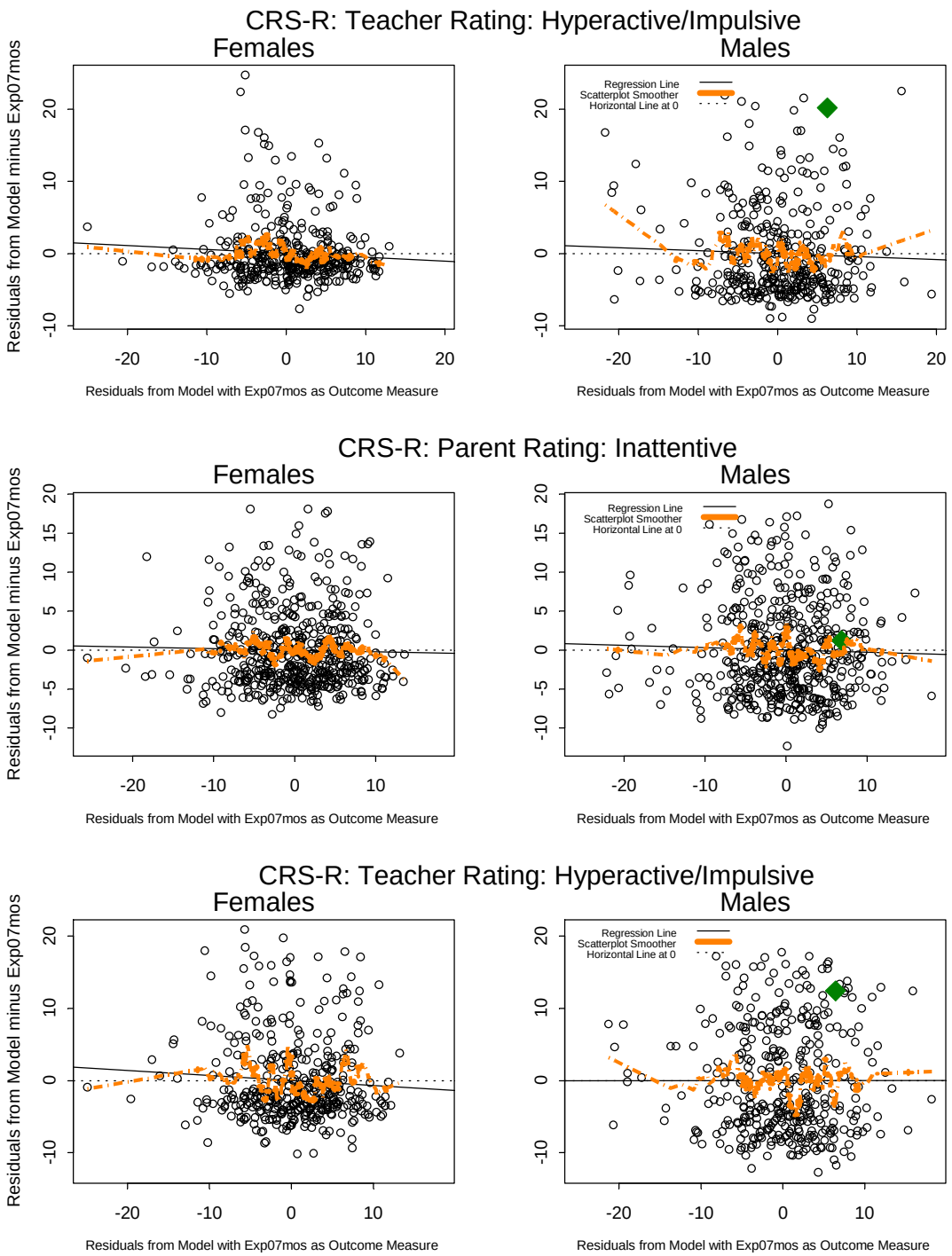


Exhibit B.40. Partial-partial Residual Plots: Exp07

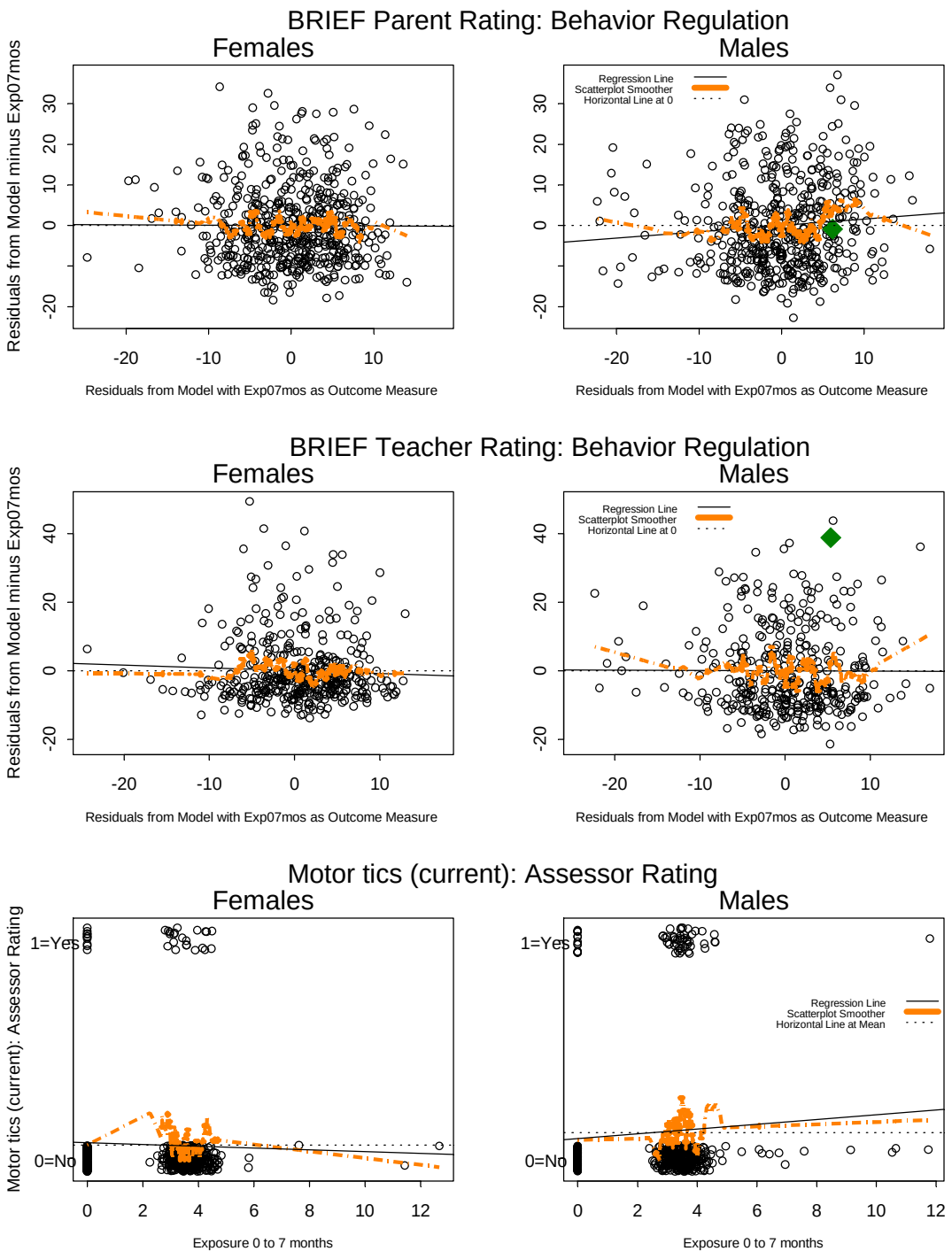


Exhibit B.41. Partial-partial Residual Plots: Exp07

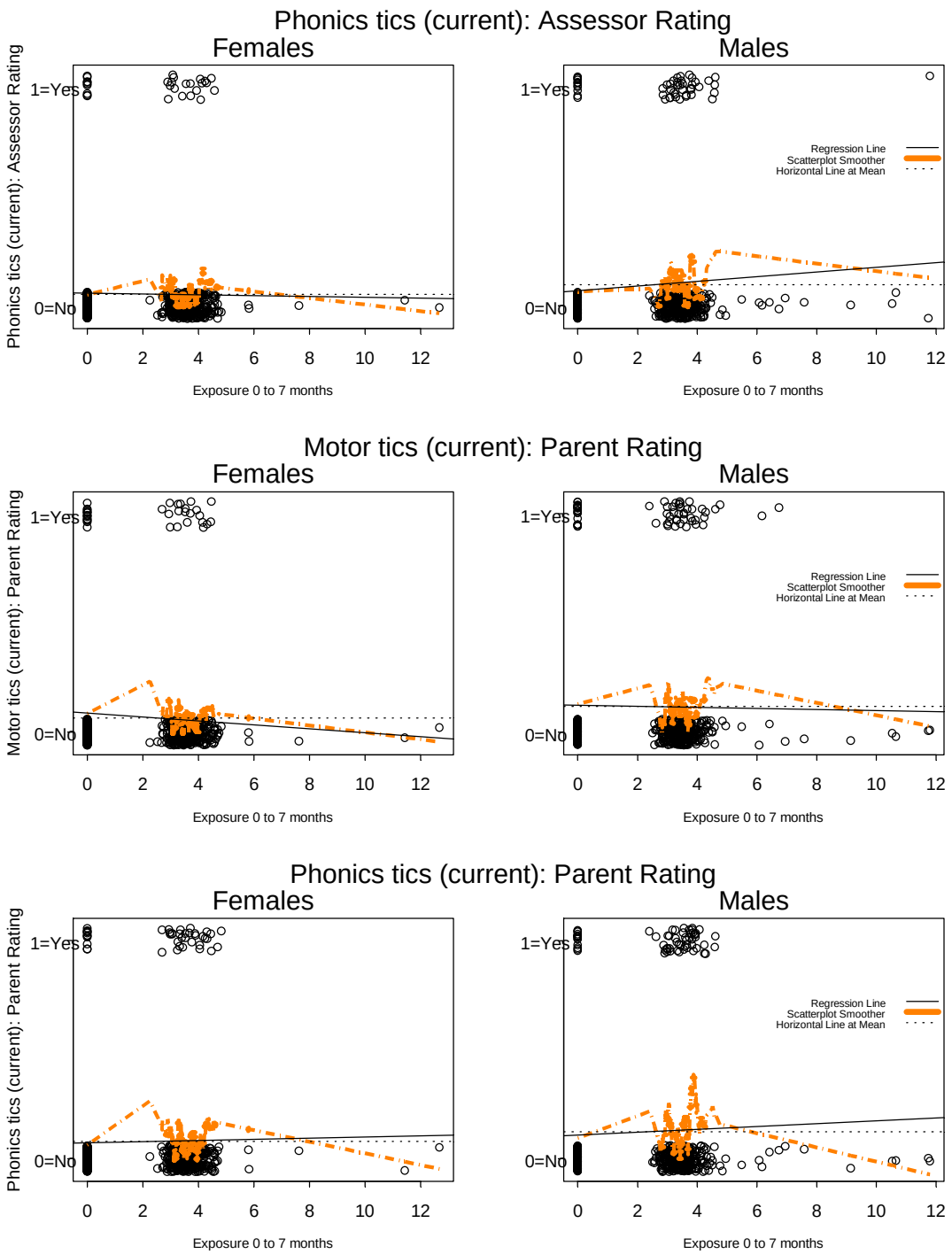


Exhibit B.42. Partial-partial Residual Plots: Exp07

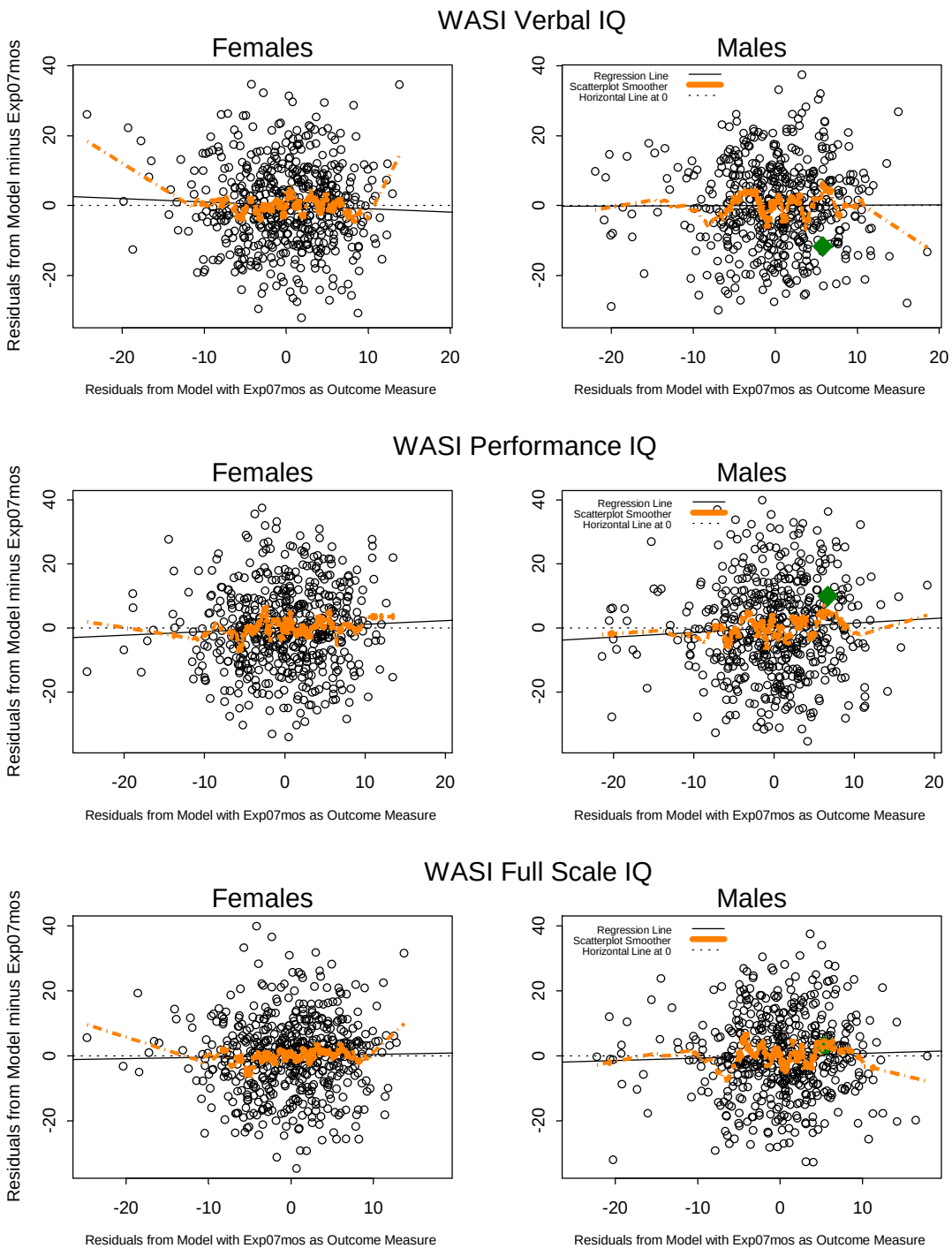


Exhibit B.43. Summary of Thimerosal Effects when PreNatThimer is Truncated and HepB Coded as Yes/no – Females

Test	PN_Trunc				HepBYN				Exp17mos			
	Est	S.E.	P	StCf	Est	S.E.	P	StCf	Est	S.E.	P	StCf
Speech and Language												
Boston Naming Test	0.037	0.046	0.419	0.026	-0.672	0.554	0.226	-0.038	0.079	0.042	0.058	0.066
NEPSY: Speeded Naming	0.050	0.057	0.381	0.035	-0.130	0.692	0.851	-0.007	0.034	0.053	0.516	0.028
NEPSY: Comprehension of Instructions	0.006	0.020	0.783	0.011	S* -0.575	0.248	0.021*	-0.093	0.003	0.019	0.877	0.007
CELF: Formulated Sentences	0.020	0.045	0.653	0.017	-0.410	0.544	0.452	-0.028	-0.035	0.041	0.395	-0.035
CELF: Recalling Sentences	0.048	0.094	0.607	0.019	-0.544	1.130	0.630	-0.017	0.027	0.086	0.756	0.012
GFTA: Articulation (lower = better)	-0.004	0.014	0.794	-0.011	0.247	0.174	0.158	0.060	0.001	0.013	0.945	0.003
Stuttering: Assessor Rating (lower = better)	0.043	0.038	0.249	1.634	0.174	0.616	0.778	1.172	0.030	0.047	0.529	1.488
Stuttering: Parent Rating (lower = better)	-0.816	16.467	0.960	0.000	-0.571	0.701	0.415	0.593	0.049	0.064	0.440	1.929
Stuttering: Teacher Rating (lower = better)	-0.048	0.052	0.355	0.580	S -0.406	0.460	0.377	0.689	0.011	0.039	0.787	1.152
Verbal Memory												
CVLT-C: Free Recall, No Delay	0.049	0.069	0.482	0.028	S -0.929	0.842	0.270	-0.044	0.012	0.064	0.852	0.008
CVLT-C: Free Recall, Short Delay	0.006	0.020	0.745	0.013	S* -0.383	0.239	0.110	-0.064	-0.023	0.018	0.205	-0.056
CVLT-C: Cued Recall, Short Delay	-0.012	0.017	0.474	-0.029	S* -0.228	0.208	0.273	-0.044	-0.006	0.016	0.708	-0.016
CVLT-C: Free Recall, Long Delay	-0.005	0.018	0.796	-0.011	S* -0.344	0.221	0.120	-0.062	-0.010	0.017	0.534	-0.027
CVLT-C: Cued Recall, Long Delay	-0.011	0.018	0.523	-0.026	S* -0.264	0.216	0.221	-0.049	0.004	0.016	0.818	0.010
CMS Stories 1: Immediate Recall	-0.014	0.089	0.875	-0.005	-0.436	1.081	0.687	-0.013	0.038	0.082	0.647	0.016
CMS Stories 2: Delayed Recall	-0.059	0.088	0.501	-0.022	-1.264	1.064	0.235	-0.038	0.061	0.081	0.453	0.027
Achievement												
WJIII: Letter- Word Identification	-0.041	0.055	0.460	-0.025	-0.974	0.669	0.146	-0.048	0.030	0.051	0.552	0.022
Fine Motor Coordination												
Grooved Pegboard: Dominant Hand (lower = better)	-0.077	0.136	0.571	-0.016	0.029	1.644	0.986	0.000	-0.044	0.123	0.718	-0.011
Grooved Pegboard: Non-dom Hand (lower = better)	-0.076	0.164	0.641	-0.014	-0.174	1.992	0.930	-0.003	-0.348	0.151	0.021+	-0.073
Finger Tapping: Dominant Hand	-0.008	0.046	0.858	-0.007	S* 0.143	0.564	0.800	0.010	0.003	0.043	0.949	0.003
Finger Tapping: Non-dominant Hand	0.020	0.042	0.633	0.018	S* -0.663	0.510	0.194	-0.048	0.012	0.039	0.767	0.012
Visual Spatial Ability												
Stanford Binet: Copying	S* -0.040	0.023	0.081	-0.075	-0.093	0.276	0.735	-0.014	S 0.034	0.021	0.108	0.075
Attention/Executive Functioning												
GDS Vigilance Task: Correct Responses	-0.025	0.038	0.523	-0.027	-0.324	0.467	0.488	-0.029	0.050	0.036	0.159	0.065
GDS Vigilance Task: Errors (lower = better)	0.050	0.099	0.615	0.021	0.131	1.206	0.914	0.005	-0.121	0.092	0.190	-0.060
WISC III: Digit Span, Forward Recall	-0.017	0.014	0.239	-0.050	-0.024	0.173	0.891	-0.006	-0.004	0.013	0.767	-0.014
WISC III: Digit Span, Backward Recall	0.000	0.012	0.980	0.001	-0.007	0.151	0.964	-0.002	0.026	0.011	0.024+	0.104
WISC III: Digit Span, Combined	-0.016	0.022	0.481	-0.030	-0.074	0.266	0.779	-0.012	0.022	0.020	0.273	0.050
BRIEF Parent Rating: Metacognition (lower = better)	S* -0.261	0.139	0.061	-0.081	-1.006	1.690	0.552	-0.025	-0.058	0.127	0.649	-0.021
BRIEF Teacher Rating: Metacognition (lower = better)	0.020	0.185	0.913	0.005	S -2.984	2.398	0.214	-0.060	-0.132	0.182	0.468	-0.039
Behavior Regulation (lower = better)												
CRS-R: Parent Rating: Hyperactive/Impulsive	-0.037	0.039	0.350	-0.040	0.088	0.478	0.854	0.008	-0.001	0.036	0.977	-0.001
CRS-R: Teacher Rating: Hyperactive/Impulsive	0.029	0.047	0.534	0.029	-0.509	0.616	0.410	-0.040	-0.045	0.047	0.330	-0.052
CRS-R: Parent Rating: Inattentive	S* -0.075	0.045	0.098	-0.072	-0.172	0.553	0.755	-0.013	-0.016	0.042	0.708	-0.017
CRS-R: Teacher Rating: Inattentive	0.021	0.060	0.727	0.016	S* -1.151	0.787	0.144	-0.072	-0.052	0.059	0.380	-0.047
BRIEF Parent Rating: Behavior Regulation	-0.111	0.084	0.186	-0.058	-0.902	1.021	0.377	-0.038	0.019	0.077	0.807	0.012
BRIEF Teacher Rating: Behavior Regulation	0.058	0.100	0.558	0.027	-0.216	1.292	0.867	-0.008	-0.091	0.099	0.359	-0.050
Tics (lower = better)												
Motor tics (current): Assessor Rating	0.044	0.030	0.134	1.648	-0.525	0.409	0.200	0.619	0.019	0.031	0.553	1.281
Phonics tics (current): Assessor Rating	-0.028	0.050	0.572	0.725	-0.292	0.433	0.501	0.766	0.004	0.034	0.906	1.055
Motor tics (current): Parent Rating	-0.055	0.056	0.328	0.540	-0.828	0.399	0.038+	0.469	0.014	0.032	0.665	1.204
Phonics tics (current): Parent Rating	-0.074	0.052	0.157	0.433	0.097	0.386	0.802	1.093	S* -0.042	0.028	0.125	0.568
General Intellectual Functioning												
WASI Verbal IQ	0.060	0.099	0.542	0.023	S* -3.496	1.202	0.004*	-0.109	-0.038	0.091	0.673	-0.018
WASI Performance IQ	0.025	0.116	0.827	0.009	S* -1.315	1.364	0.335	-0.039	0.141	0.102	0.170	0.061
WASI Full Scale IQ	0.041	0.103	0.689	0.016	S* -2.702	1.224	0.028*	-0.085	0.096	0.093	0.305	0.044

Key:	Mercury effect = Better Outcome	< .05	>.05, <.10	Mercury effect =Worse Outcome	< .05	>.05, <.10
		p-value+	p-value		p-value*	p-value

P-values shown are rounded to 3 decimal places. Therefore, a value shown as 0.050 may satisify p<0.05 criterion if the original value was rounded up, or may not satisfy the criterion if the value was rounded down.
S* (S) = Coefficient for females is significantly different than coefficient for males at the 0.05 (0.10) level

Exhibit B.44. Summary of Thimerosal Effects when PreNatThimer is Truncated and HepB Coded as Yes/no – Males

Test	PN_Trunc				HepBYN				Exp17mos			
	Est	S.E.	P	StCf	Est	S.E.	P	StCf	Est	S.E.	P	StCf
Speech and Language												
Boston Naming Test	0.059	0.044	0.187	0.041	0.166	0.575	0.773	0.009	0.038	0.043	0.380	0.031
NEPSY: Speeded Naming	0.125	0.056	0.025+	0.087	-0.265	0.721	0.713	-0.015	0.001	0.054	0.988	0.001
NEPSY: Comprehension of Instructions	-0.004	0.020	0.824	-0.009	S* 0.226	0.256	0.379	0.037	-0.030	0.019	0.125	-0.070
CELF: Formulated Sentences	0.006	0.043	0.888	0.005	0.172	0.563	0.760	0.012	-0.029	0.042	0.491	-0.029
CELF: Recalling Sentences	0.077	0.092	0.401	0.030	-0.440	1.182	0.710	-0.014	-0.012	0.088	0.894	-0.005
GFTA: Articulation (lower = better)	-0.011	0.014	0.436	-0.033	0.277	0.180	0.123	0.067	0.007	0.013	0.596	0.025
Stuttering: Assessor Rating (lower = better)	-0.528	1.624	0.745	0.003	0.618	0.620	0.319	1.760	0.014	0.044	0.744	1.211
Stuttering: Parent Rating (lower = better)	-0.001	0.052	0.992	0.994	-0.206	0.649	0.751	0.828	0.020	0.056	0.714	1.311
Stuttering: Teacher Rating (lower = better)	-0.044	0.041	0.280	0.605	S 0.814	0.459	0.076	2.106	0.002	0.033	0.959	1.023
Verbal Memory												
CVLT-C: Free Recall, No Delay	0.049	0.068	0.469	0.029	S 1.409	0.873	0.107	0.066	-0.029	0.066	0.658	-0.020
CVLT-C: Free Recall, Short Delay	0.007	0.019	0.703	0.015	S* 0.355	0.248	0.152	0.059	-0.029	0.018	0.115	-0.071
CVLT-C: Cued Recall, Short Delay	0.009	0.017	0.587	0.021	S* 0.524	0.214	0.015+	0.100	-0.015	0.016	0.358	-0.041
CVLT-C: Free Recall, Long Delay	0.014	0.018	0.427	0.031	S* 0.282	0.229	0.219	0.051	-0.031	0.017	0.070	-0.081
CVLT-C: Cued Recall, Long Delay	0.021	0.017	0.229	0.048	S* 0.500	0.224	0.026+	0.092	-0.008	0.017	0.651	-0.021
CMS Stories 1: Immediate Recall	0.122	0.086	0.158	0.044	-0.219	1.124	0.845	-0.006	-0.094	0.084	0.264	-0.040
CMS Stories 2: Delayed Recall	0.049	0.085	0.566	0.018	0.159	1.108	0.886	0.005	-0.043	0.083	0.602	-0.019
Achievement												
WJIII: Letter- Word Identification	0.065	0.054	0.231	0.039	0.105	0.698	0.880	0.005	0.122	0.052	0.019*	0.087
Fine Motor Coordination												
Grooved Pegboard: Dominant Hand (lower = better)	-0.161	0.133	0.225	-0.033	-2.816	1.706	0.099	-0.047	-0.060	0.127	0.637	-0.015
Grooved Pegboard: Non-dom Hand (lower = better)	-0.096	0.161	0.551	-0.017	-0.558	2.059	0.786	-0.008	-0.212	0.155	0.173	-0.045
Finger Tapping: Dominant Hand	-0.051	0.045	0.255	-0.042	S* 1.816	0.583	0.002*	0.122	0.019	0.044	0.669	0.018
Finger Tapping: Non-dominant Hand	-0.067	0.041	0.104	-0.060	S* 1.169	0.530	0.028*	0.086	0.015	0.040	0.699	0.016
Visual Spatial Ability												
Stanford Binet: Copying	S* 0.064	0.022	0.004+	0.122	0.037	0.284	0.897	0.006	S -0.018	0.021	0.406	-0.040
Attention/Executive Functioning												
GDS Vigilance Task: Correct Responses	0.005	0.038	0.885	0.006	0.316	0.485	0.514	0.028	0.020	0.037	0.589	0.026
GDS Vigilance Task: Errors (lower = better)	0.061	0.098	0.536	0.026	0.110	1.250	0.930	0.004	0.074	0.094	0.433	0.037
WISC III: Digit Span, Forward Recall	0.013	0.014	0.342	0.040	-0.149	0.180	0.410	-0.036	0.003	0.014	0.799	0.012
WISC III: Digit Span, Backward Recall	-0.025	0.012	0.039*	-0.086	0.338	0.156	0.031+	0.094	0.005	0.012	0.699	0.018
WISC III: Digit Span, Combined	-0.012	0.021	0.561	-0.024	0.163	0.277	0.555	0.025	0.011	0.021	0.584	0.026
BRIEF Parent Rating: Metacognition (lower = better)	S* 0.172	0.136	0.207	0.053	1.641	1.743	0.347	0.041	-0.078	0.130	0.549	-0.029
BRIEF Teacher Rating: Metacognition (lower = better)	0.021	0.200	0.916	0.005	S 3.691	2.492	0.139	0.075	-0.238	0.187	0.203	-0.070
Behavior Regulation (lower = better)												
CRS-R: Parent Rating: Hyperactive/Impulsive	0.032	0.038	0.406	0.035	0.848	0.493	0.085	0.076	0.021	0.037	0.560	0.028
CRS-R: Teacher Rating: Hyperactive/Impulsive	-0.001	0.050	0.985	-0.001	0.694	0.633	0.273	0.055	-0.063	0.048	0.187	-0.073
CRS-R: Parent Rating: Inattentive	S* 0.076	0.045	0.089	0.072	0.782	0.568	0.169	0.060	-0.050	0.043	0.245	-0.056
CRS-R: Teacher Rating: Inattentive	-0.008	0.065	0.896	-0.006	S* 1.443	0.809	0.075	0.090	-0.042	0.062	0.497	-0.038
BRIEF Parent Rating: Behavior Regulation	0.019	0.082	0.815	0.010	0.579	1.049	0.581	0.024	0.158	0.078	0.044*	0.096
BRIEF Teacher Rating: Behavior Regulation	0.004	0.108	0.973	0.002	1.927	1.347	0.153	0.073	-0.062	0.101	0.543	-0.034
Tics (lower = better)												
Motor tics (current): Assessor Rating	0.023	0.023	0.333	1.293	0.236	0.359	0.511	1.241	0.054	0.029	0.062	2.045
Phonics tics (current): Assessor Rating	0.004	0.027	0.870	1.051	0.310	0.387	0.423	1.328	0.057	0.029	0.051	2.147
Motor tics (current): Parent Rating	0.014	0.023	0.538	1.178	-0.199	0.339	0.557	0.833	0.007	0.026	0.788	1.099
Phonics tics (current): Parent Rating	0.014	0.023	0.548	1.168	0.204	0.348	0.558	1.205	S* 0.041	0.026	0.107	1.735
General Intellectual Functioning												
WASI Verbal IQ	0.091	0.096	0.343	0.035	S* -0.119	1.240	0.923	-0.004	0.014	0.093	0.882	0.006
WASI Performance IQ	-0.012	0.109	0.914	-0.004	S* 4.314	1.408	0.002+	0.129	0.053	0.105	0.614	0.023
WASI Full Scale IQ	0.055	0.098	0.578	0.021	S* 2.301	1.259	0.068	0.072	0.032	0.095	0.736	0.015

Key:	Mercury effect = Better Outcome	< .05	>.05, <.10	Mercury effect =Worse Outcome	< .05	>.05, <.10
		p-value+	p-value		p-value*	p-value

P-values shown are rounded to 3 decimal places. Therefore, a value shown as 0.050 may satisfy p<0.05 criterion if the original value was rounded up, or may not satisfy the criterion if the value was rounded down.
S* (S) = Coefficient for males is significantly different than coefficient for females at the 0.05 (0.10) level

4. Appendix D. Change in Estimate and Precision as Covariates Are Dropped

The graphs in this appendix show the effects of dropping covariates on the estimates of prenatal exposure effects, cumulative birth to seven months exposure effects[8], and neonatal (birth to one month) exposure effects[9]. The graphs show how the estimate and 95 percent confidence intervals for each estimated exposure effect change as each covariate is dropped from the model. The graphs corresponding to each outcome measure are shown in the same order of appearance as they appear in each of the exhibits in Section 9. Each graph is read from left to right as in the following example.

The top panel of Exhibit D.4.1.1 shows the extent to which the estimate and 95 percent confidence interval for *PreNatThimer* changed as each covariate was dropped from sequential models. The first model fitted to this outcome included all covariates. (See Exhibit 7.4.1 of Volume I of the Technical Report for descriptions of all covariates.) The covariate with the largest p-value, was identified. If the p-value was greater than 0.20 the variable was dropped from the subsequent model. In this example, it was the indicator variable for whether the child's mother had ever had a diagnosis of attention deficit hyperactivity disorder (*MatADHD*). If dropping the variable resulted in a change in the parameter estimates of either *PreNatThimer* or *Exp07mos* (cumulative exposure birth to 7 months) that was more than 10 percent, relative to the estimates from the full model, then the covariate was retained in subsequent models. Otherwise, it was dropped from the subsequent models[10]. In this example, the *MatADHD* variable did not satisfy either the p-value criterion or the change in estimate criterion, and was therefore dropped.

The symbol at the far left of the graph shows the parameter estimate and 95 percent confidence interval for *PreNatThimer* from a model in which *MatADHD* had been dropped, but all other covariates remained. The symbol one space to the right shows the estimate and confidence interval after the ADHD stimulant variable (*ADHDStimulant*) had been dropped[11]. Moving left to right shows the estimate and 95 percent confidence interval as each successive covariate is dropped. The vertical dotted line indicates the break between the dropped variables and the variables that were included in the final model. In this example, the *ChildMedHist_1* variable, and all the covariates shown to the right of *ChildMedHist_1* were retained in the final model. Moving from left to right from this point shows what would have happened to the estimate for *PreNatThimer* if those variables had not been included as covariates.

The variable *Site* (coded as three dummies representing the four HMOs) and all variables shown to the right of the *Site* variable (except computer experience) were included in all models. These were the a priori selected variables, as described in Section 8. It is

[8] These results are from the main effect model for *PreNatThimer* and *Exp07mos* exposures. See Model (1) specified in Section 9.2.2.2 for details.
[9] These results are from the main effect model for *PreNatThimer, HepB,* and *Exp17mos* exposures. See Model (2) specified in Section 9.2.2.2 for details.
[10] For additional information on the decision rules, see Section 8.2 of Volume I of the Technical Report.
[11] For descriptions of all covariates, see Exhibit 7.4.1, in Volume I of the Technical Report.

interesting to note that the inclusion or omission of any of the variables to the **left** of *Site* did not have dramatic effect on the estimate or the precision of the estimate of the *PreNatThimer* effect. Looking across the graphs of all 42 outcome variables, this generally held true. The inclusion or exclusion of the variables that were tested for inclusion in the models tended to not have dramatic effects on the estimates. Exclusion of the *Site* variable, and some of the other a priori selected variables would, however, result in meaningful differences. The variable that appeared to be especially important was the measure of maternal IQ (*MomIQ*). In this example, omission of the *MomIQ* covariate would have changed the estimate of the *PreNatThimer* effect considerably, from barely significant to clearly significant, with higher exposure being related to better scores on the Boston Naming Test.

The effects of dropping covariates on the estimates of *HepB* and *Exp07mos* effects were similar to those described for *PreNatThimer*. In general, inclusion or exclusion of covariates shown to the **left** of *Site* did not have dramatic effects on the estimates or the precision of *HepB* and *Exp07mos.* But inclusion or exclusion of site or those to the right often did have dramatic effects on the estimates.

The effects of inclusion or exclusion of a covariate on the precision (95 percent confidence interval) of exposure effects were subtle. It is difficult to distinguish differences in the widths of the 95 percent confidence intervals from the graphs. However, it is interesting to note that examination of print-outs of numerical values indicated that the rules for inclusion/exclusion of covariates generally had the anticipated effects on precision. That is, when the decision rules indicated a covariate should be dropped, then in the vast majority of cases, dropping the variable resulted in a small increase in precision of the exposure estimate. Likewise, when the decision rules indicated a covariate should be retained, then in the vast majority of cases, dropping the variable resulted in a small decrease in the precision of the exposure estimate.

We note that we were not able to fit models to the tics and stuttering outcomes that simultaneously included the entire list of covariates. These outcomes were fit to logistic regression models, and we encountered problems with quasi-separation due to zero counts in some cells defined by the covariates. In those models a mix of forward and backward selection strategies, in concert with the change-in-estimate criteria and a priori selection criteria, resulted in evaluation of all covariates for inclusion.

4.1. PreNatThimer

Exhibit D.4.1.1. Boston Naming Test
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

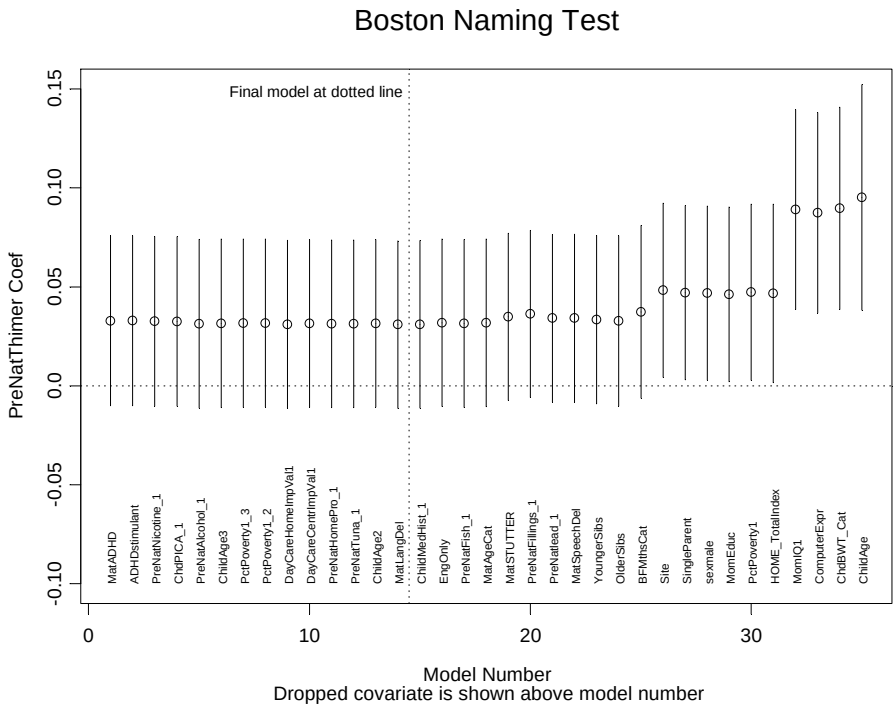


Exhibit D.4.1.2. NEPSY Speeded Naming
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

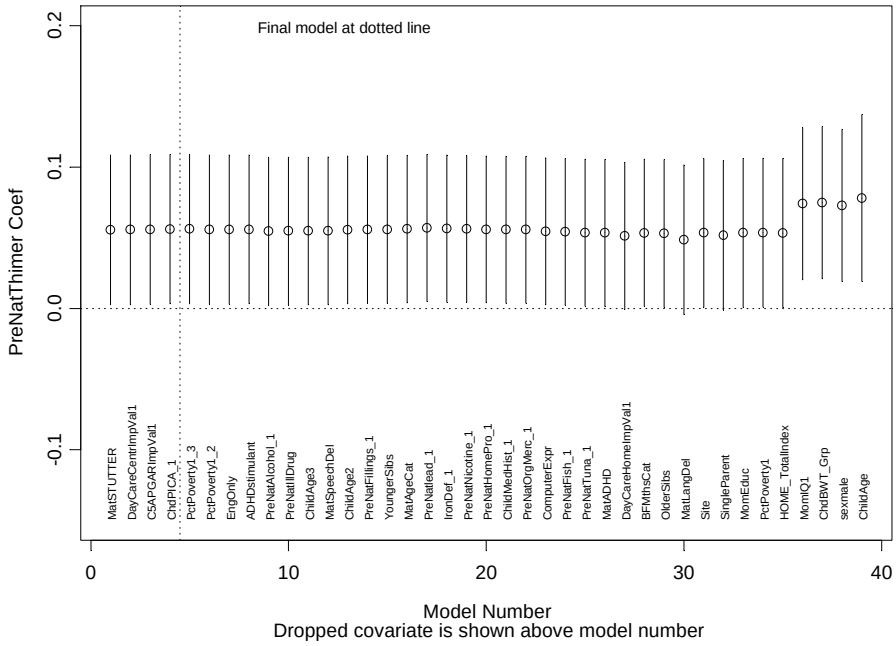


Exhibit D.4.1.3. NEPSY Comprehension of Instructions
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

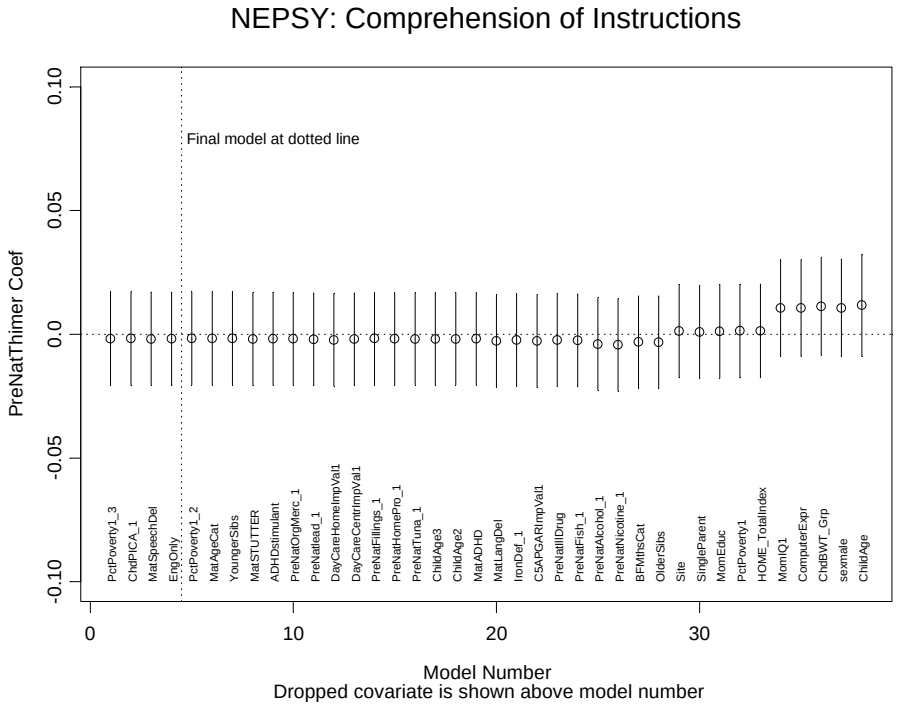


Exhibit D.4.1.4. CELF Formulated Sentences
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

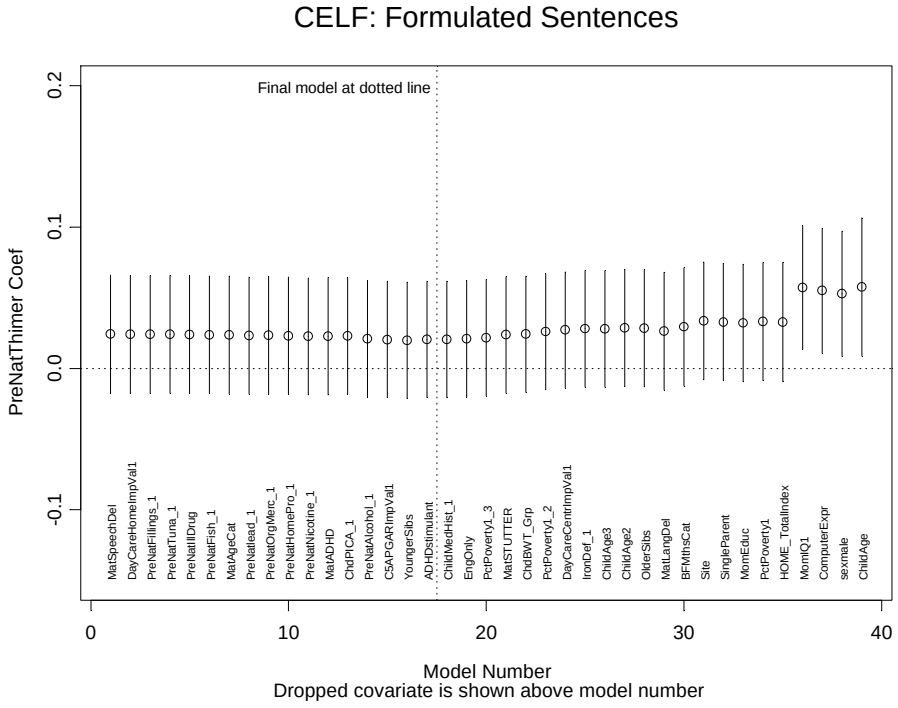


Exhibit D.4.1.5. CELF Recalling Sentences
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

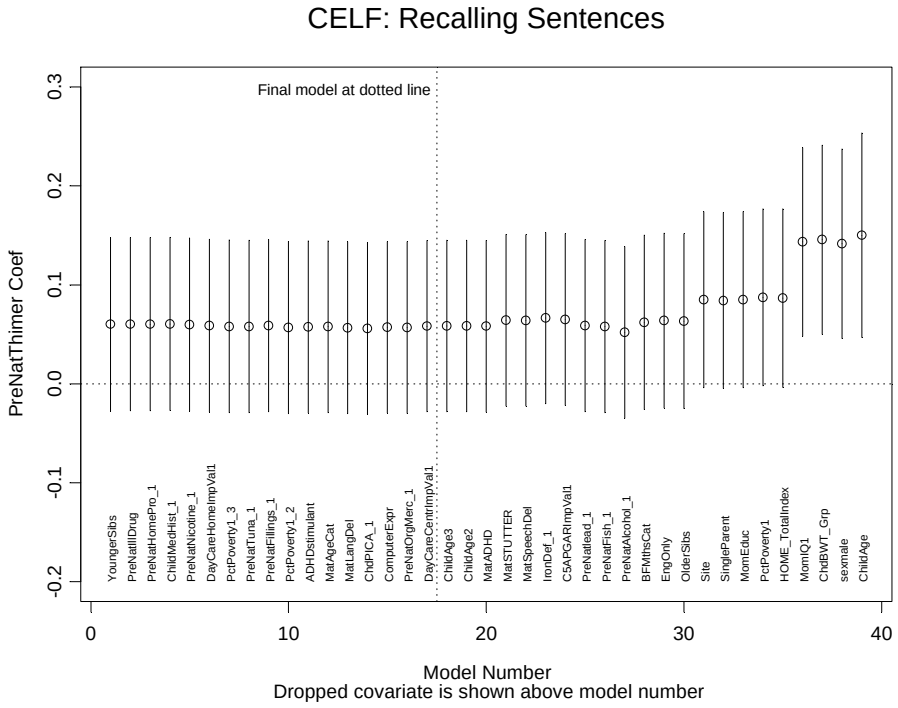


Exhibit D.4.1.6. GFTA Articulation
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

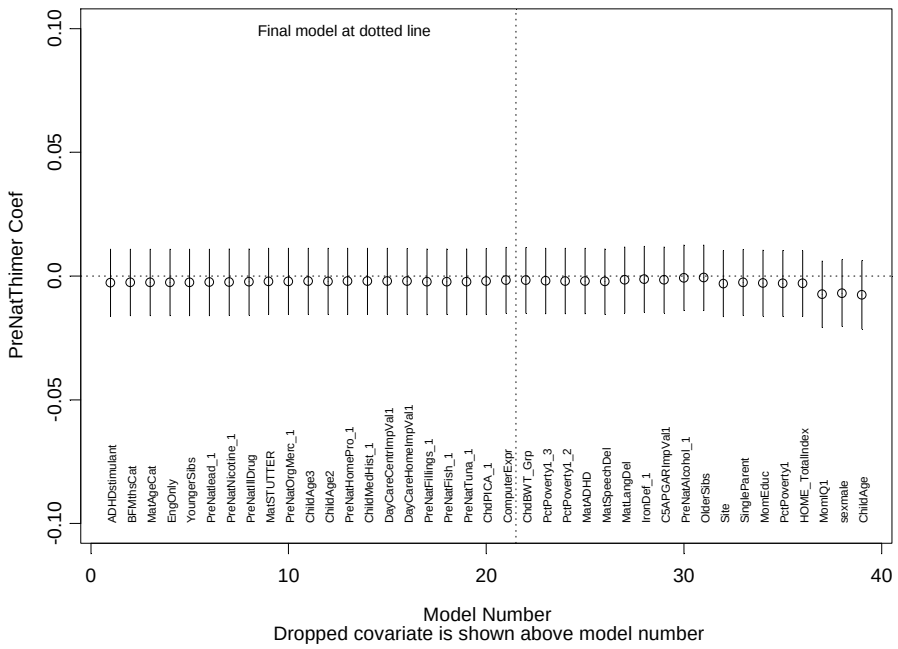


Exhibit D.4.1.7. Stuttering Assessor Rating
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

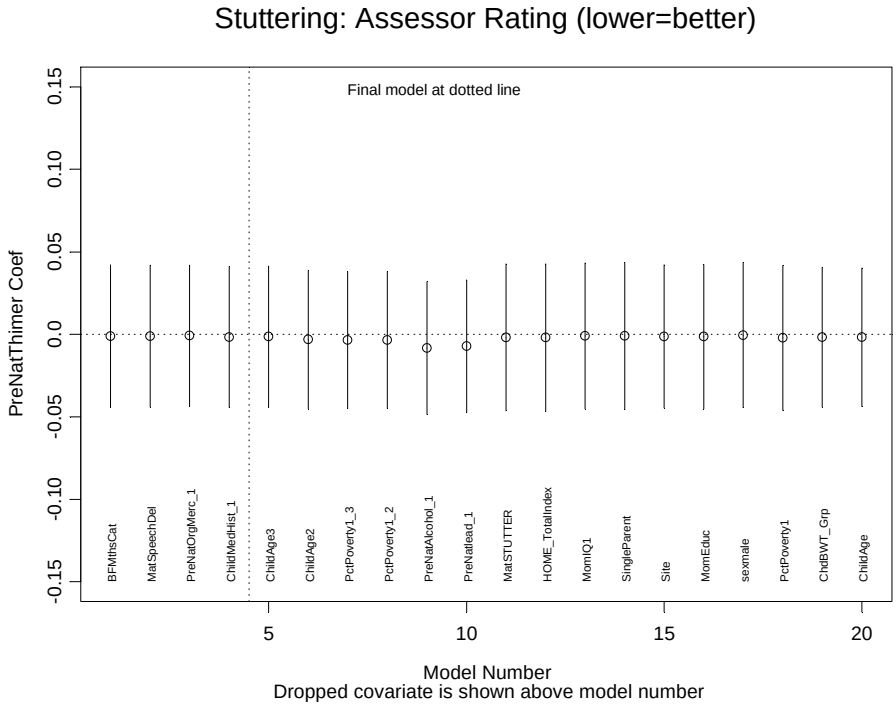


Exhibit D.4.1.8. Stuttering Parent Rating
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

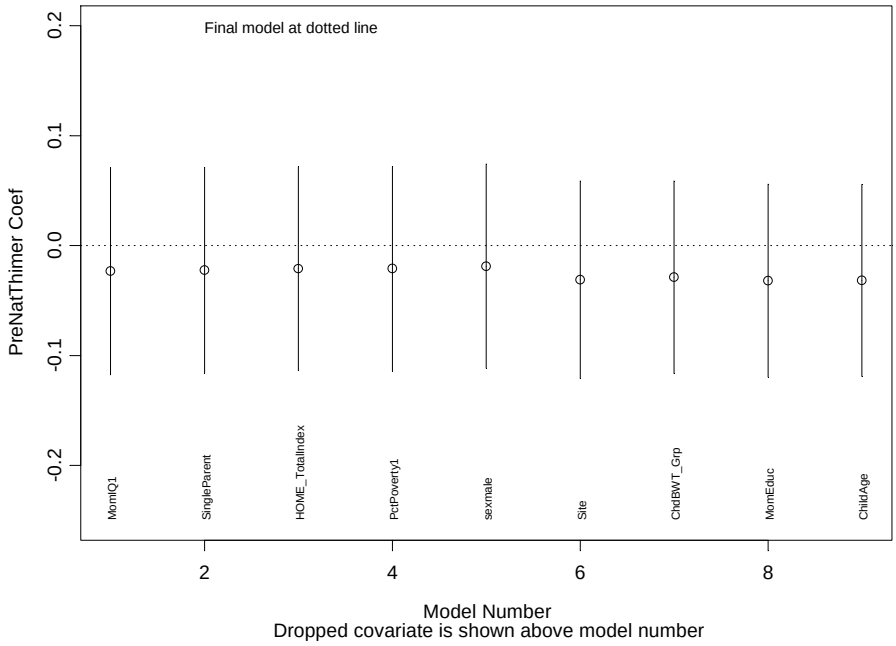


Exhibit D.4.1.9. Stuttering Teacher Rating
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

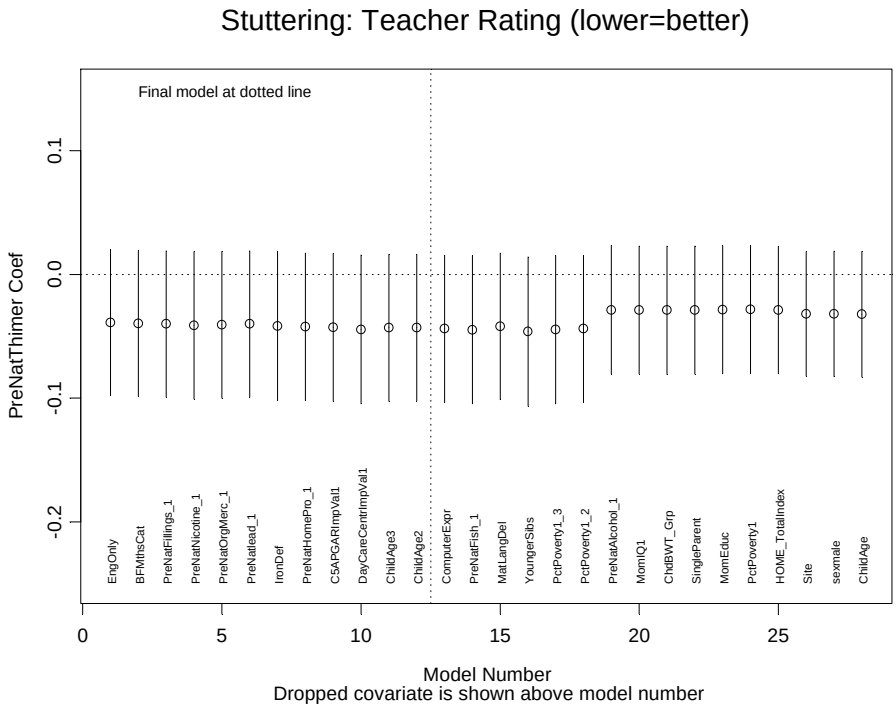


Exhibit D.4.1.10. CVLT-C: Free Recall, No Delay
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

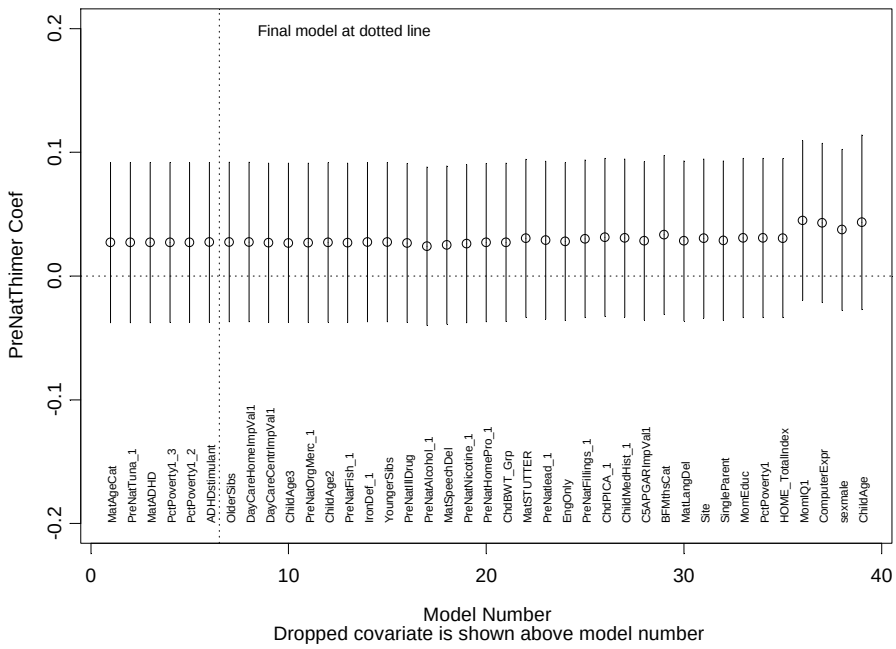


Exhibit D.4.1.11. CVLT-C: Free Recall, Short Delay
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

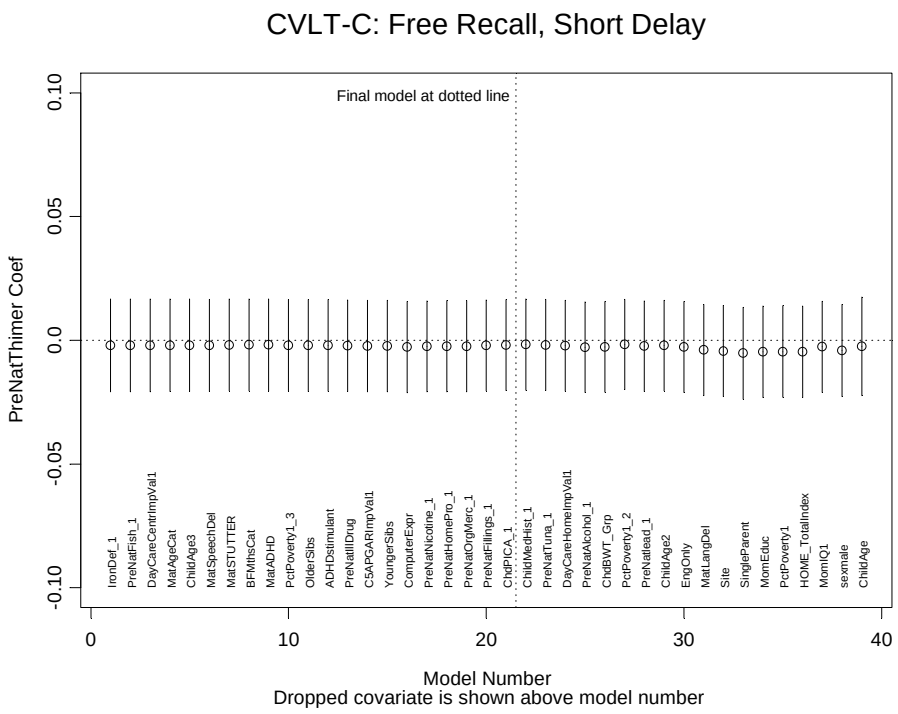


Exhibit D.4.1.12. CVLT-C: Cued Recall, Short Delay
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

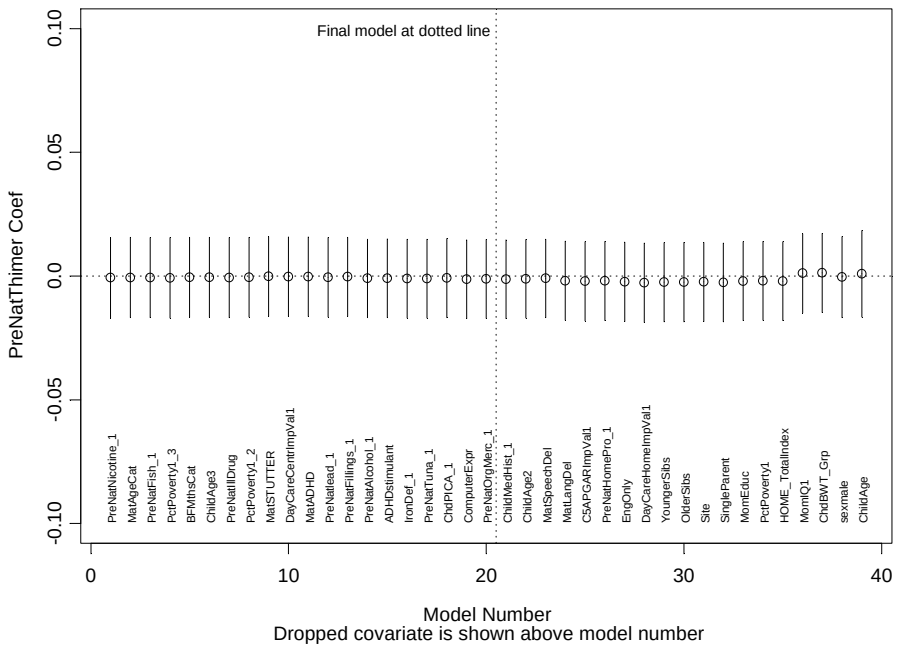


Exhibit D.4.1.13. CVLT-C: Free Recall, Long Delay
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

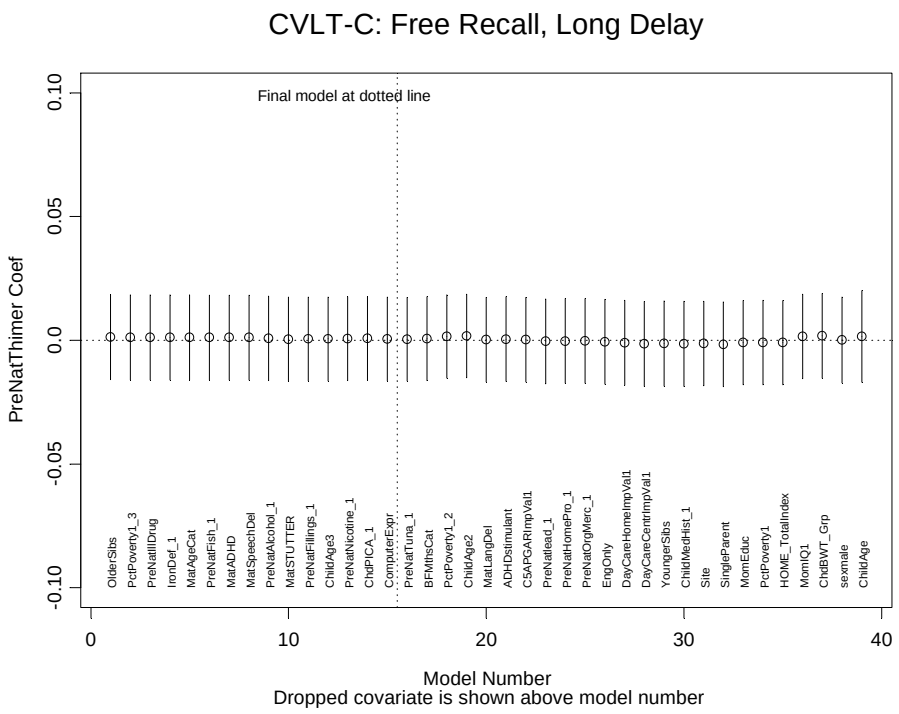


Exhibit D.4.1.14. CVLT-C: Cued Recall, Long Delay
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

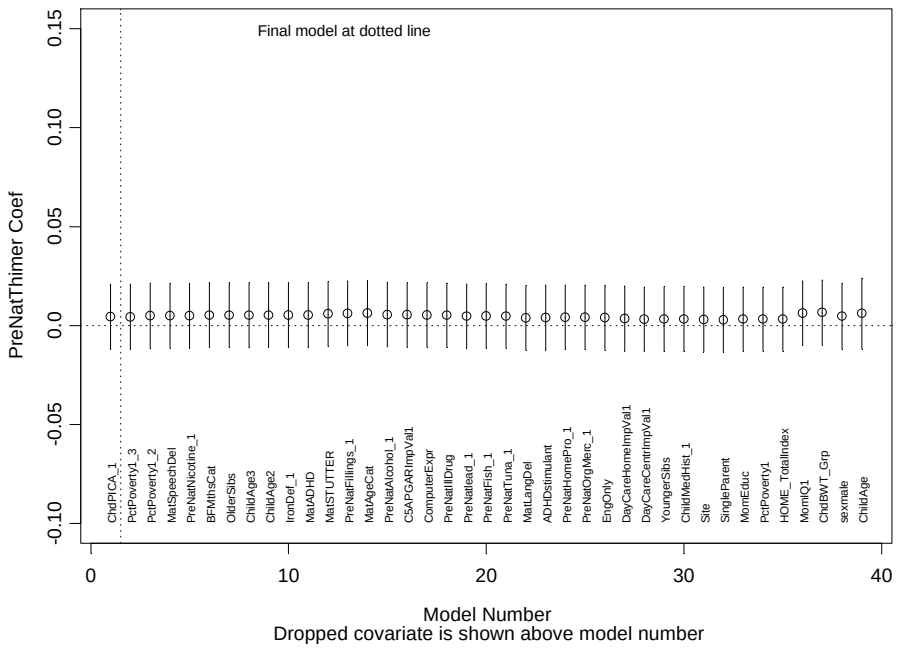


Exhibit D.4.1.15. CMS Stories 1: Immediate Recall
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

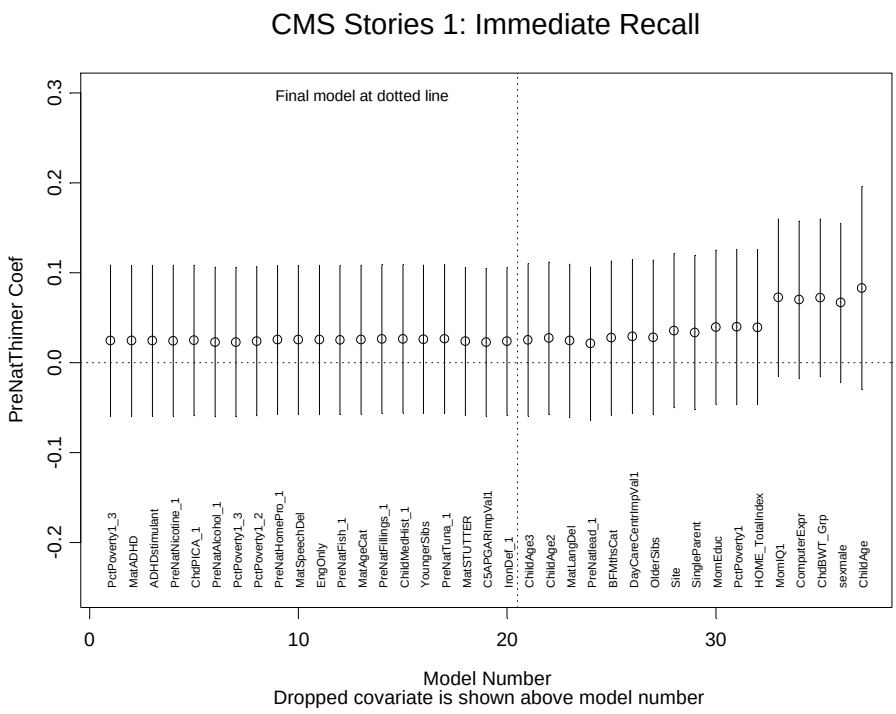


Exhibit D.4.1.16. CMS Stories 2: Delayed Recall
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

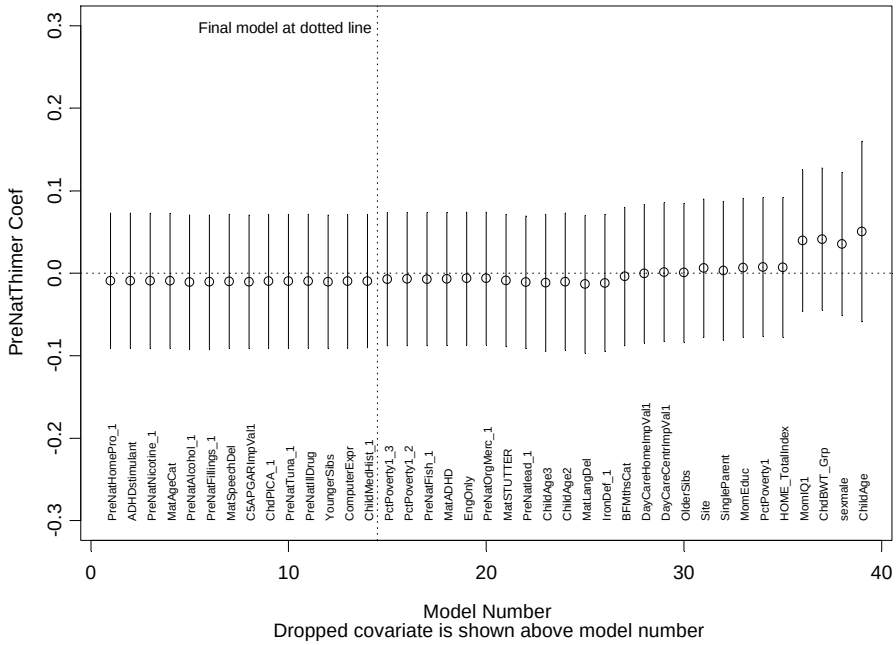


Exhibit D.4.1.17. WJIII: Letter- Word Identification
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

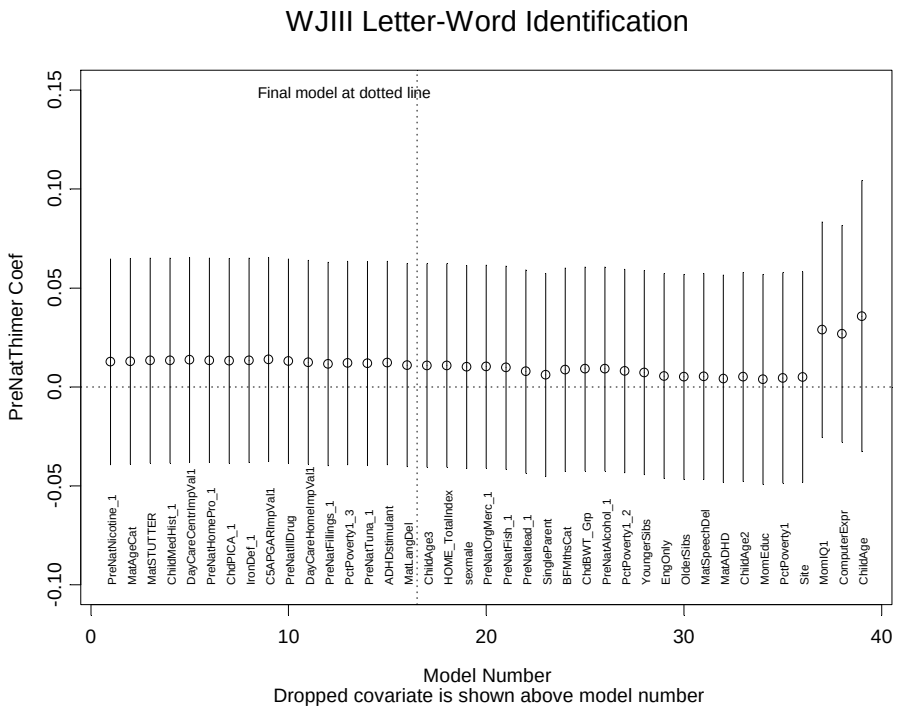
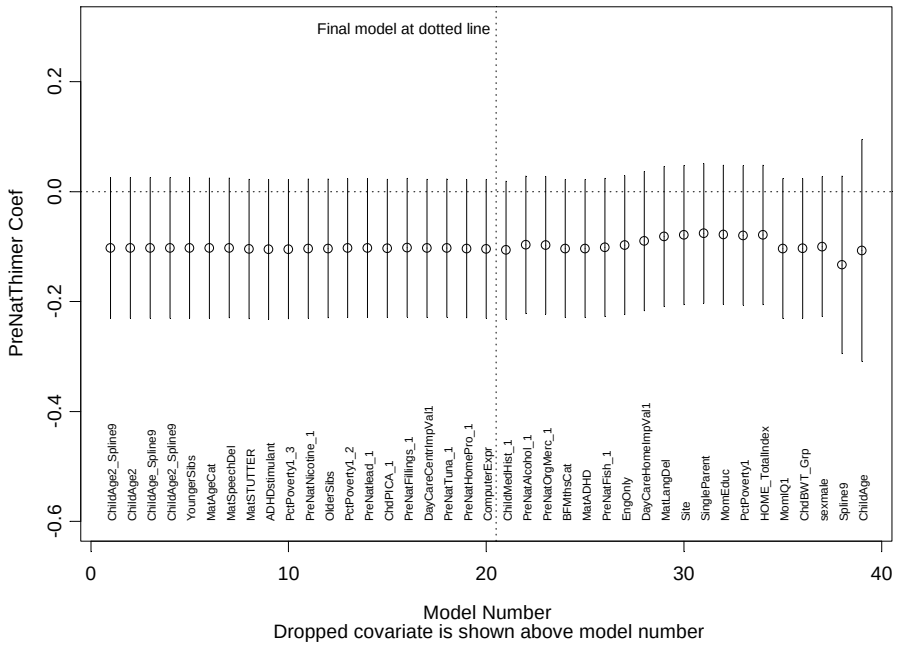


Exhibit D.4.1.18. Grooved Pegboard: Dominant Hand (lower = better)
Prenatal: Change in Estimate and Precision as Covariates Are Dropped



x

Exhibit D.4.1.19. Grooved Pegboard: Non-dom Hand (lower = better)
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

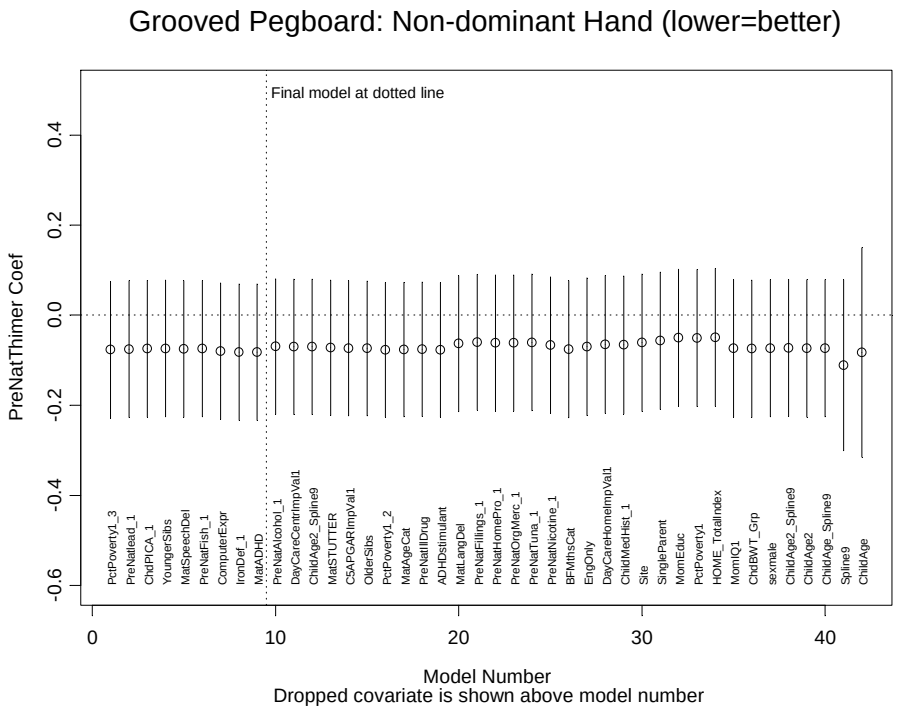


Exhibit D.4.1.20. Finger Tapping: Dominant Hand
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

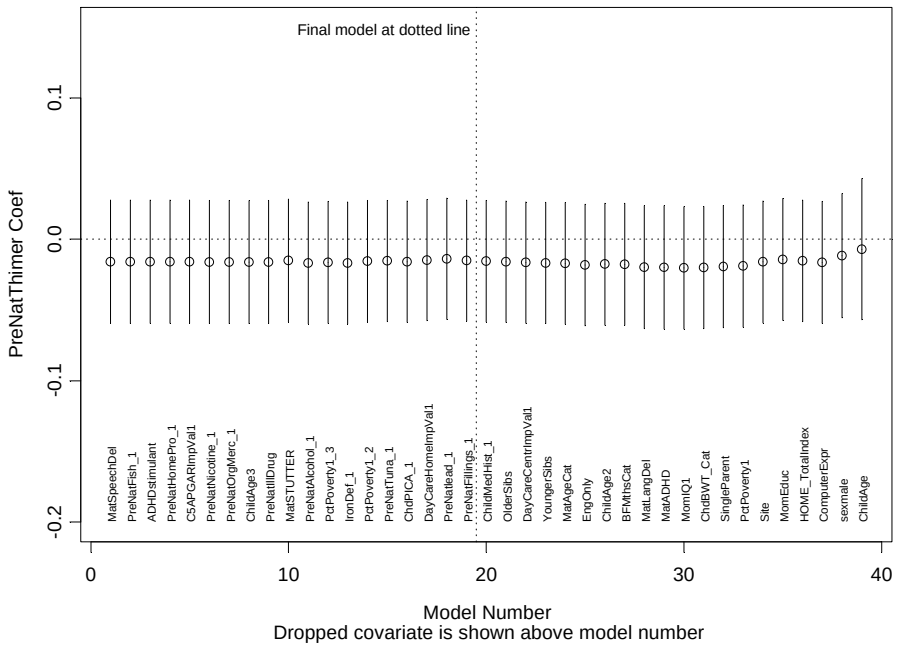


Exhibit D.4.1.21. Finger Tapping: Non-dominant Hand
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

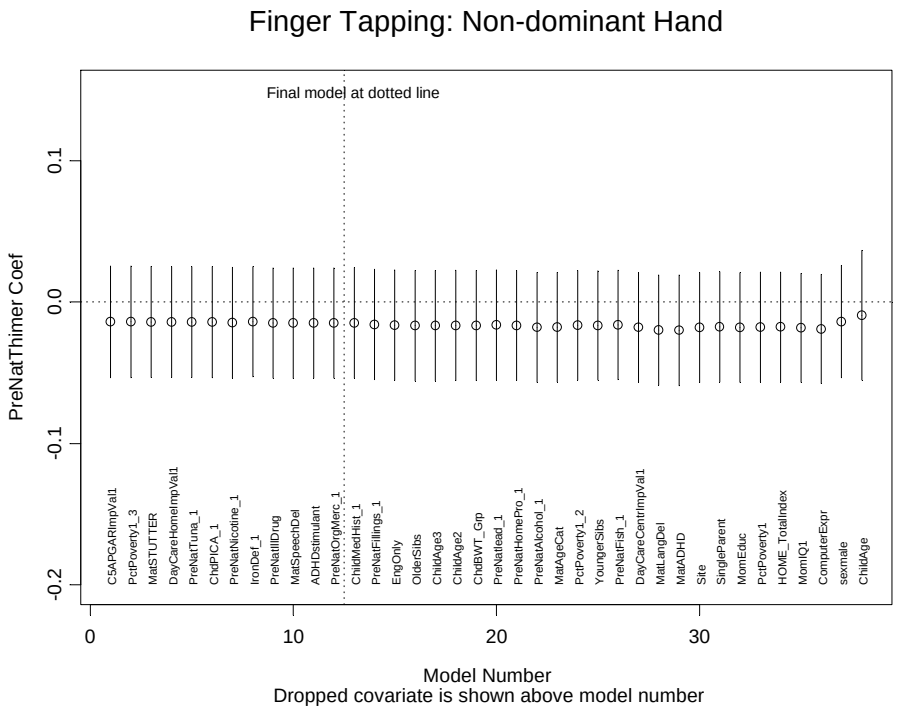


Exhibit D.4.1.22. Stanford Binet: Copying
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

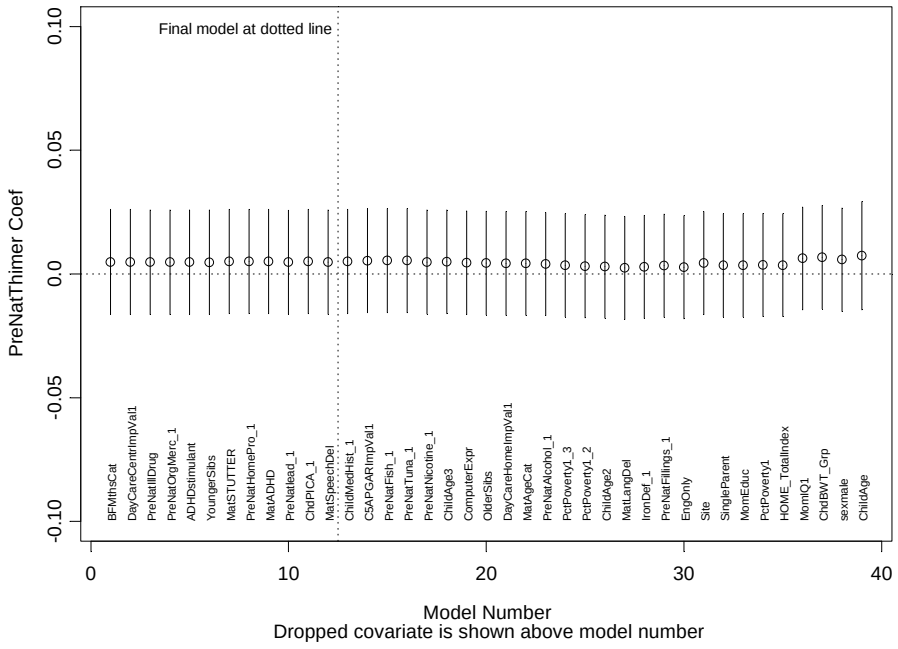


Exhibit D.4.1.23. GDS Vigilance Task: Correct Responses
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

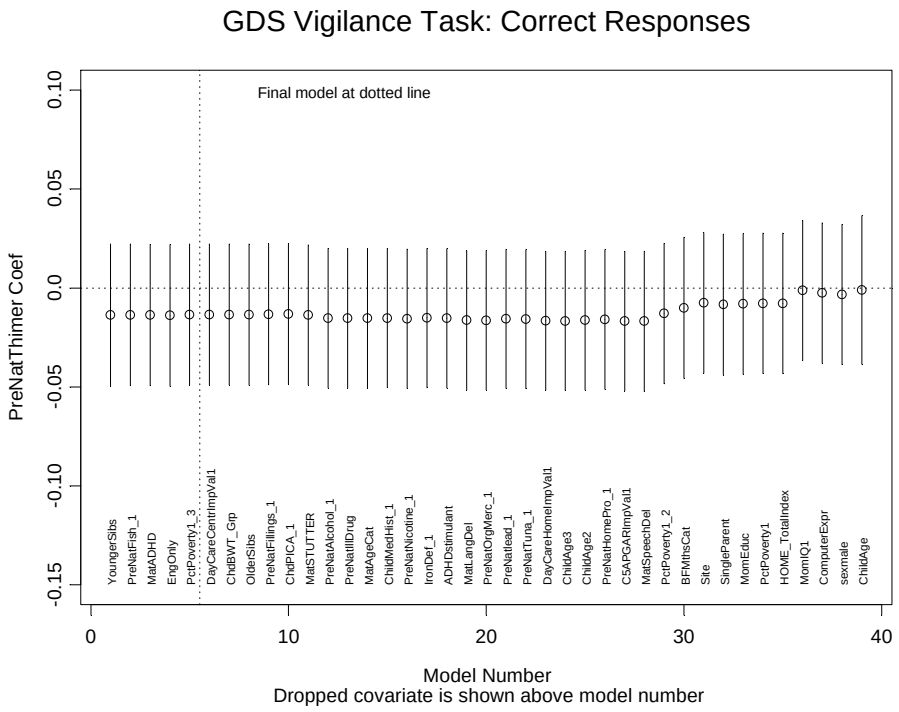


Exhibit D.4.1.24. GDS Vigilance Task: Errors (lower=better)
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

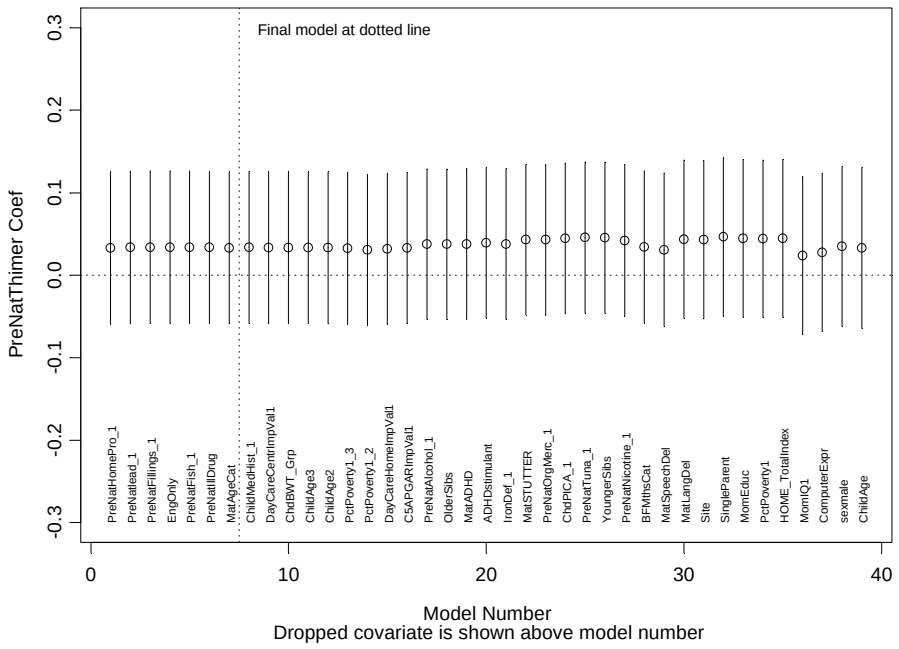


Exhibit D.4.1.25. WISC III: Digit Span, Forward Recall
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

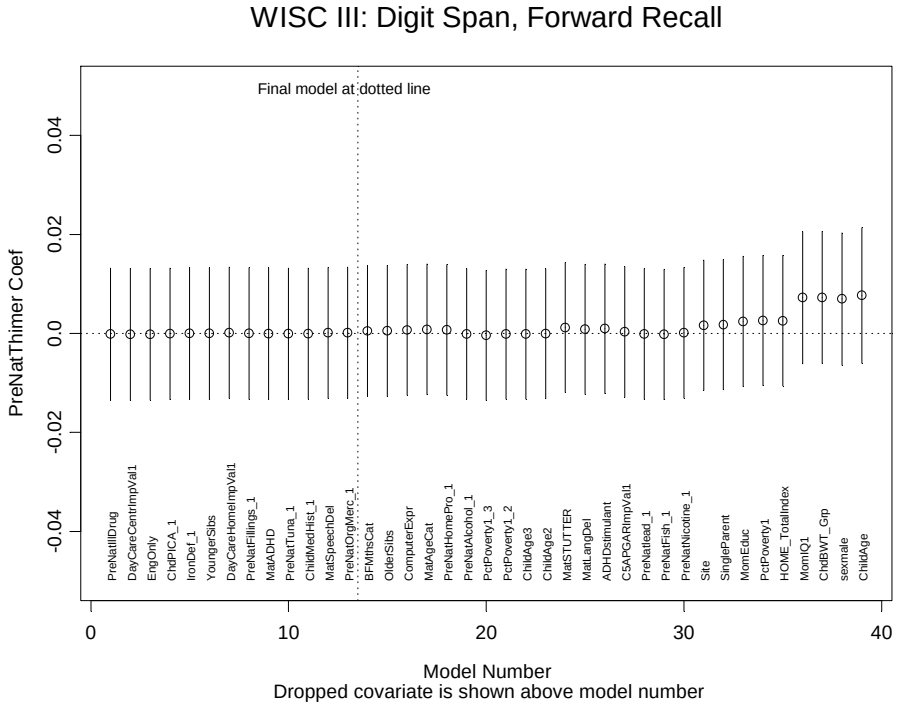


Exhibit D.4.1.26. WISC III: Digit Span, Backward Recall
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

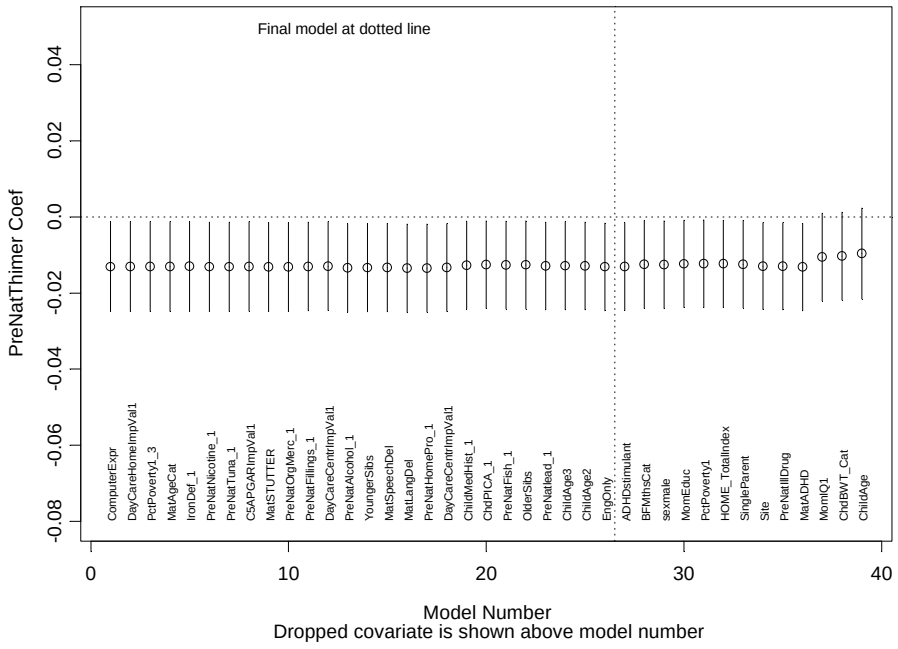


Exhibit D.4.1.27. WISC III: Digit Span, Combined
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

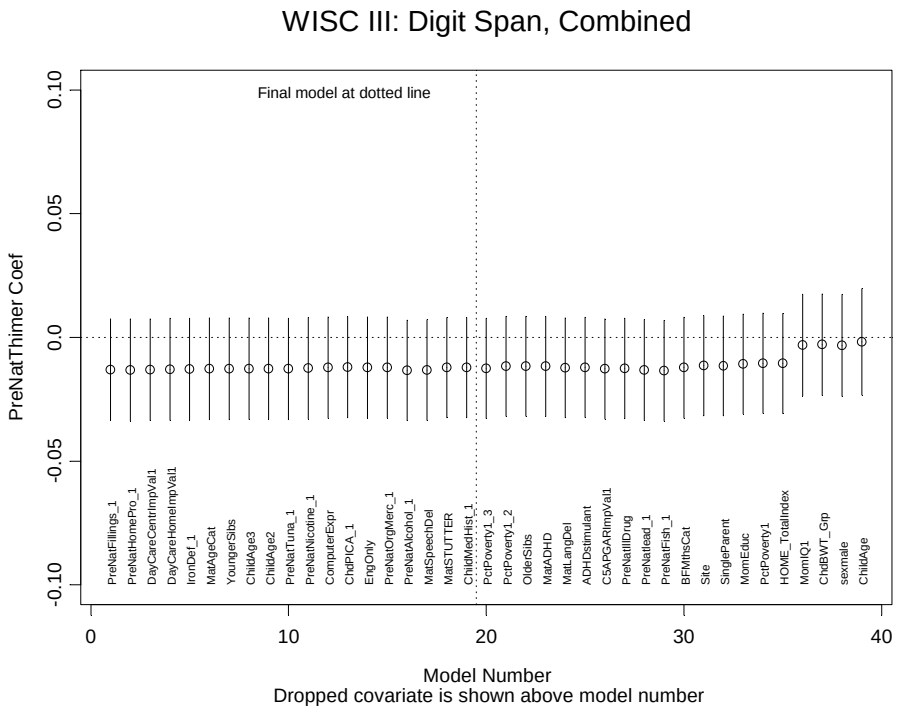


Exhibit D.4.1.28. BRIEF Parent Rating: Metacognition (lower = better)
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

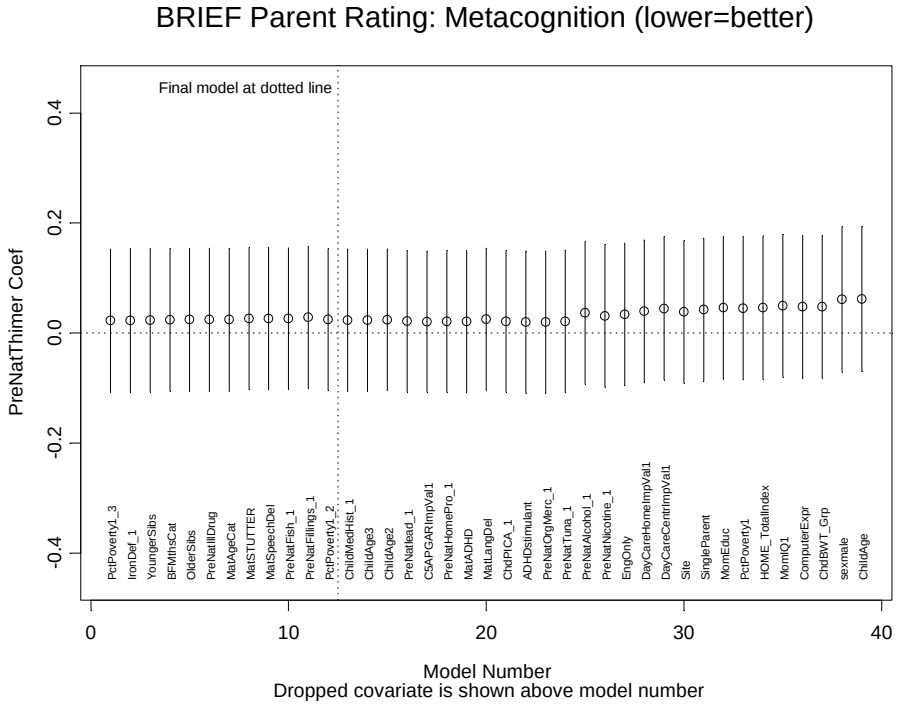


Exhibit D.4.1.29. BRIEF Teacher Rating: Metacognition (lower = better)
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

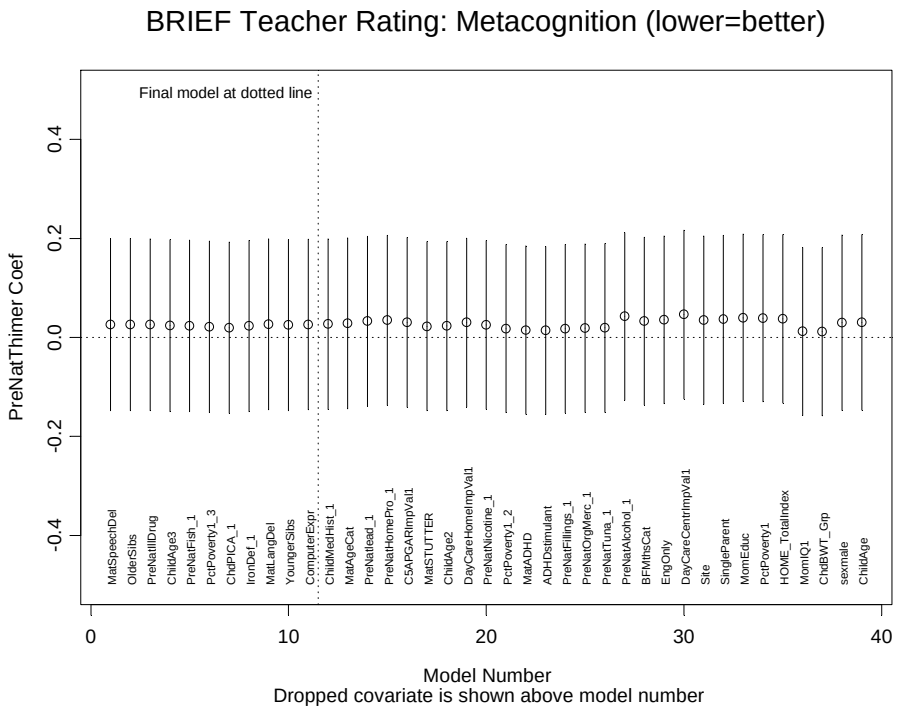


Exhibit D.4.1.30. CRS-R: Parent Rating: Hyperactive/Impulsive (lower = better)
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

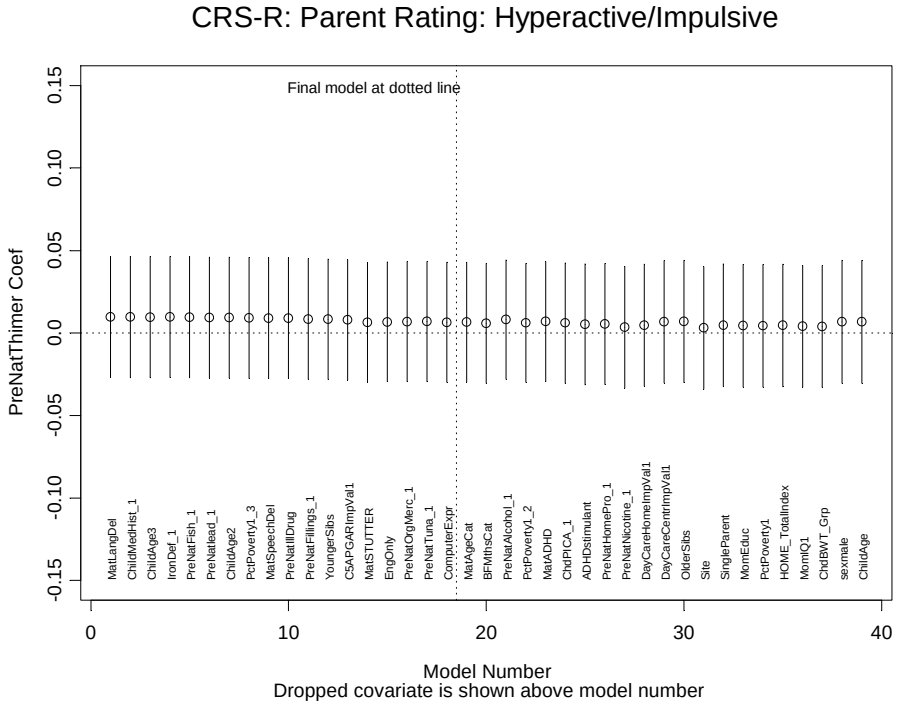


Exhibit D.4.1.31. CRS-R: Teacher Rating: Hyperactive/Impulsive (lower = better)
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

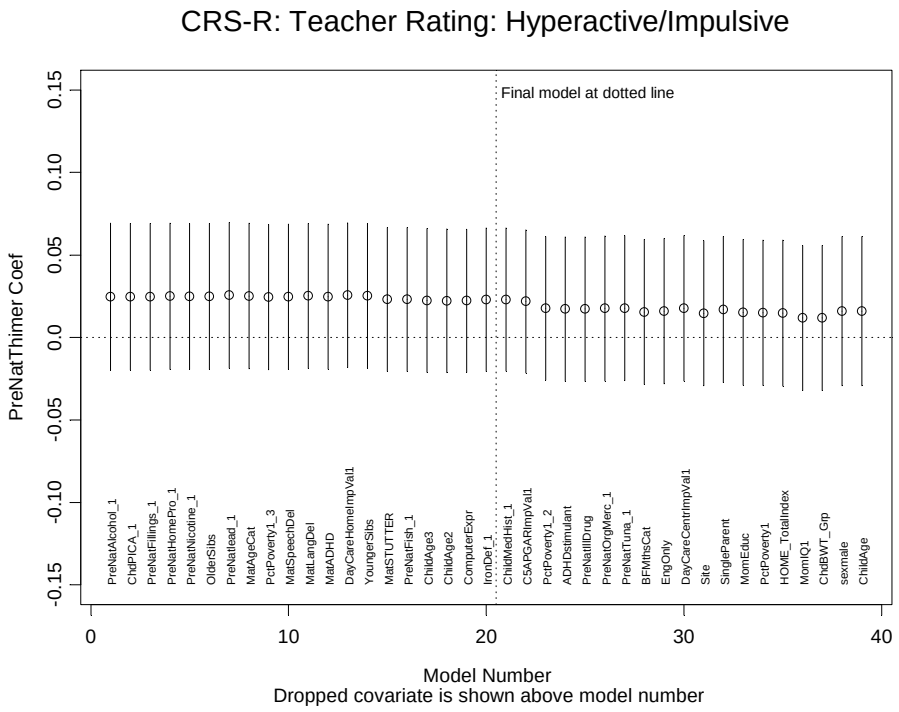


Exhibit D.4.1.32. CRS-R: Parent Rating: Inattentive (lower = better)
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

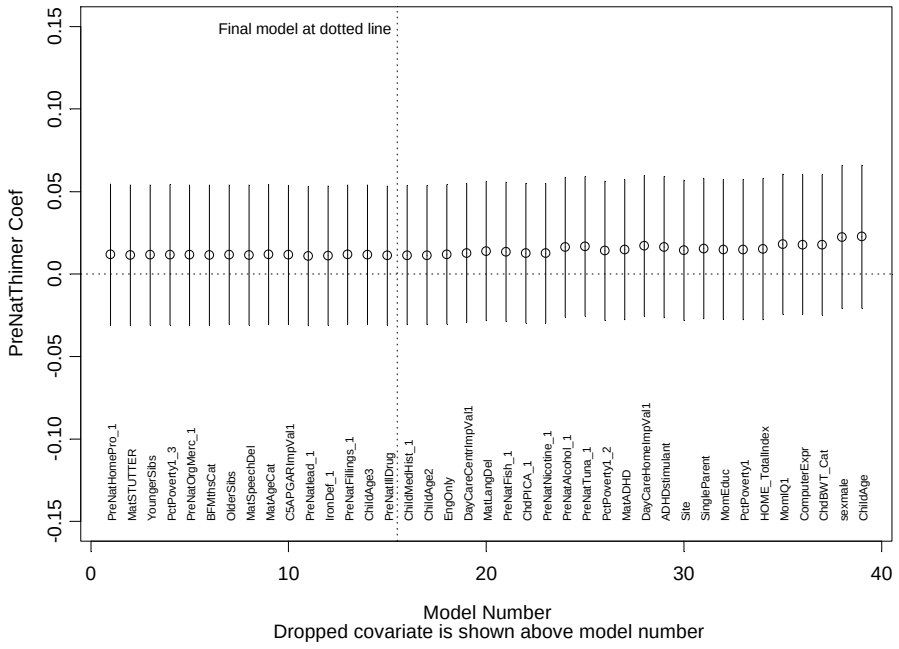


Exhibit D.4.1.33. CRS-R: Teacher Rating: Inattentive (lower = better)
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

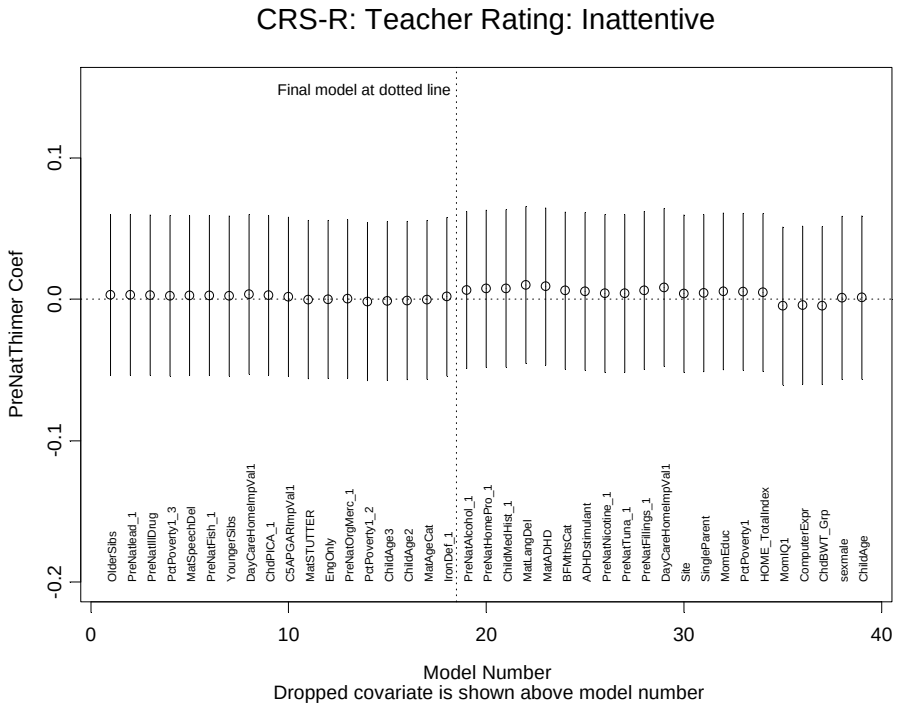


Exhibit D.4.1.34. BRIEF Parent Rating: Behavior Regulation (lower = better)
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

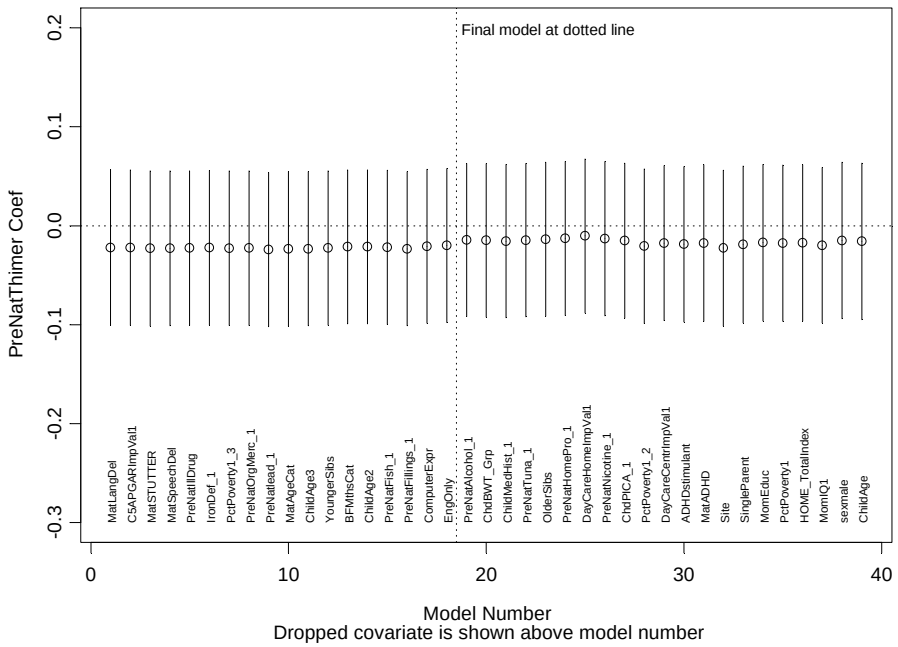


Exhibit D.4.1.35. BRIEF Teacher Rating: Behavior Regulation (lower = better)
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

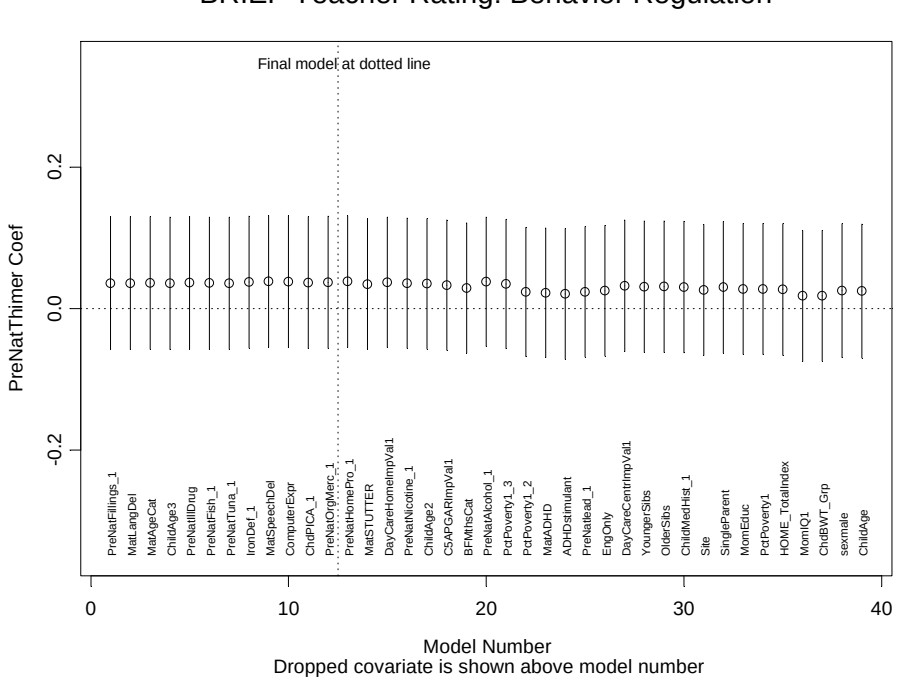


Exhibit D.4.1.36. Motor tics (current): Assessor Rating (lower = better)
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

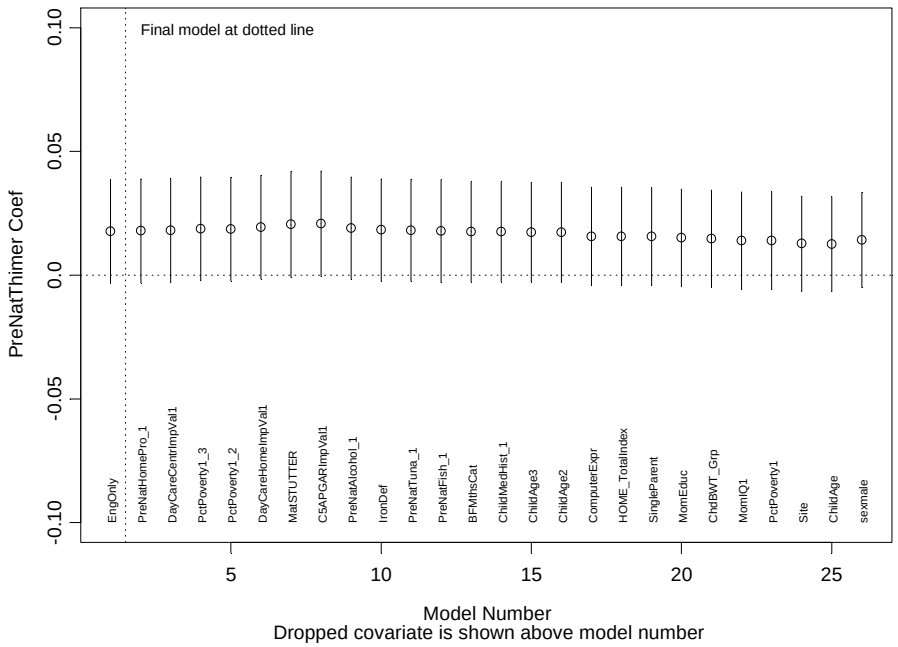


Exhibit D.4.1.37. Phonics tics (current): Assessor Rating (lower = better)
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

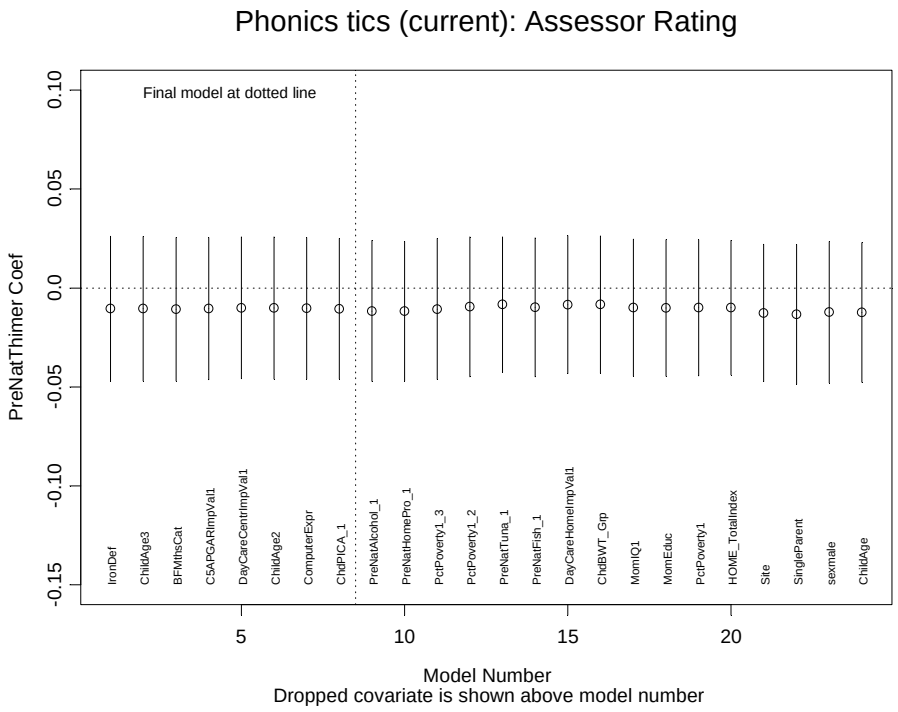


Exhibit D.4.1.38. Motor tics (current): Parent Rating (lower = better)
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

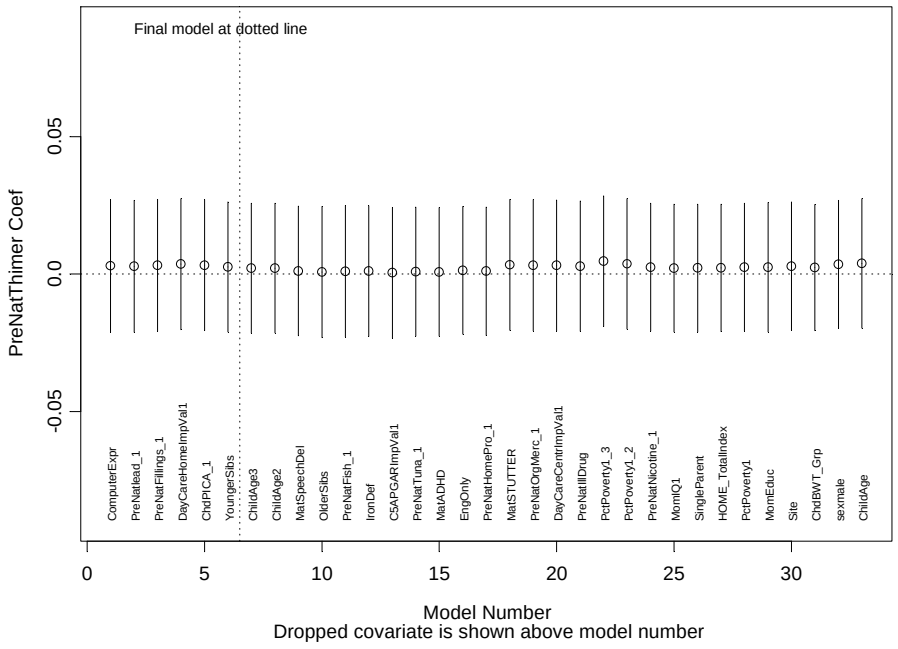


Exhibit D.4.1.39. Phonics tics (current): Parent Rating (lower = better)
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

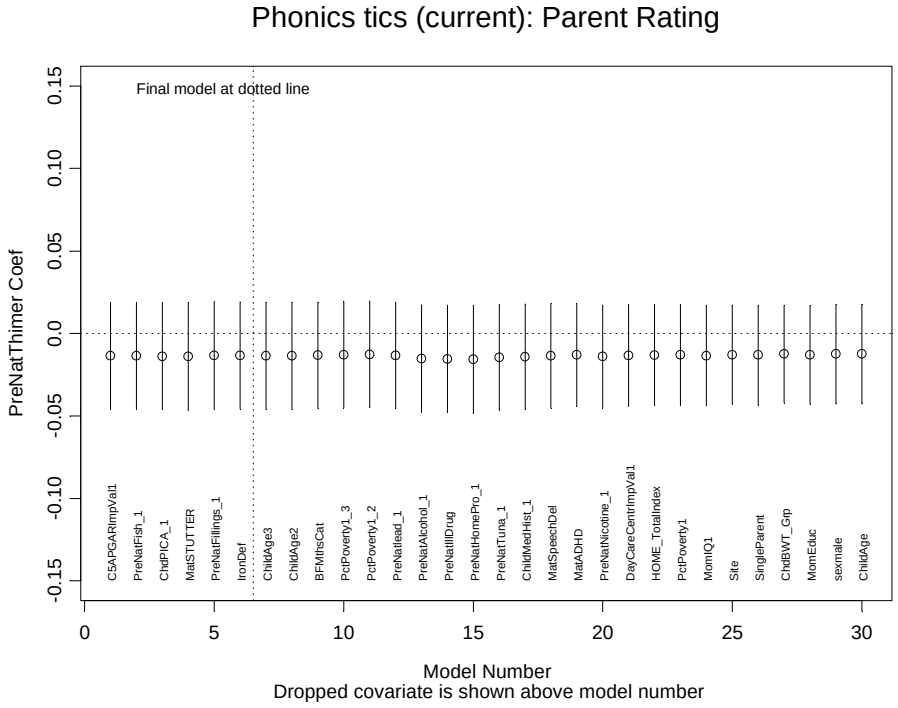


Exhibit D.4.1.40. WASI Verbal IQ
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

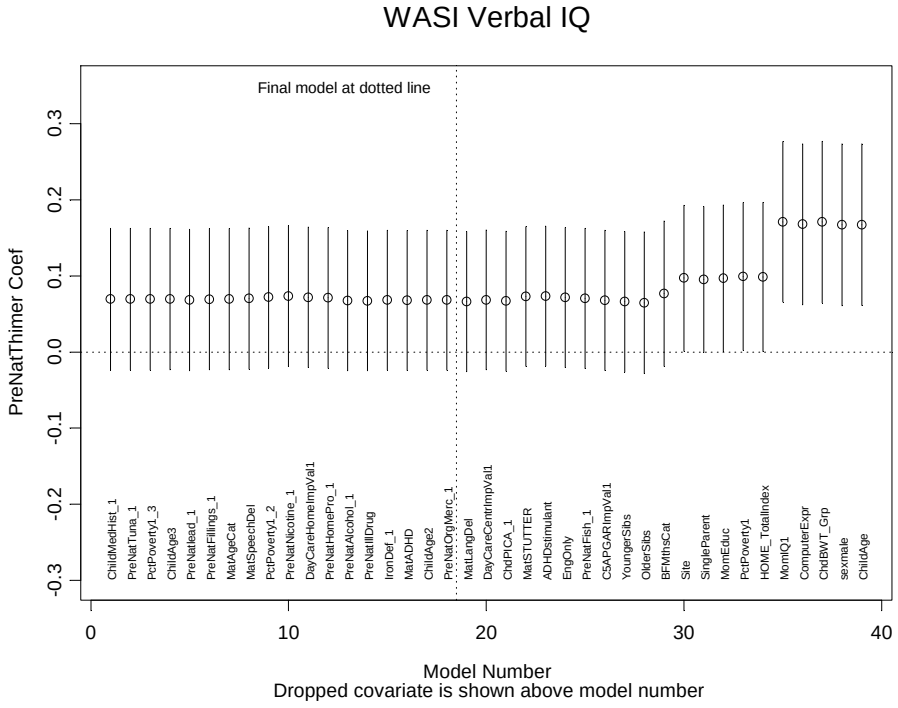


Exhibit D.4.1.41. WASI Performance IQ
Prenatal: Change in Estimate and Precision as Covariates Are Dropped

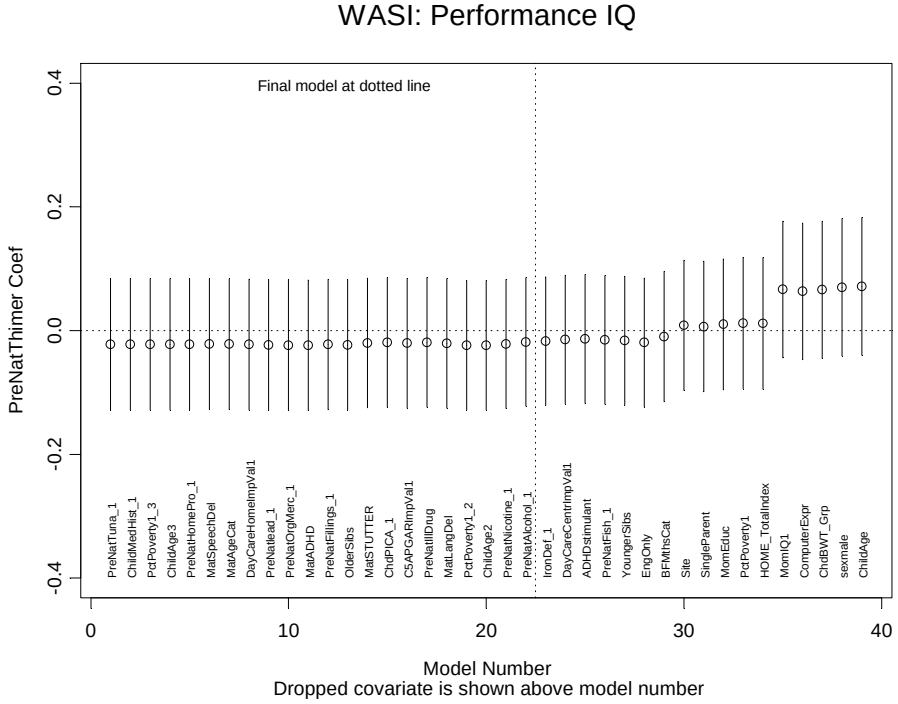
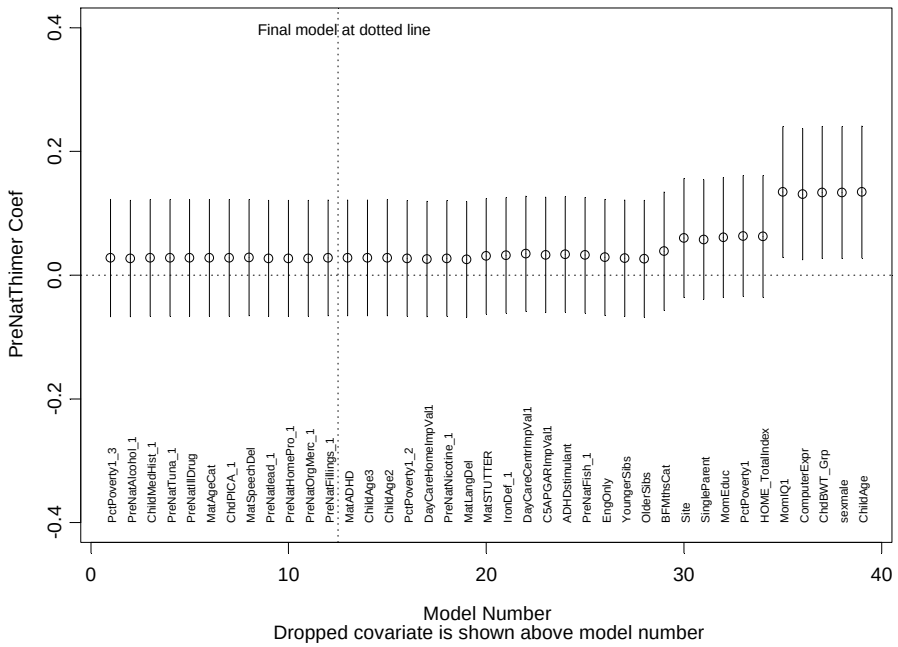


Exhibit D.4.1.42. WASI Full Scale IQ
Prenatal: Change in Estimate and Precision as Covariates Are Dropped



4.2. Exp07mos

Exhibit D.4.2.1. Boston Naming Tests
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

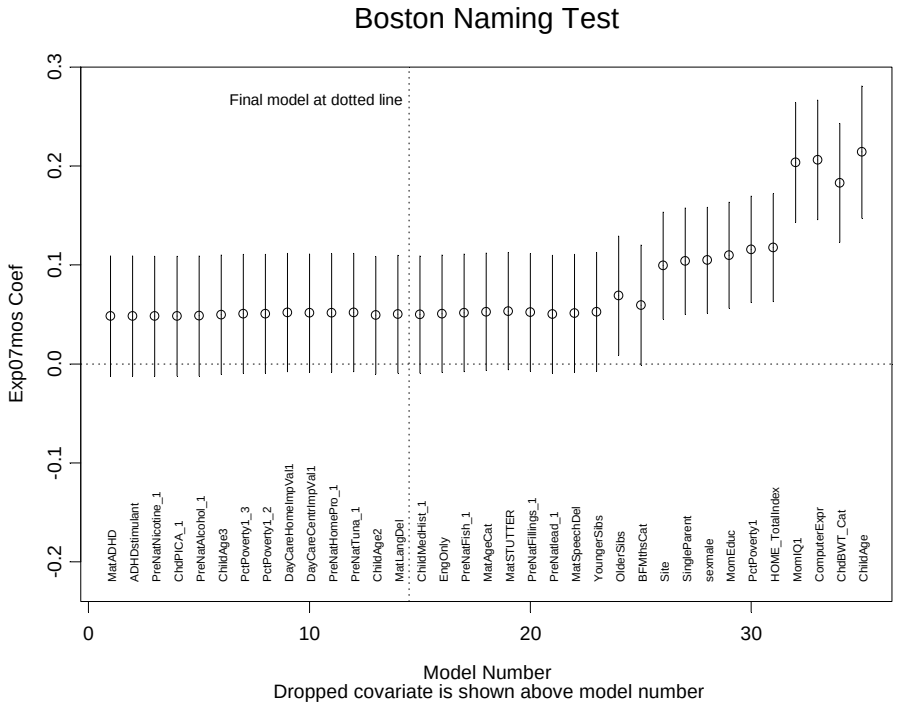


Exhibit D.4.2.2. NEPSY Speeded Naming
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

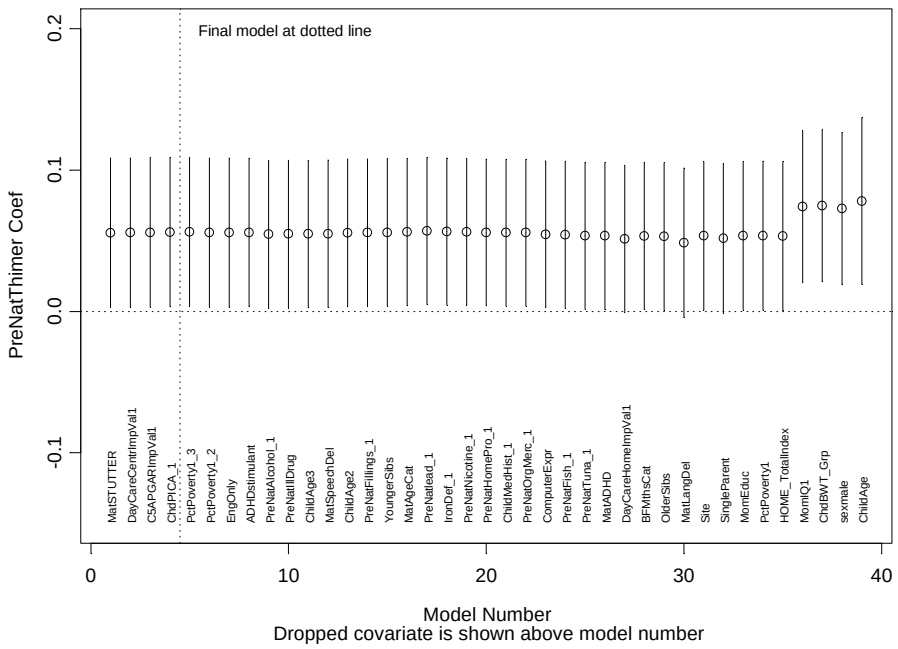


Exhibit D.4.2.3. NEPSY: Comprehension of Instructions
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

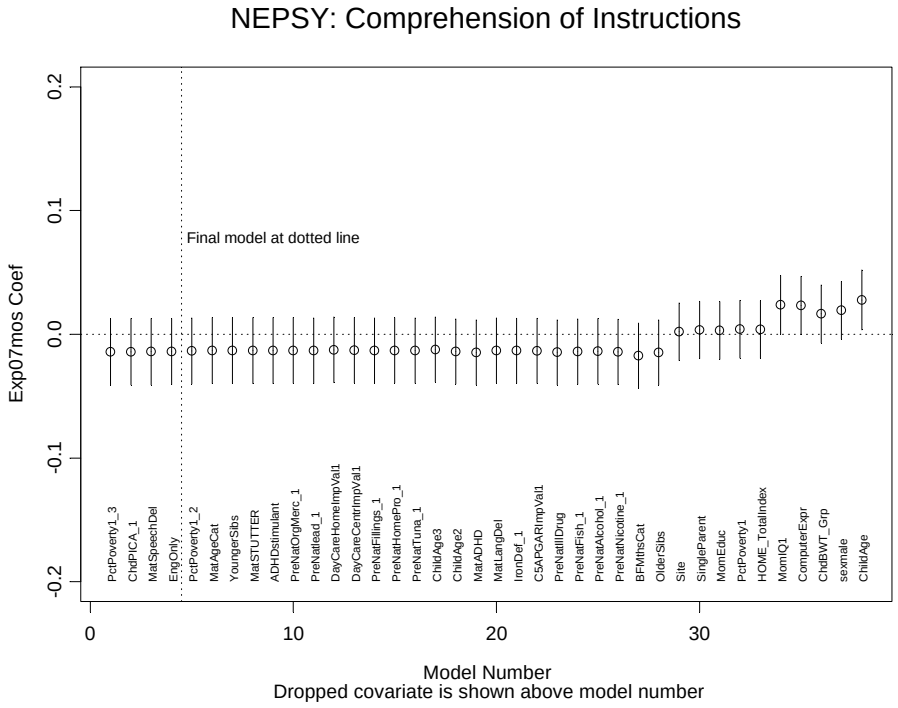


Exhibit D.4.2.4. CELF Formulated Sentences
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

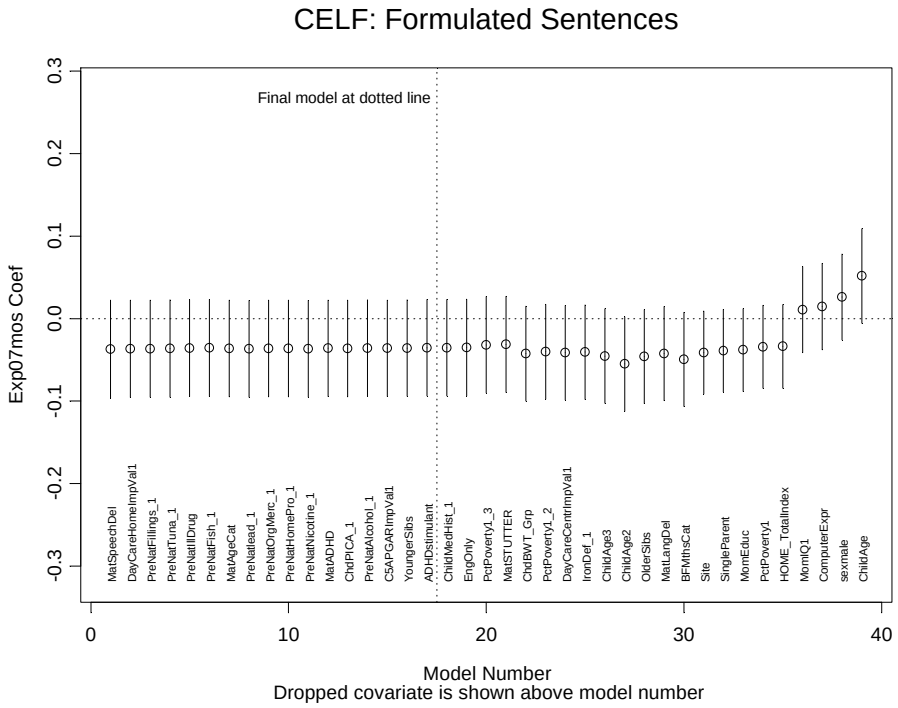


Exhibit D.4.2.5. CELF Recalling Sentences
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

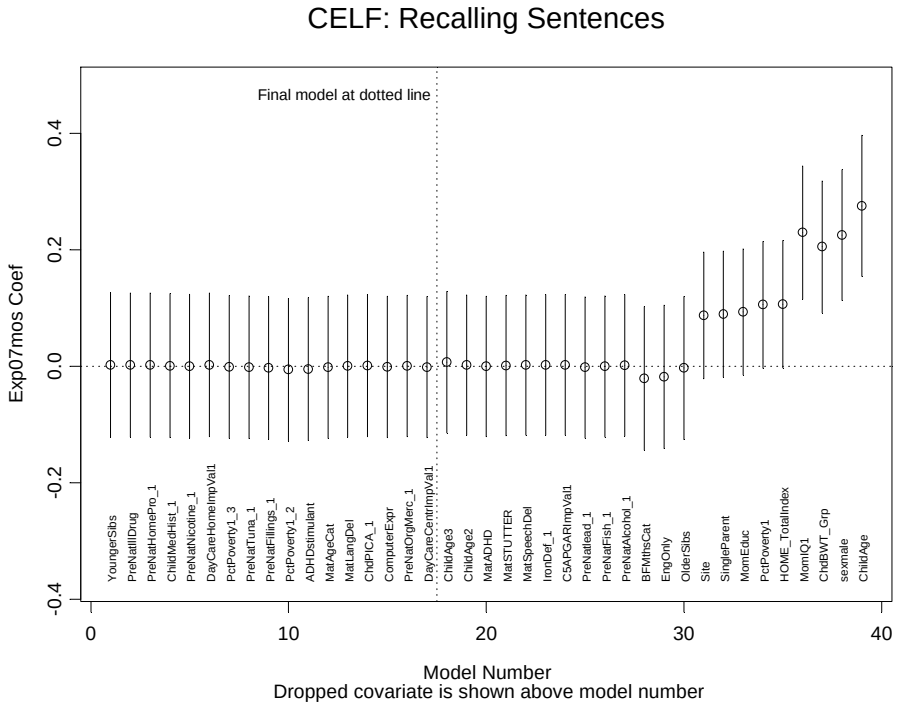


Exhibit D.4.2.6. GFTA Articulation
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

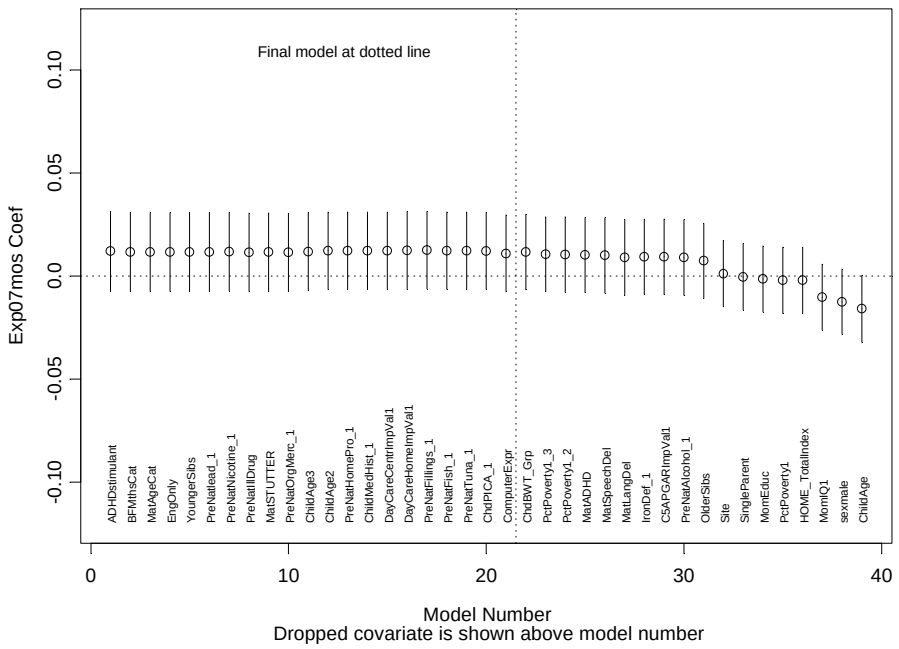


Exhibit D.4.2.7. Stuttering Assessor Rating
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

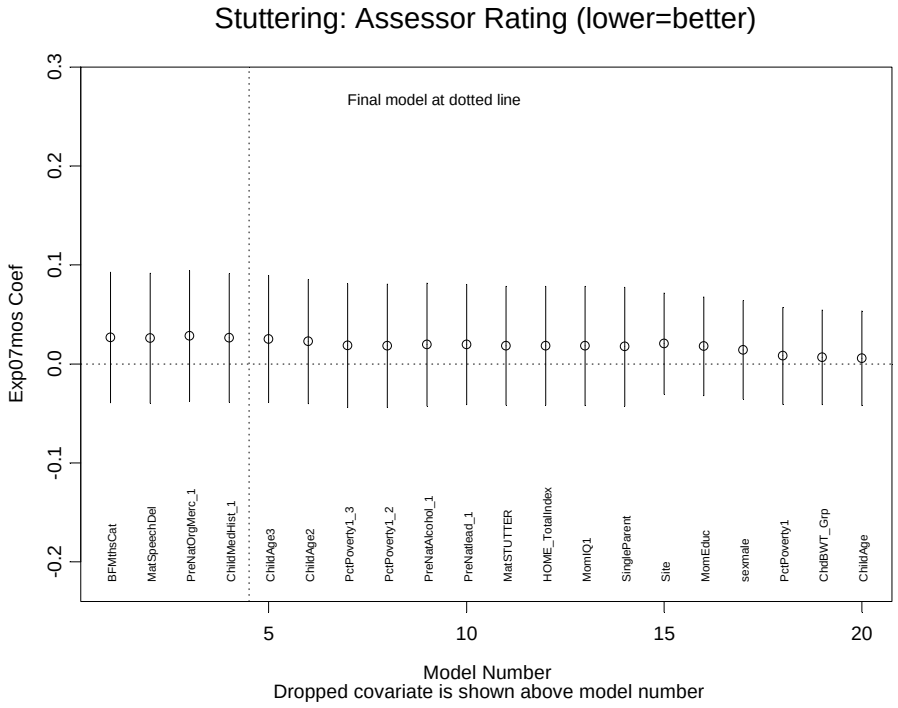


Exhibit D.4.2.8. Stuttering Parent Rating
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

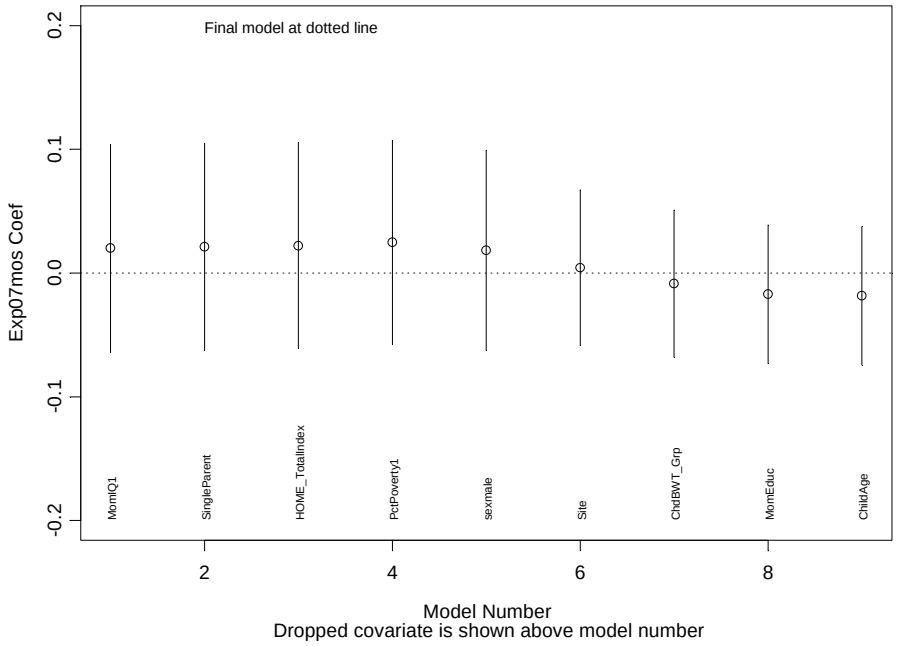


Exhibit D.4.2.9. Stuttering Teacher Rating
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

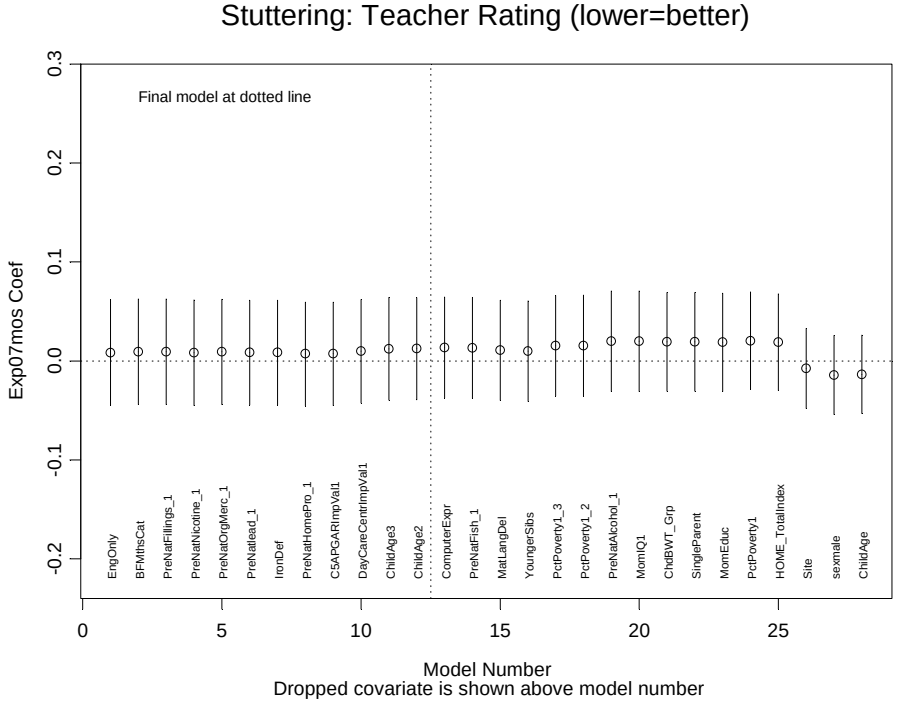


Exhibit D.4.2.10. CVLT-C: Free Recall, No Delay
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

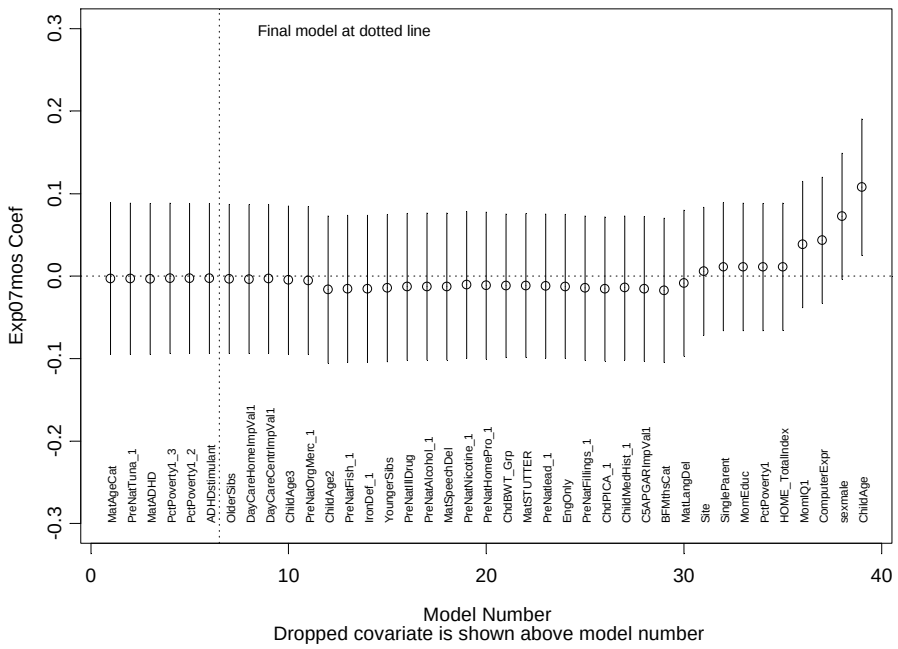


Exhibit D.4.2.11. CVLT-C: Free Recall, Short Delay
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

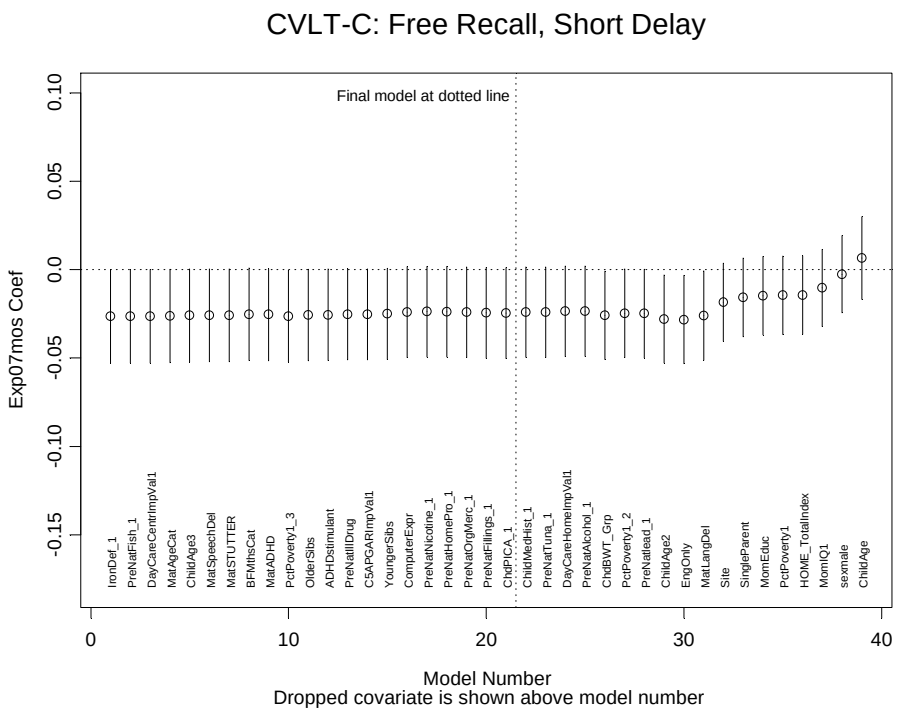


Exhibit D.4.2.12. CVLT-C: Cued Recall, Short Delay
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

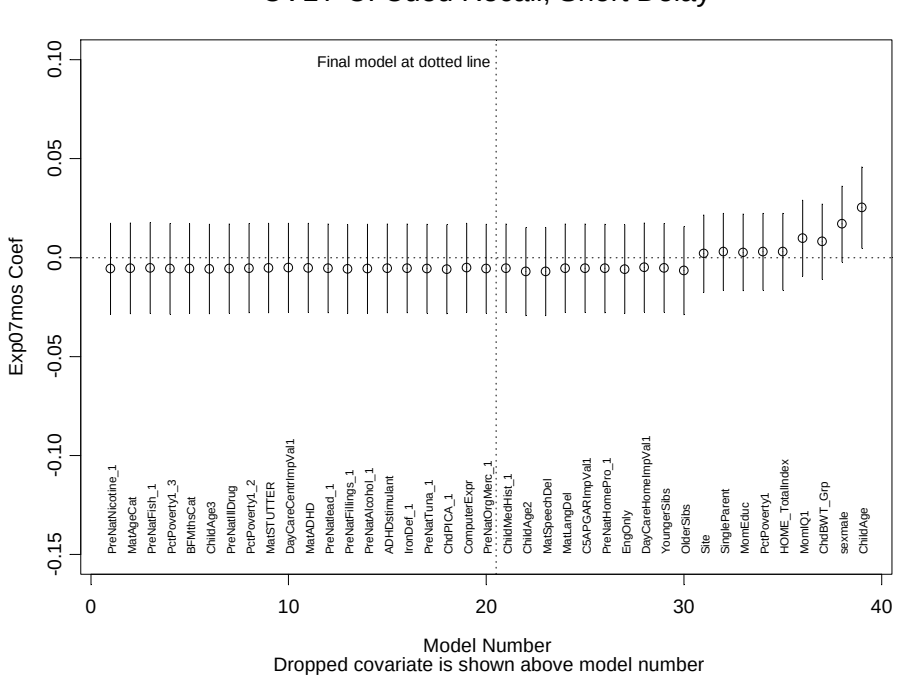


Exhibit D.4.2.13. CVLT-C: Free Recall, Long Delay
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

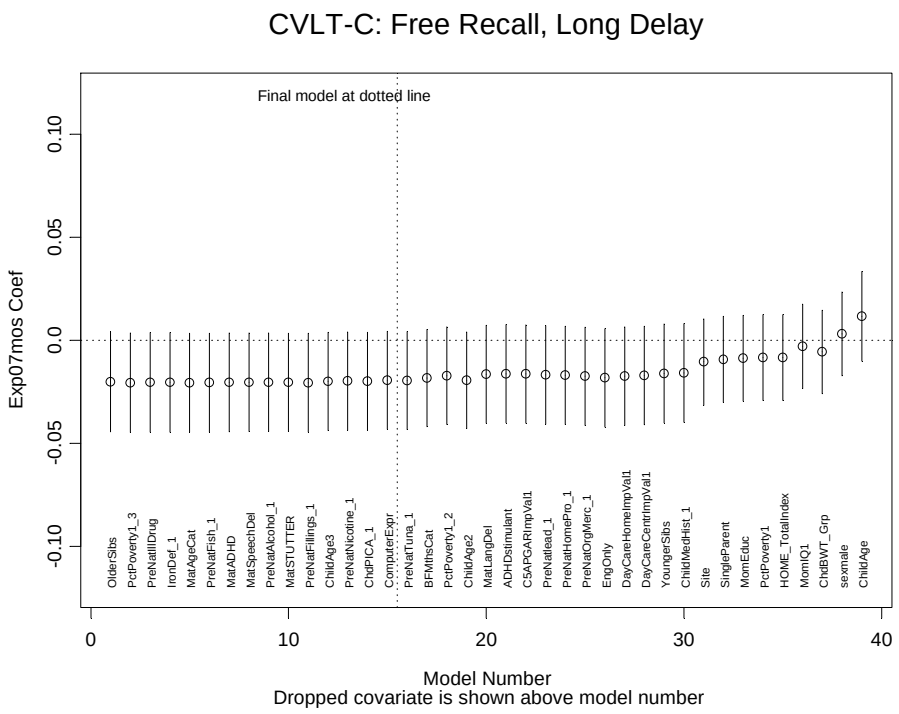


Exhibit D.4.2.14. CVLT-C: Cued Recall, Long Delay
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

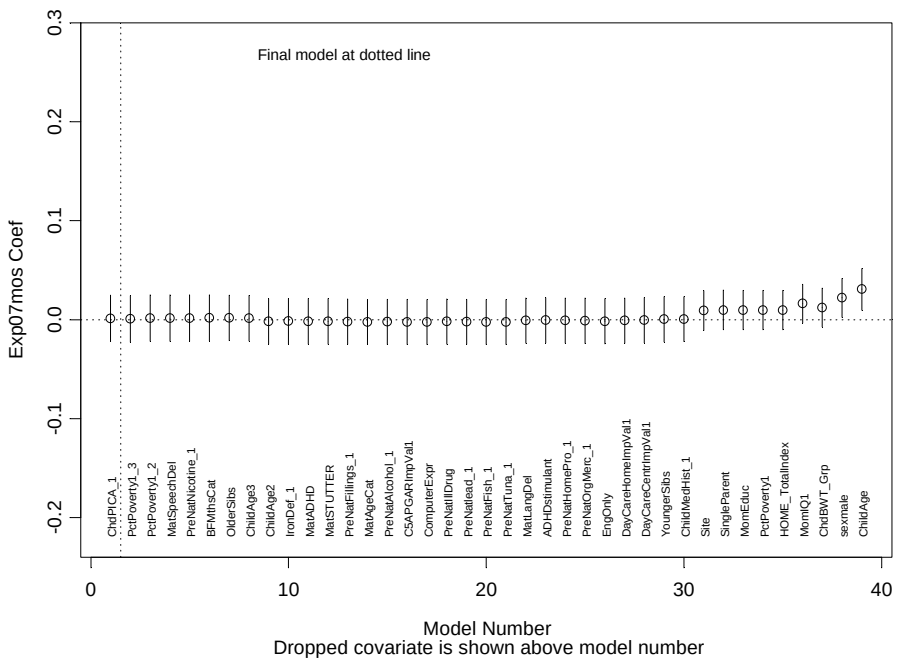


Exhibit D.4.2.15. CMS Stories 1: Immediate Recall
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

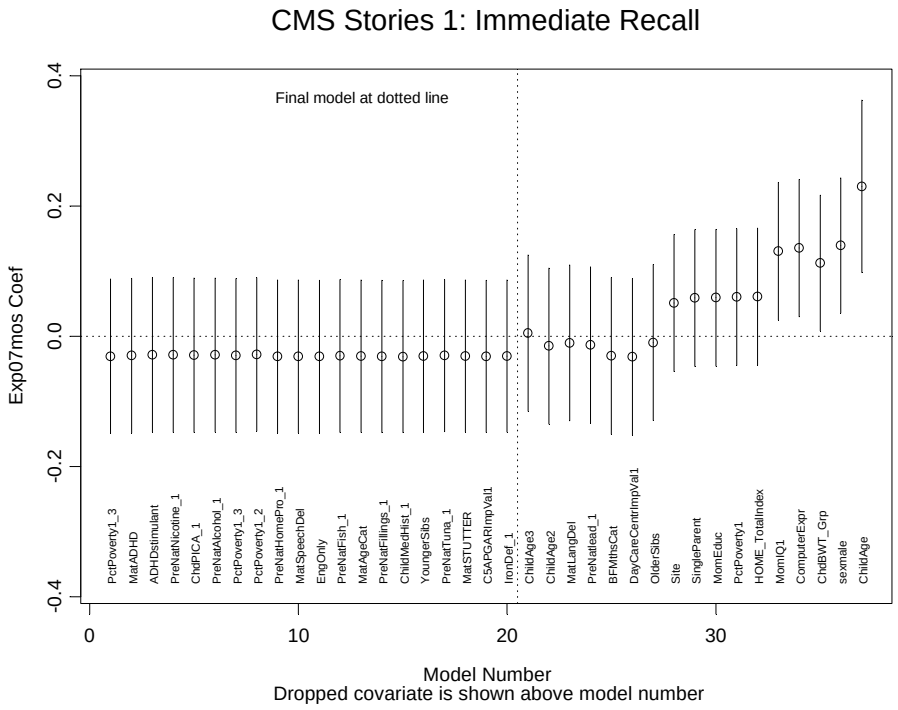


Exhibit D.4.2.16. CMS Stories 2: Delayed Recall
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

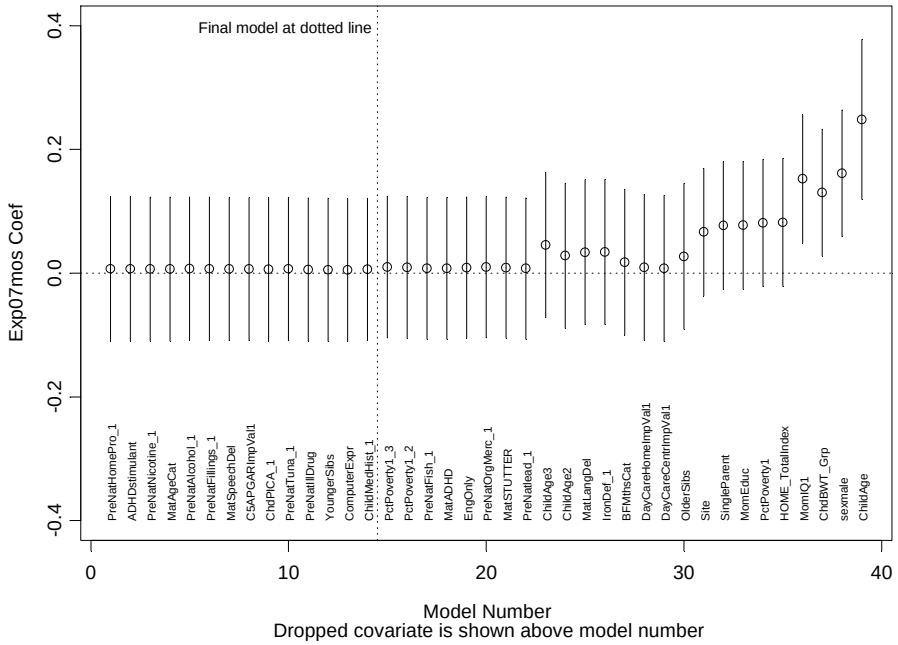


Exhibit D.4.2.17. WJIII: Letter- Word Identification
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

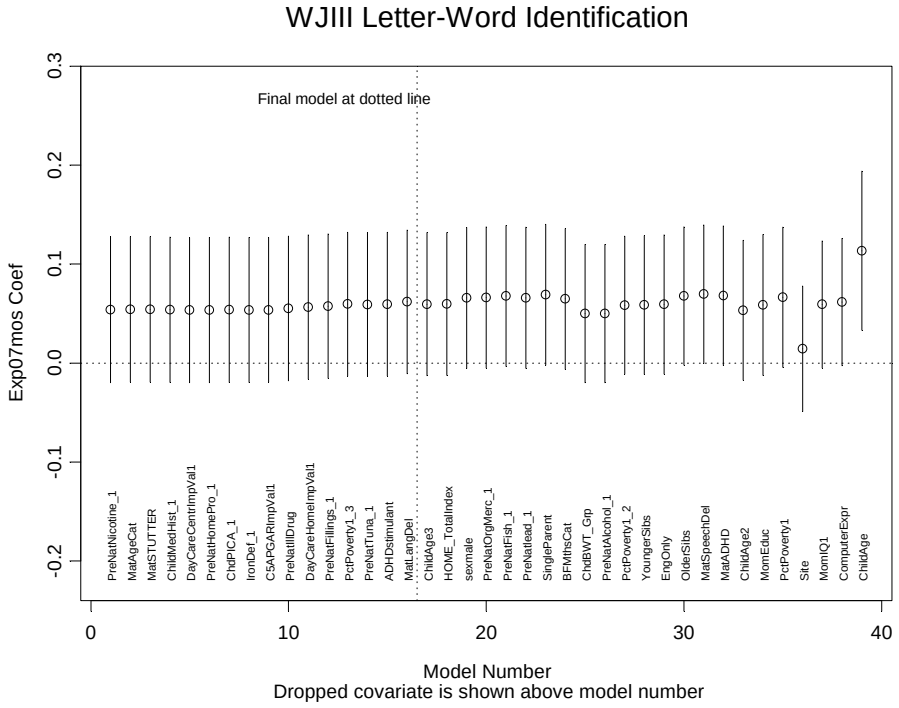


Exhibit D.4.2.18. Grooved Pegboard: Dominant Hand (lower = better)
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

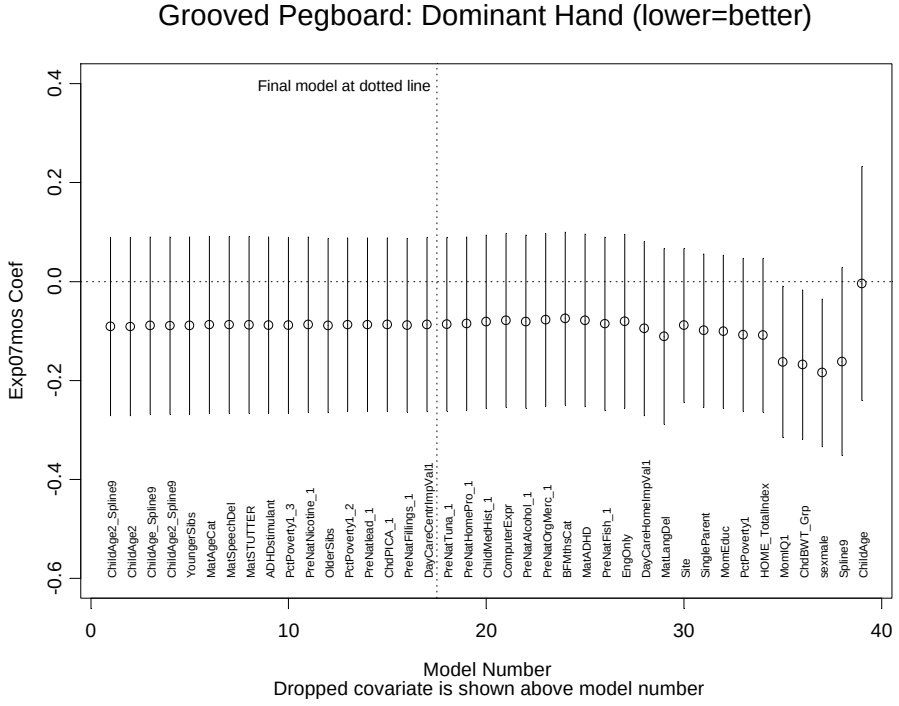


Exhibit D.4.2.19. Grooved Pegboard: Non-dom Hand (lower = better)
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

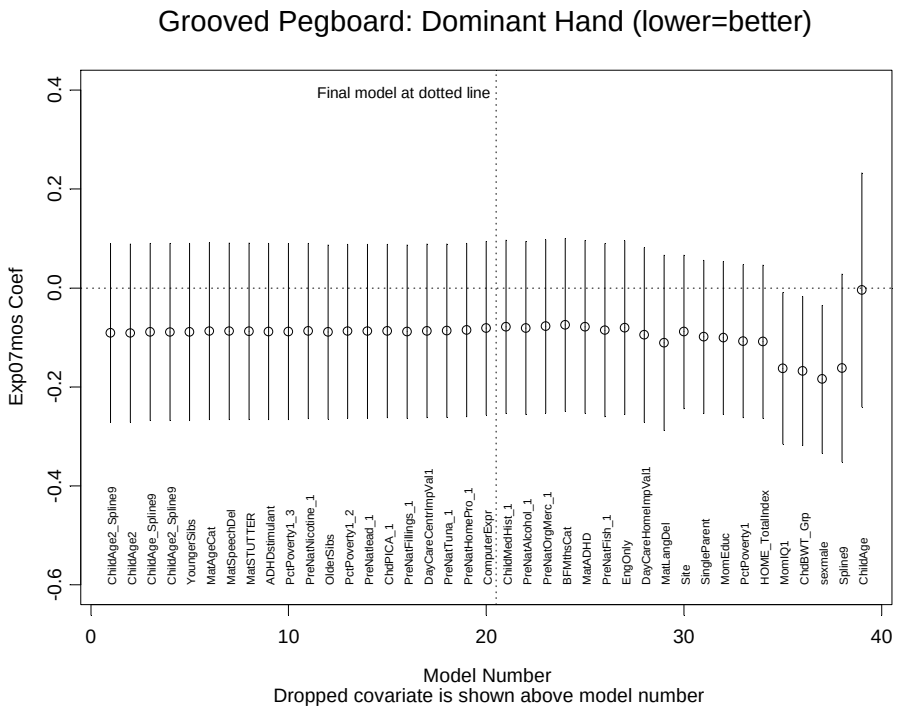


Exhibit D.4.2.20. Finger Tapping: Dominant Hand
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

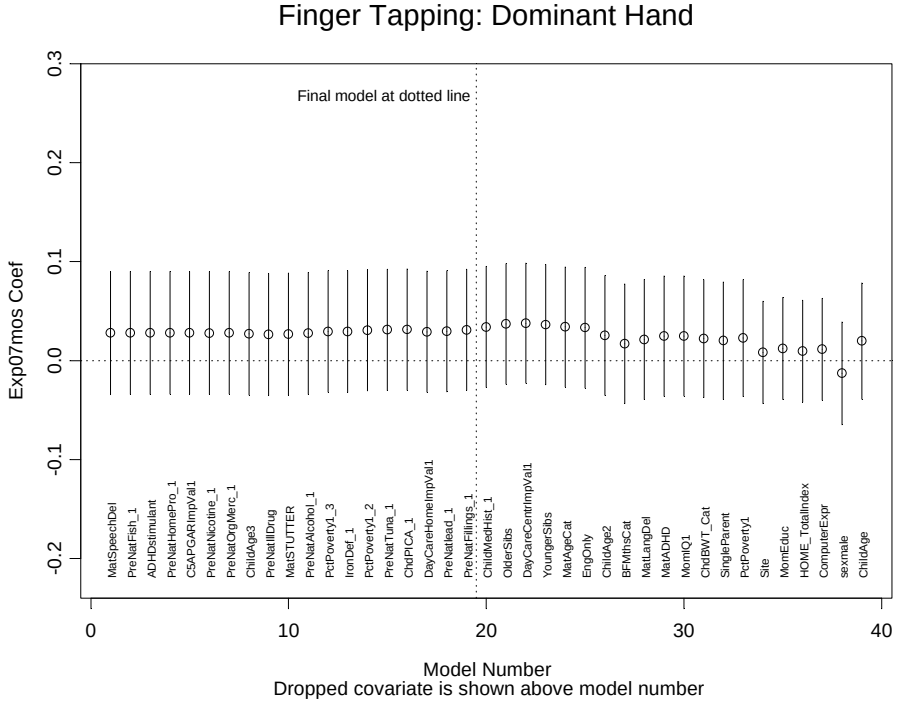


Exhibit D.4.2.21. Finger Tapping: Non-dominant Hand
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

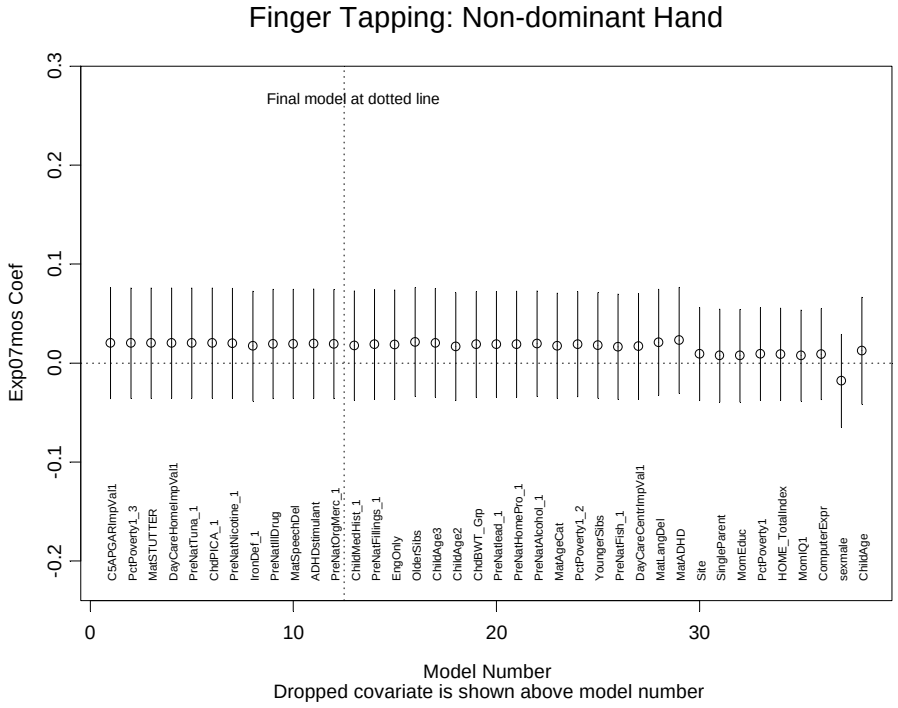


Exhibit D.4.2.22. Stanford Binet: Copying
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

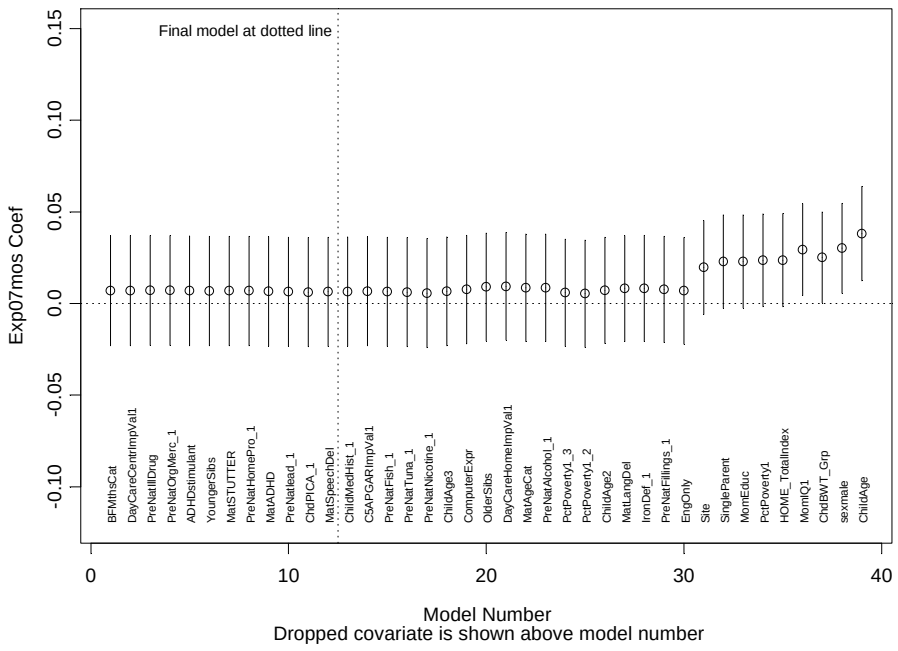


Exhibit D.4.2.23. GDS Vigilance Task: Correct Responses
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

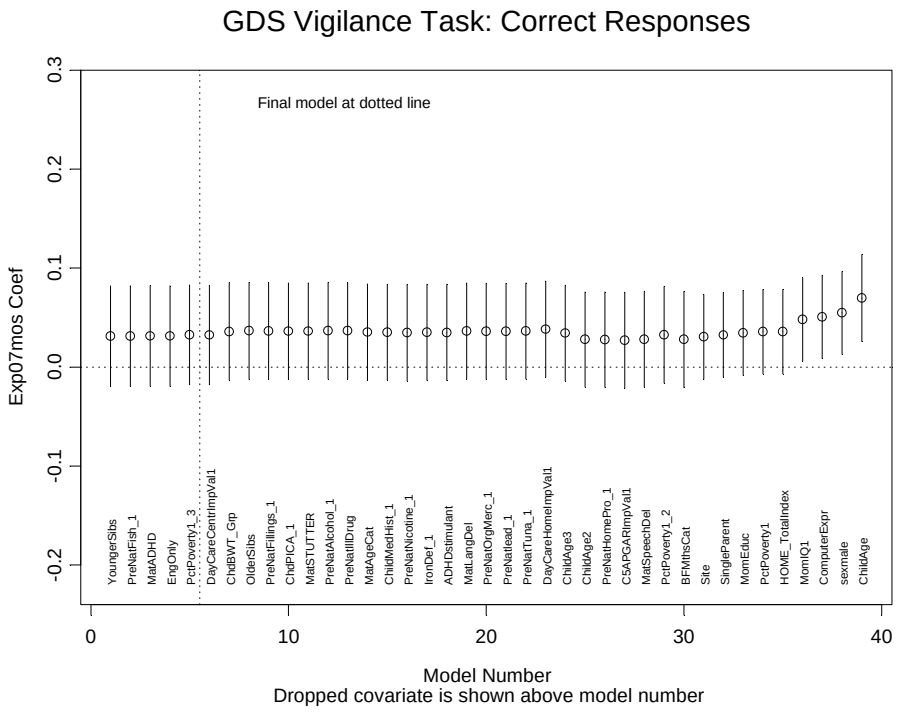


Exhibit D.4.2.24. GDS Vigilance Task: Errors (lower=better)
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

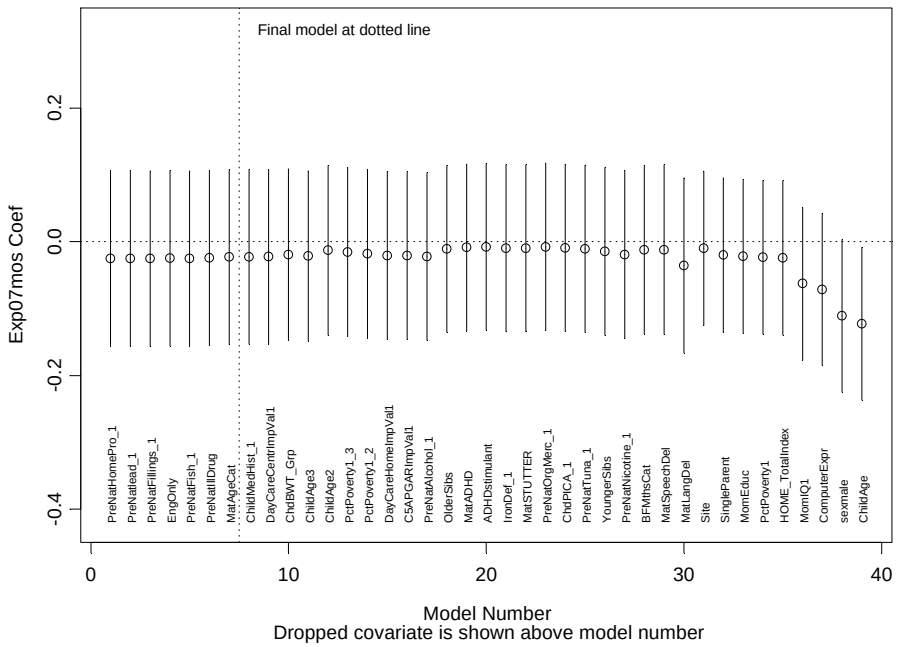


Exhibit D.4.2.25. WISC III: Digit Span, Forward Recall
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

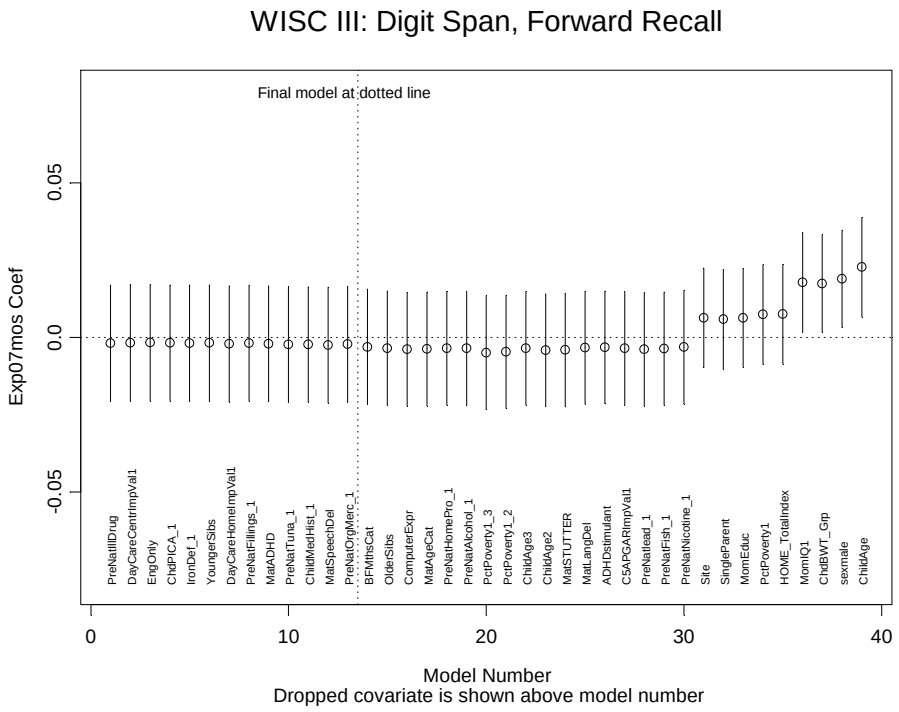


Exhibit D.4.2.26. WISC III: Digit Span, Backward Recall
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

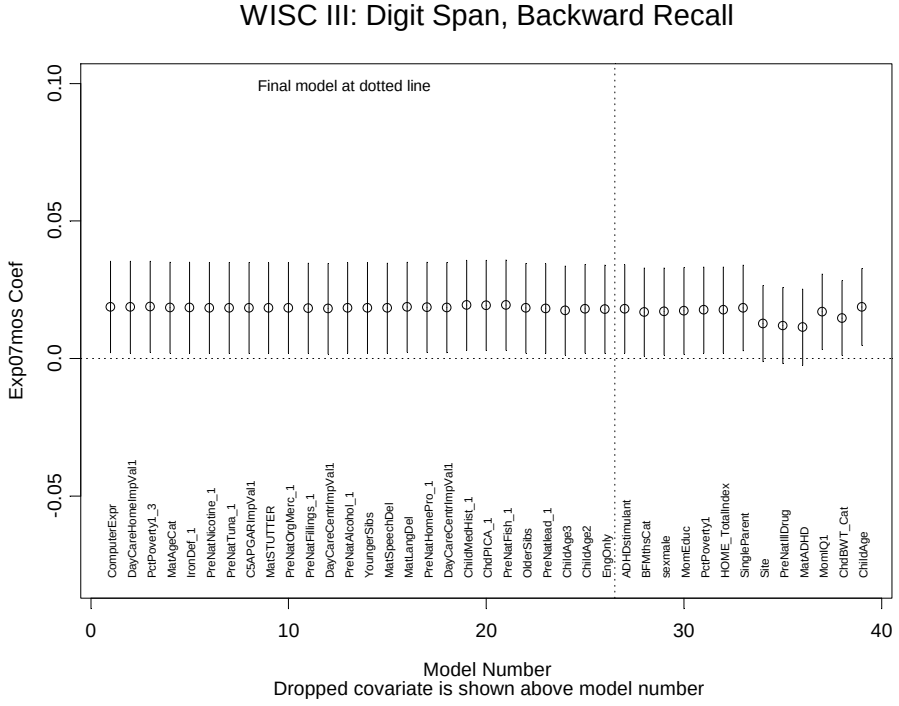


Exhibit D.4.2.27. WISC III: Digit Span, Combined
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

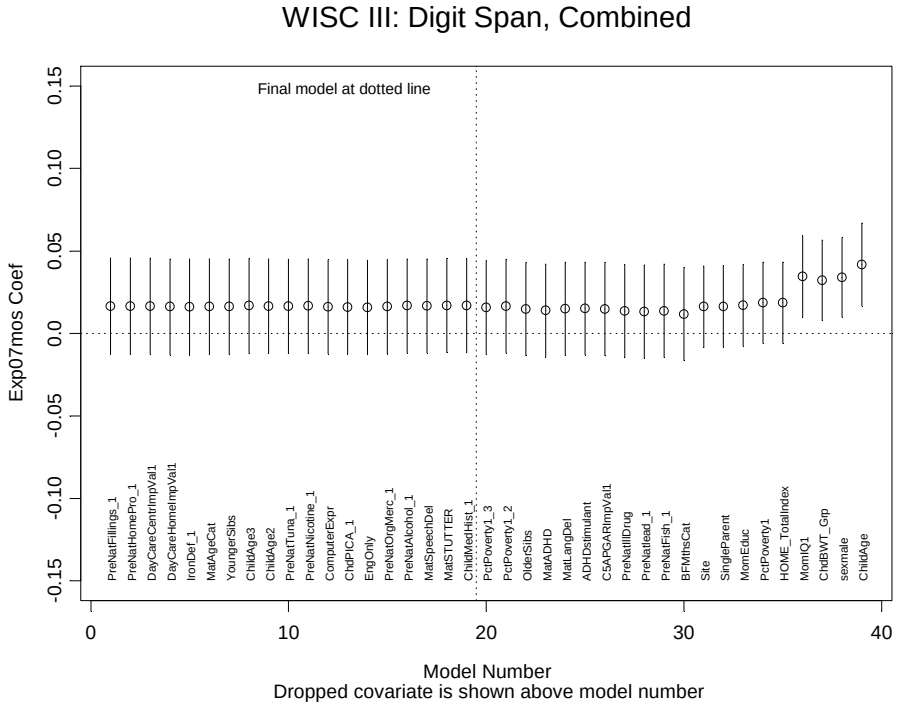


Exhibit D.4.2.28. BRIEF Parent Rating: Metacognition (lower = better)
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

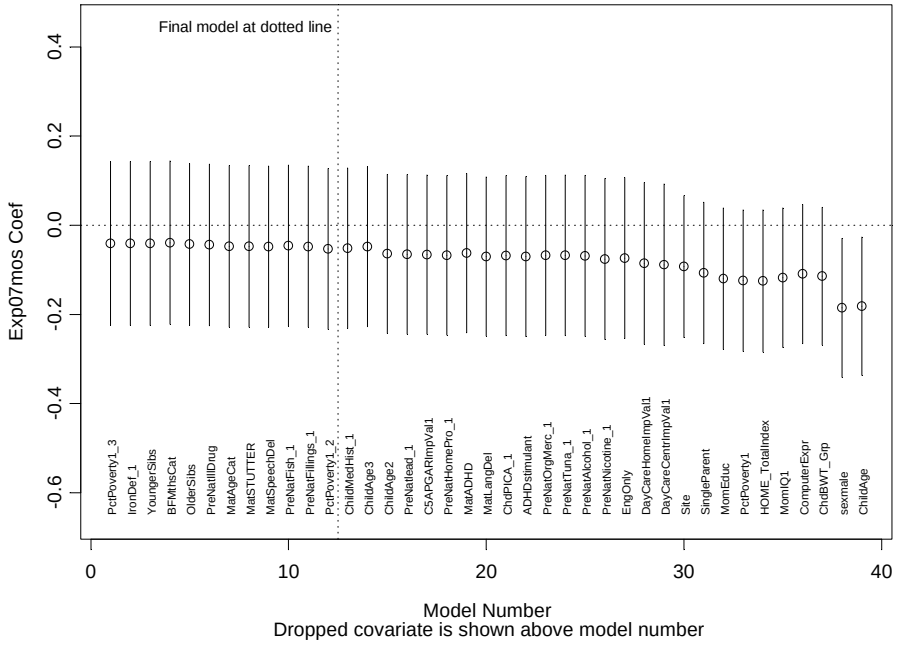


Exhibit D.4.2.29. BRIEF Teacher Rating: Metacognition (lower = better)
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

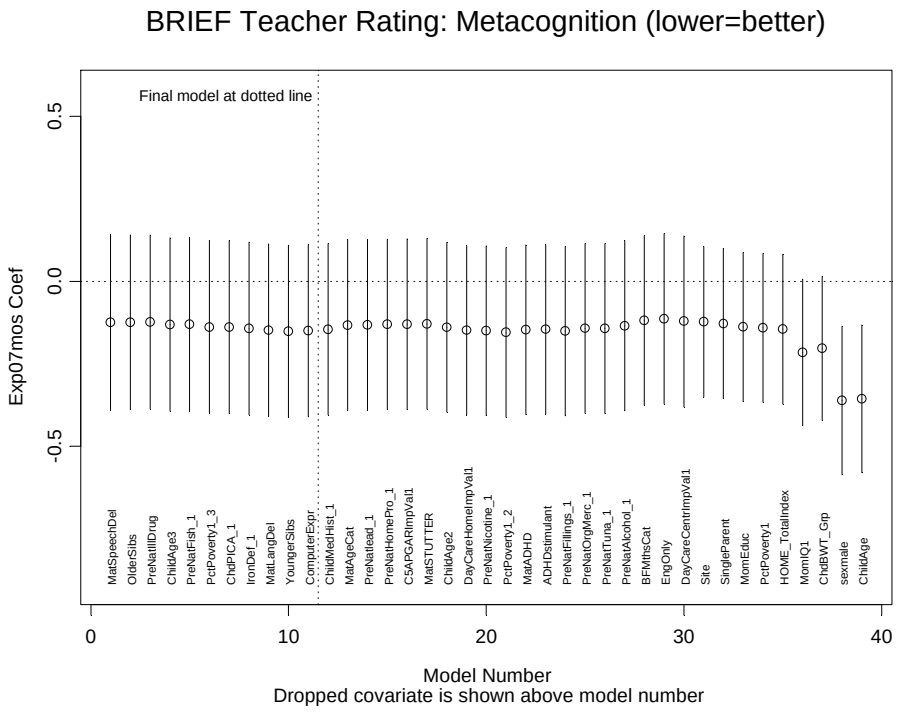


Exhibit D.4.2.30. CRS-R: Parent Rating: Hyperactive/Impulsive (lower = better)
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

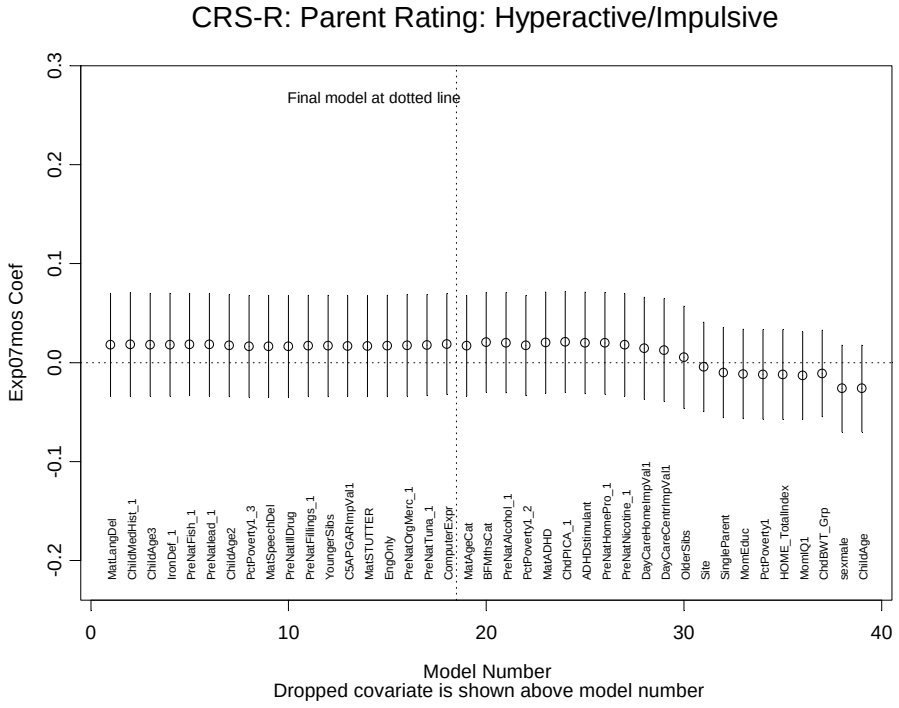


Exhibit D.4.2.31. CRS-R: Teacher Rating: Hyperactive/Impulsive (lower = better)
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

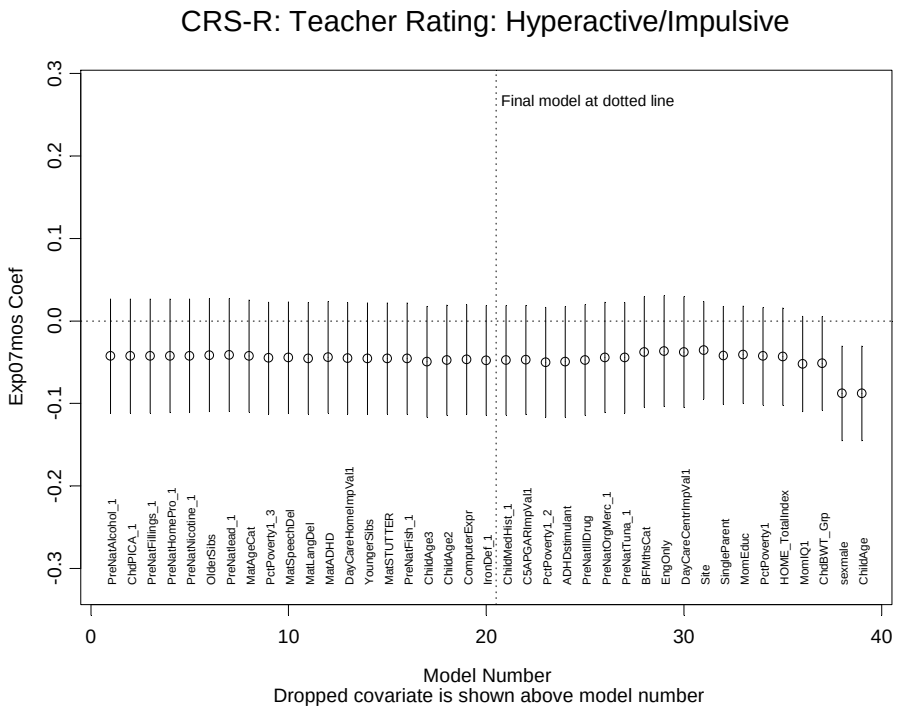


Exhibit D.4.2.32. CRS-R: Parent Rating: Inattentive (lower = better)
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

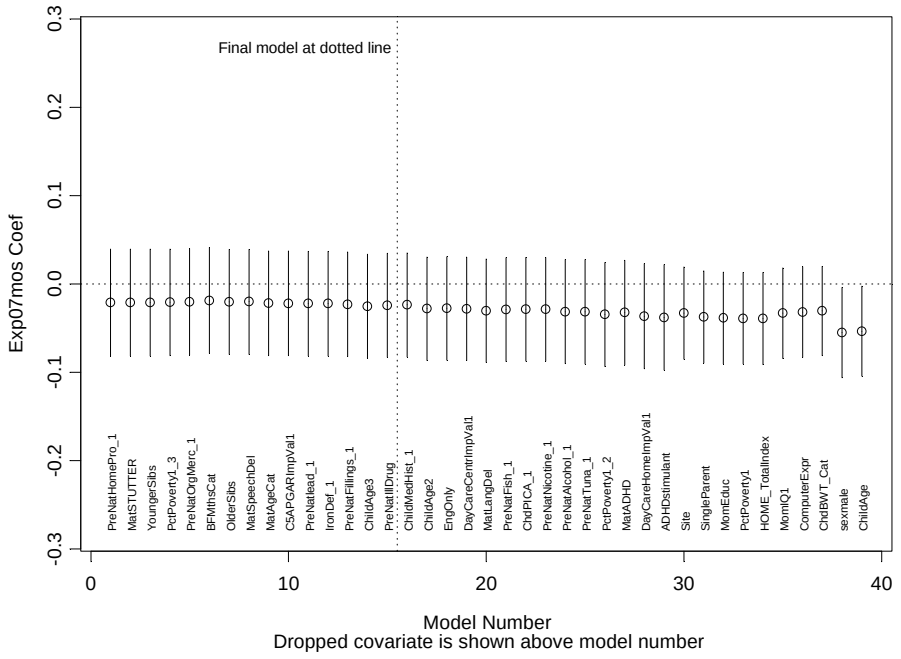


Exhibit D.4.2.33. CRS-R: Teacher Rating: Inattentive (lower = better)
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

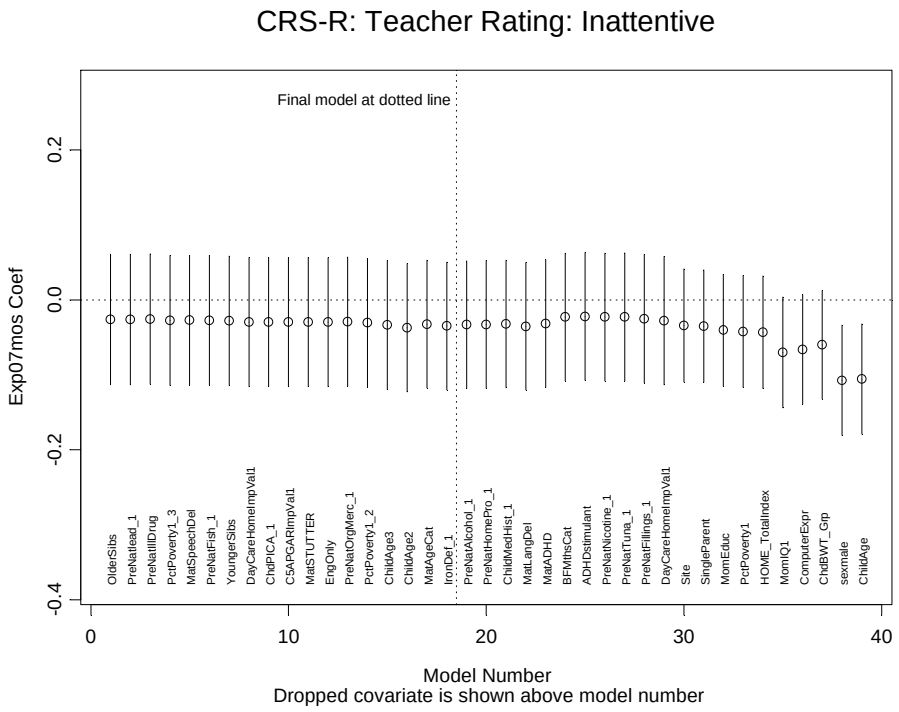


Exhibit D.4.2.34. BRIEF Parent Rating: Behavior Regulation (lower = better)
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

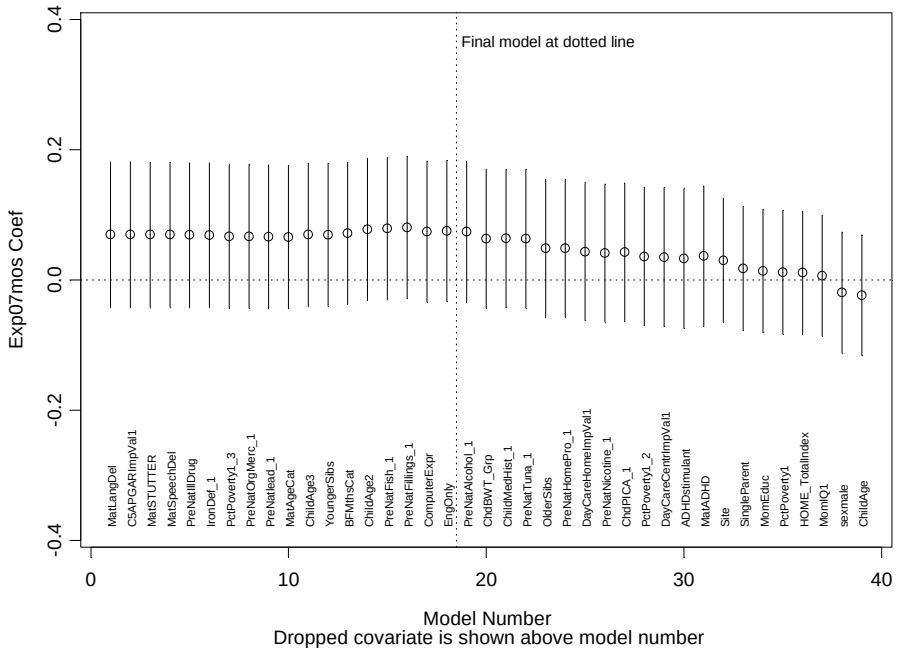


Exhibit D.4.2.35. BRIEF Teacher Rating: Behavior Regulation (lower = better)
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

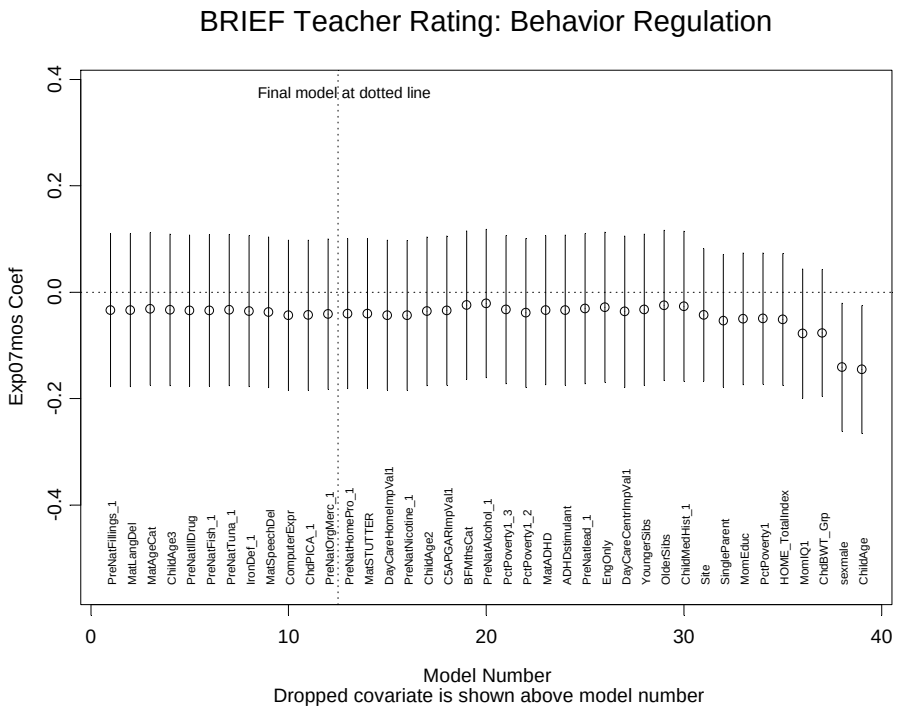


Exhibit D.4.2.36. Motor tics (current): Assessor Rating (lower = better)
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

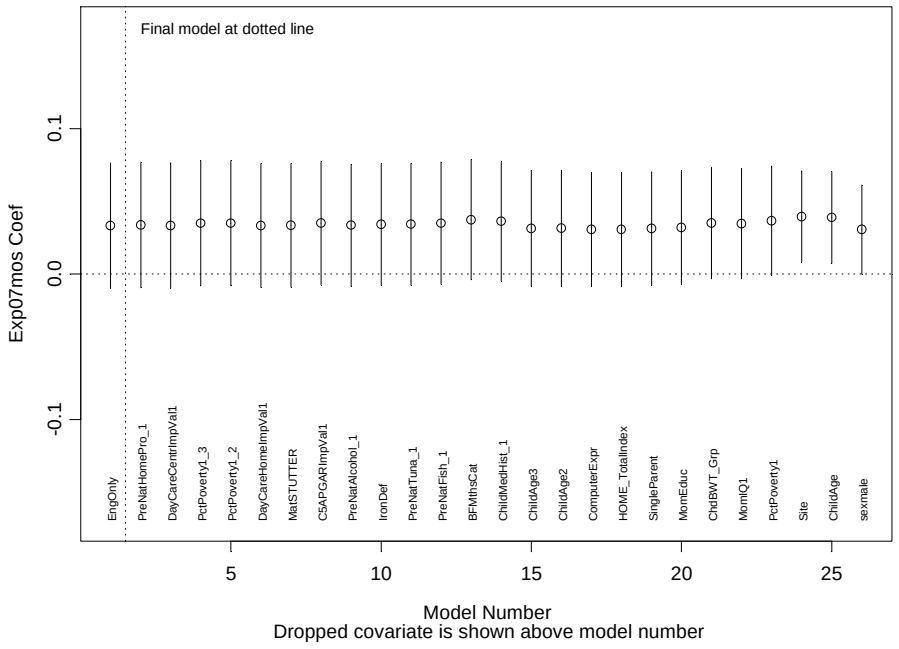


Exhibit D.4.2.37. Phonics tics (current): Assessor Rating (lower = better)
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

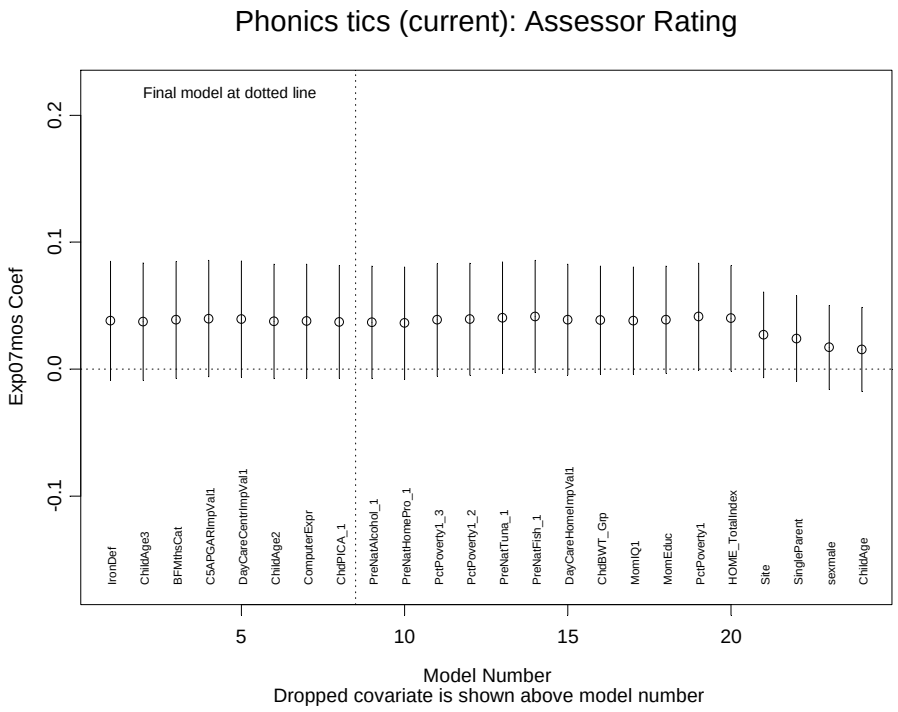


Exhibit D.4.2.38. Motor tics (current): Parent Rating (lower = better)
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

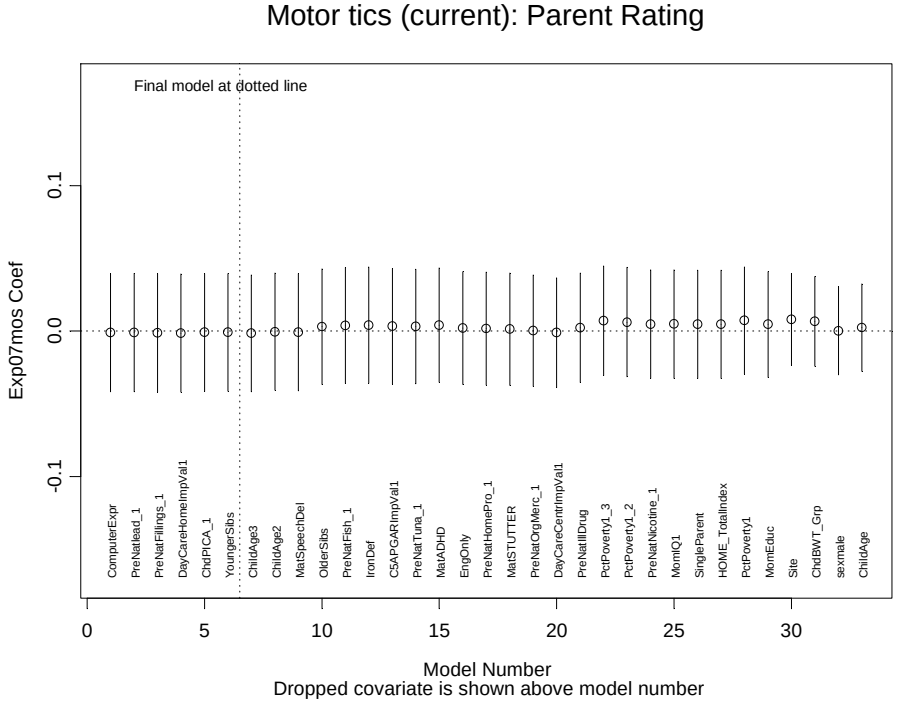


Exhibit D.4.2.39. Phonics tics (current): Parent Rating (lower = better)
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

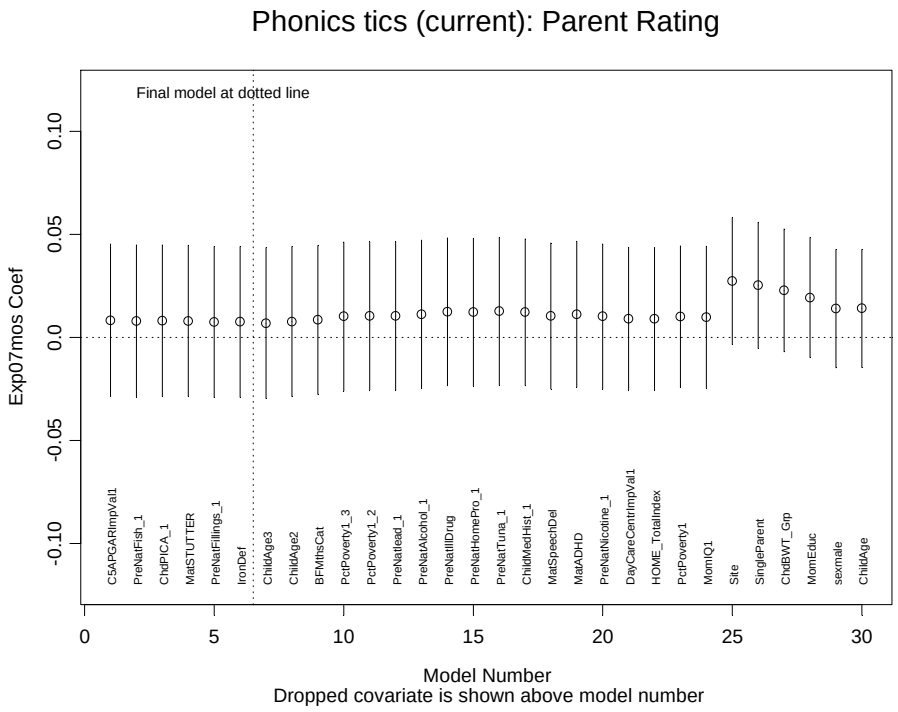


Exhibit D.4.2.40. WASI Verbal IQ
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

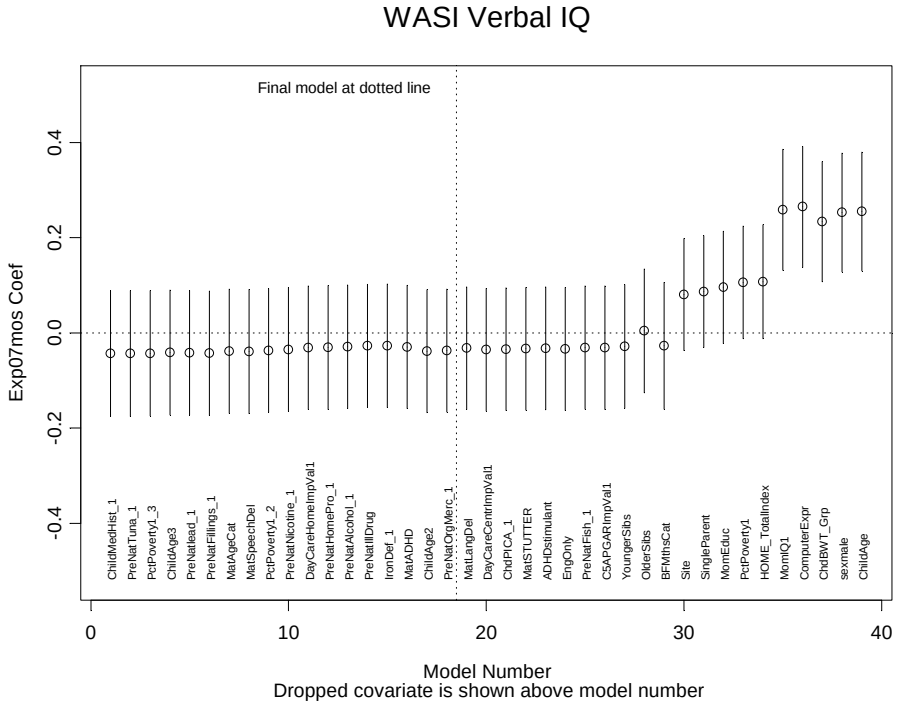


Exhibit D.4.2.41. WASI Performance IQ
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped

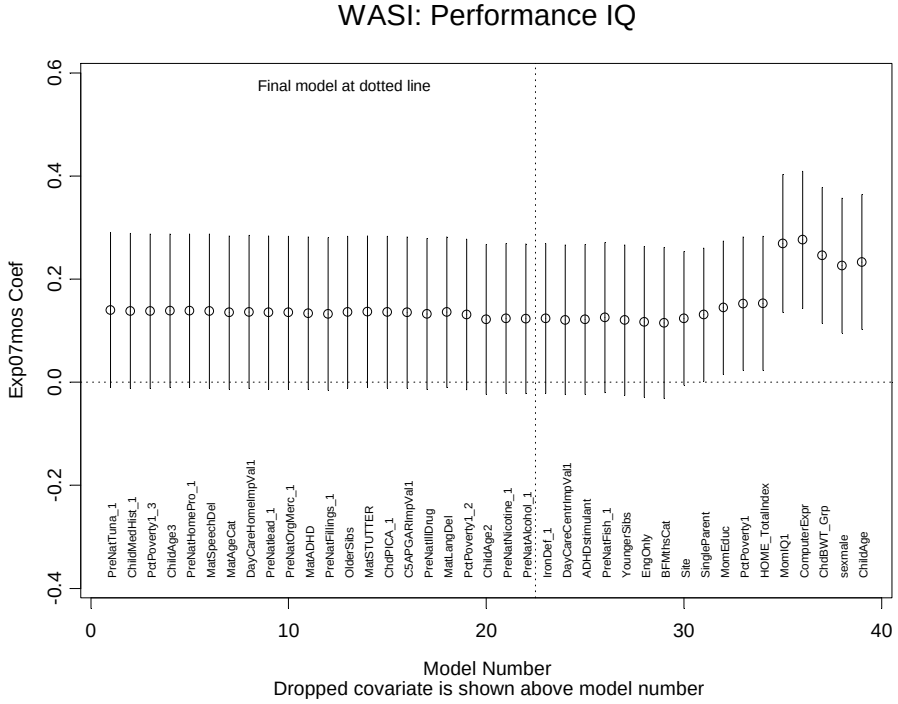
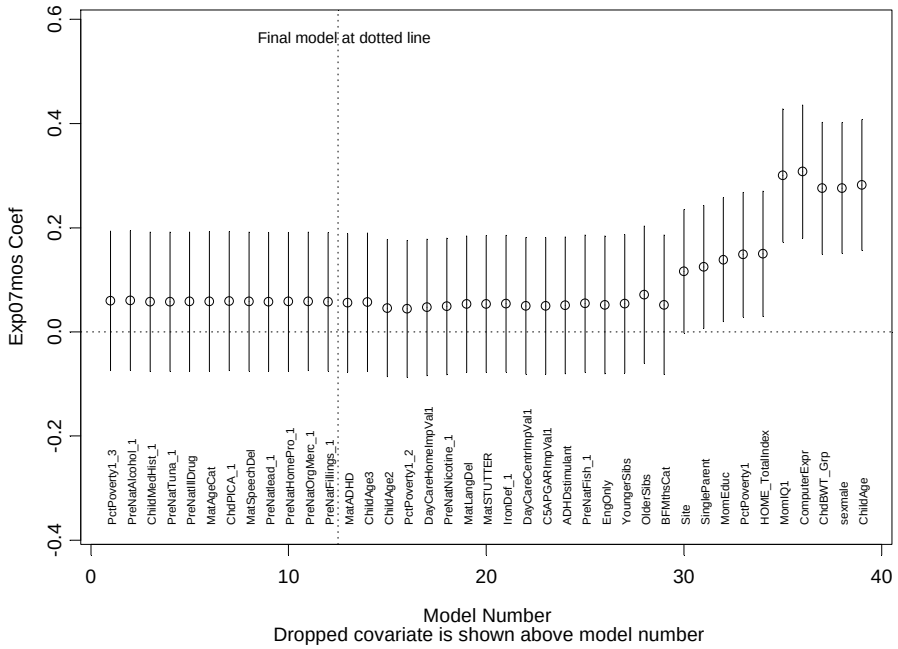


Exhibit D.4.2.42. WASI Full Scale IQ
Exp07mos: Change in Estimate and Precision as Covariates Are Dropped



4.3. HepB

Exhibit D.4.3.1. Boston Naming Test
HepB: Change in Estimate and Precision as Covariates Are Dropped

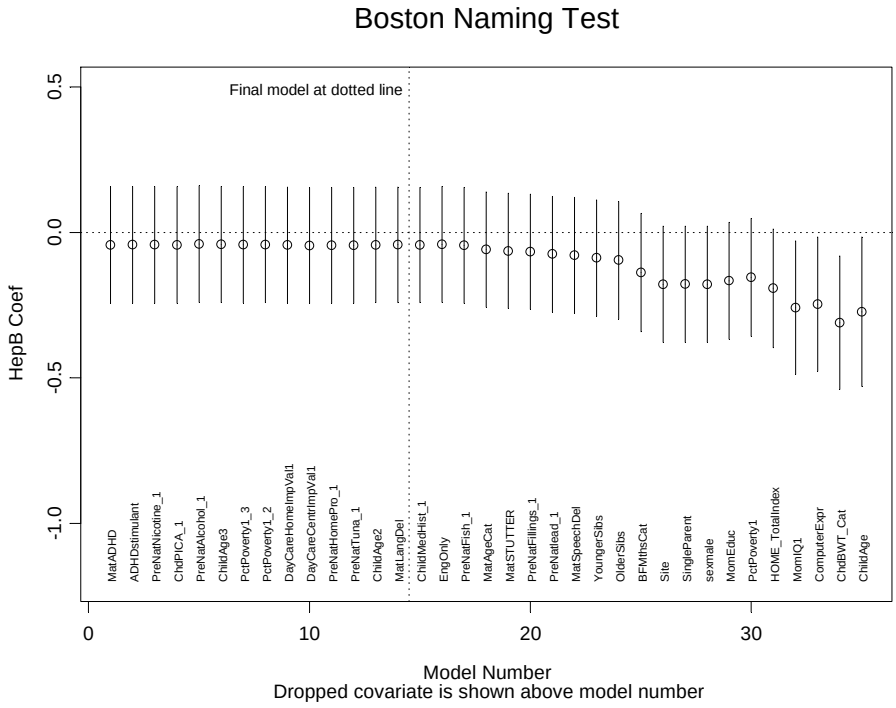


Exhibit D.4.3.2. NEPSY Speeded Naming
HepB: Change in Estimate and Precision as Covariates Are Dropped

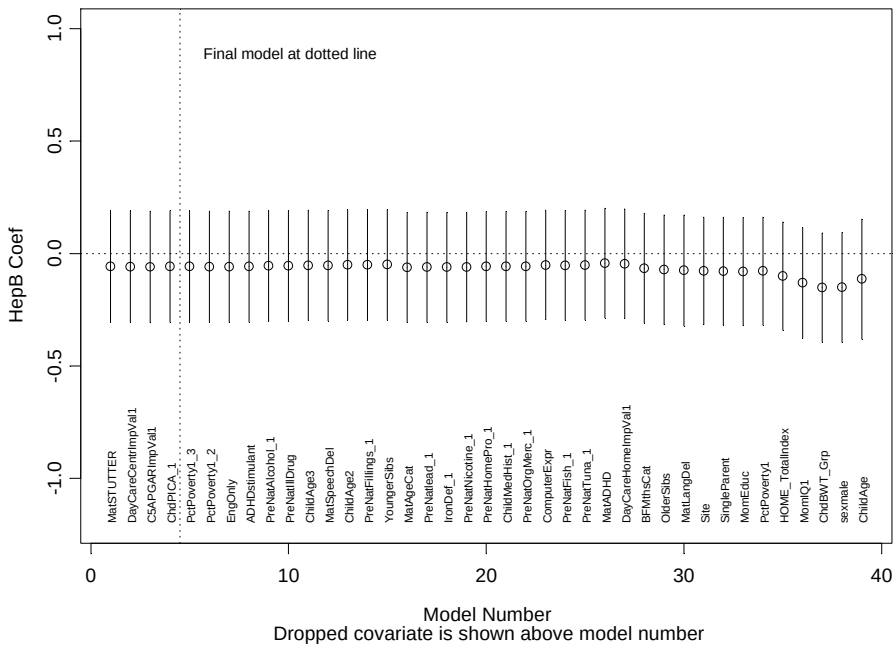


Exhibit D.4.3.3. NEPSY: Comprehension of Instructions
HepB: Change in Estimate and Precision as Covariates Are Dropped

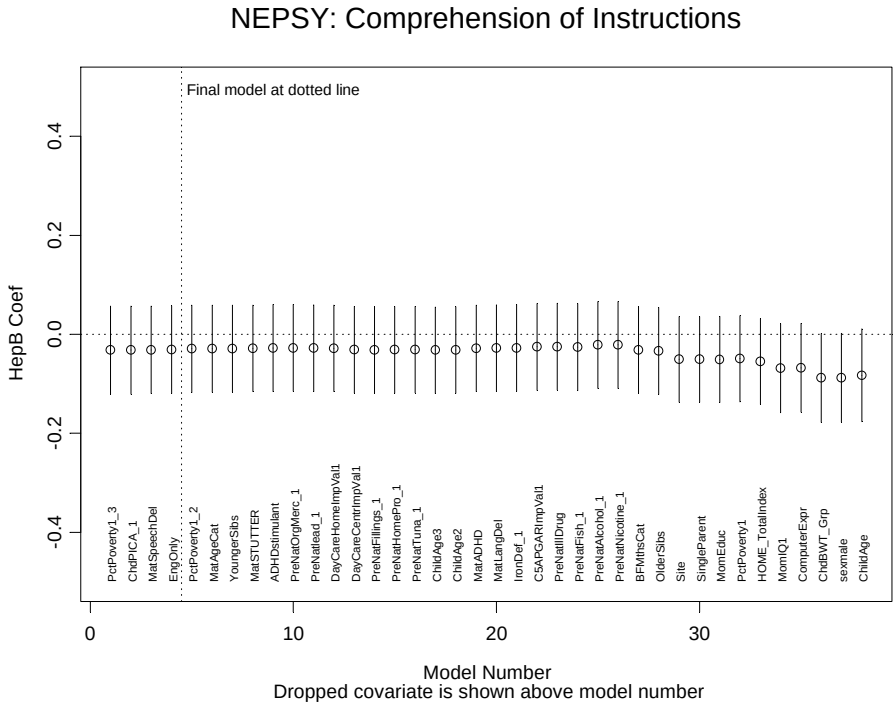


Exhibit D.4.3.4. CELF Formulated Sentences
HepB: Change in Estimate and Precision as Covariates Are Dropped

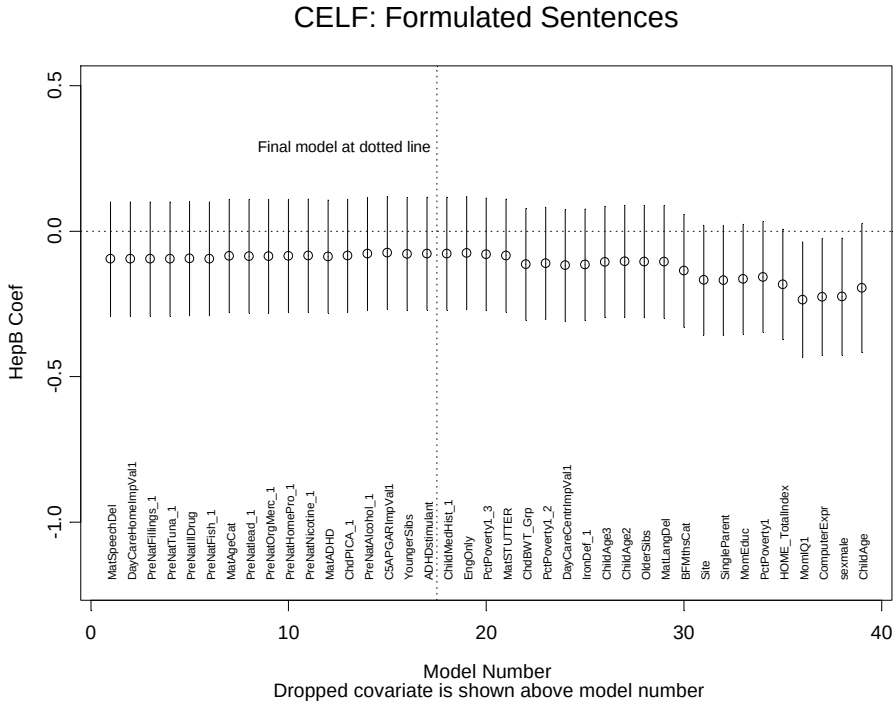


Exhibit D.4.3.5. CELF Recalling Sentences
HepB: Change in Estimate and Precision as Covariates Are Dropped

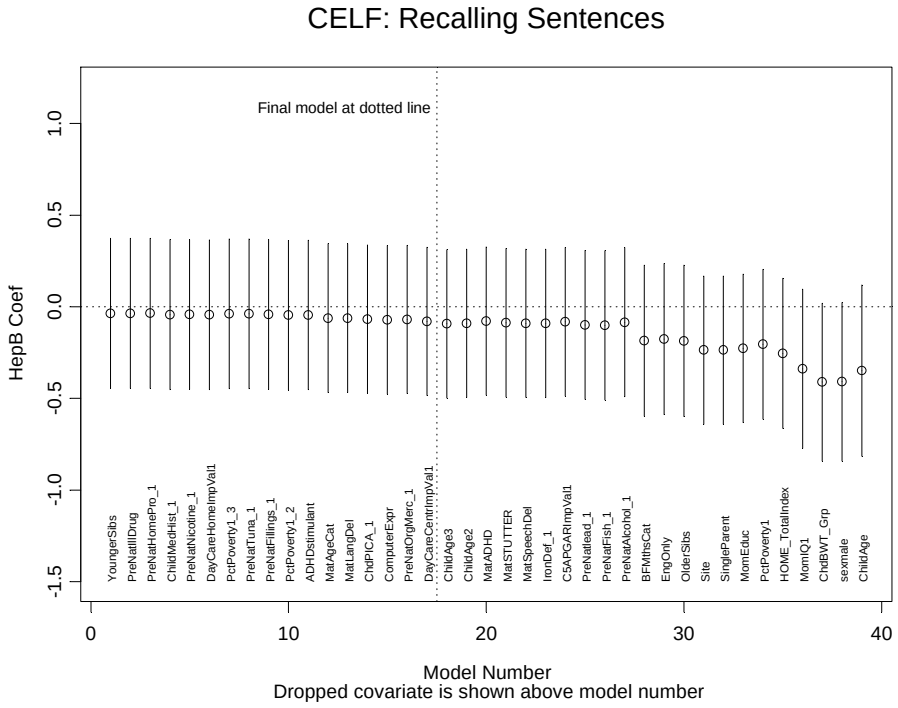


Exhibit D.4.3.6. GFTA Articulation
HepB: Change in Estimate and Precision as Covariates Are Dropped

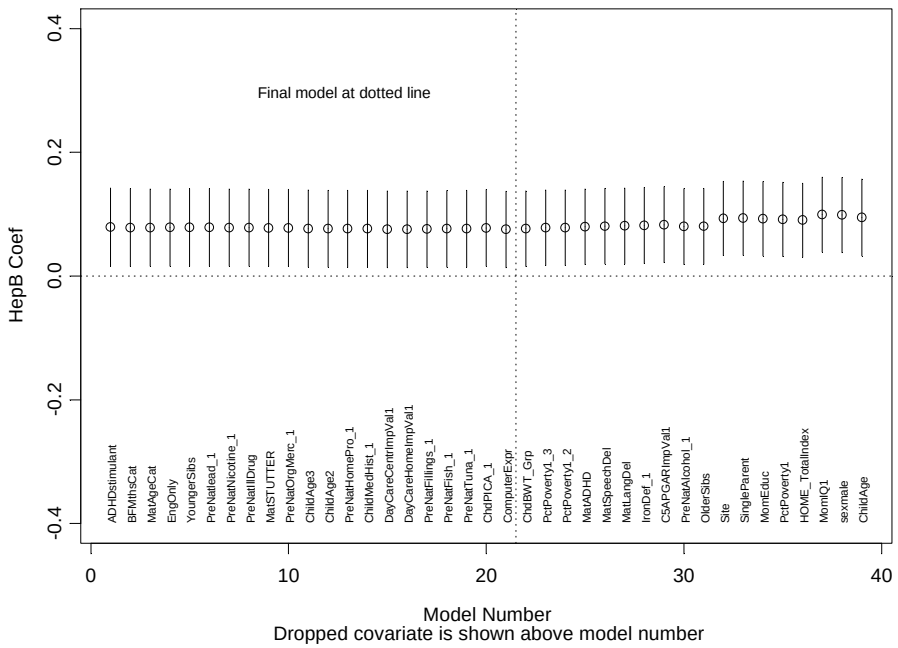


Exhibit D.4.3.7. Stuttering Assessor Rating
HepB: Change in Estimate and Precision as Covariates Are Dropped

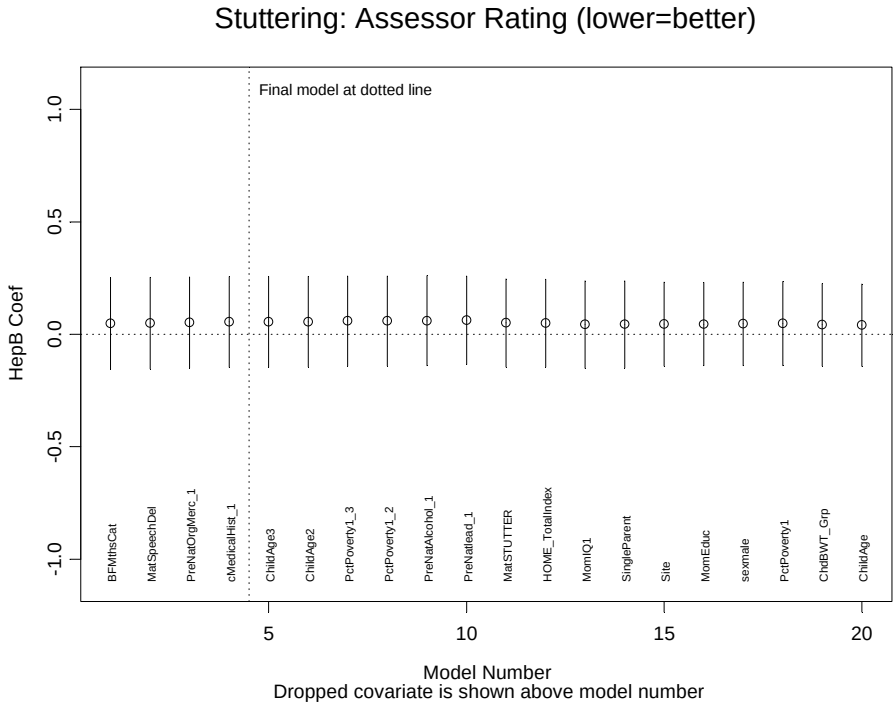


Exhibit D.4.3.8. Stuttering Parent Rating
HepB: Change in Estimate and Precision as Covariates Are Dropped

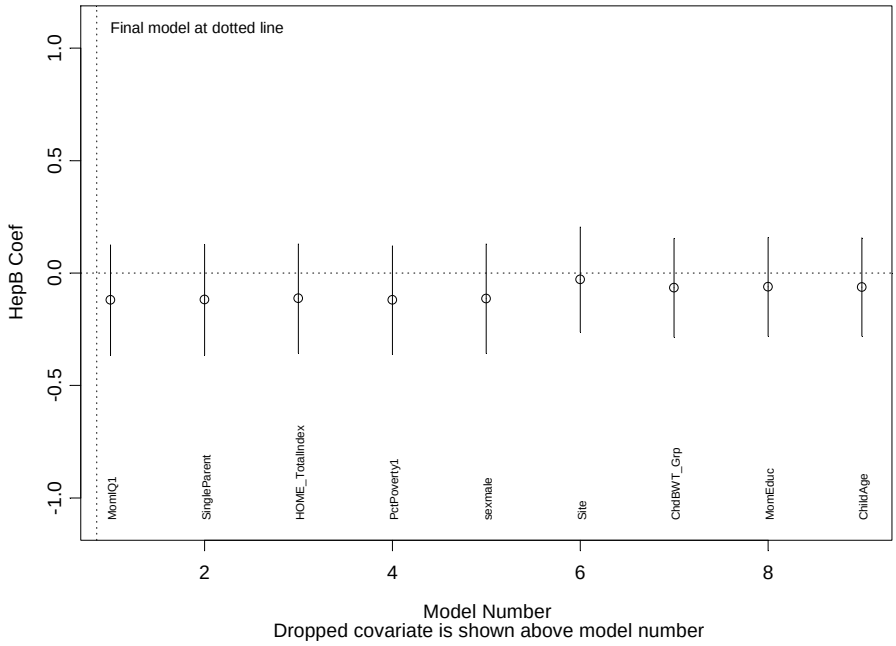


Exhibit D.4.3.9. Stuttering Teacher Rating
HepB: Change in Estimate and Precision as Covariates Are Dropped

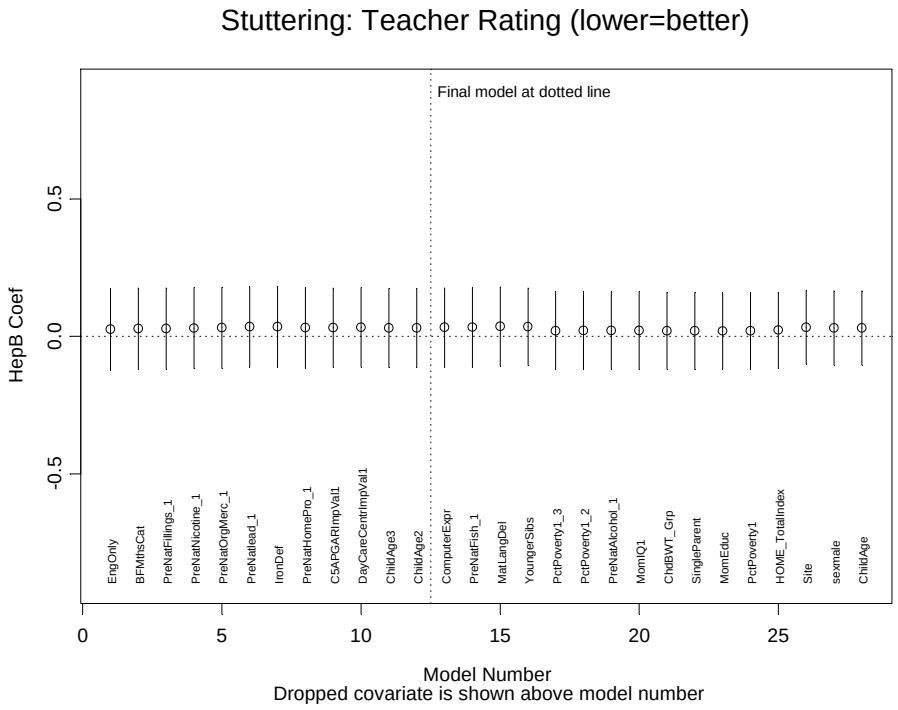


Exhibit D.4.3.10. CVLT-C: Free Recall, No Delay
HepB: Change in Estimate and Precision as Covariates Are Dropped

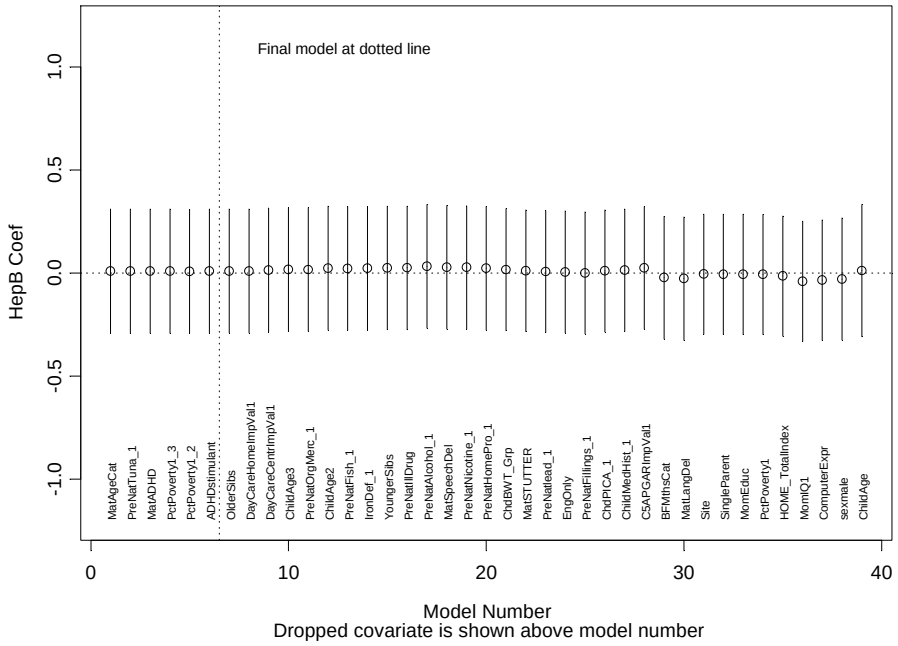


Exhibit D.4.3.11. CVLT-C: Free Recall, Short Delay
HepB: Change in Estimate and Precision as Covariates Are Dropped

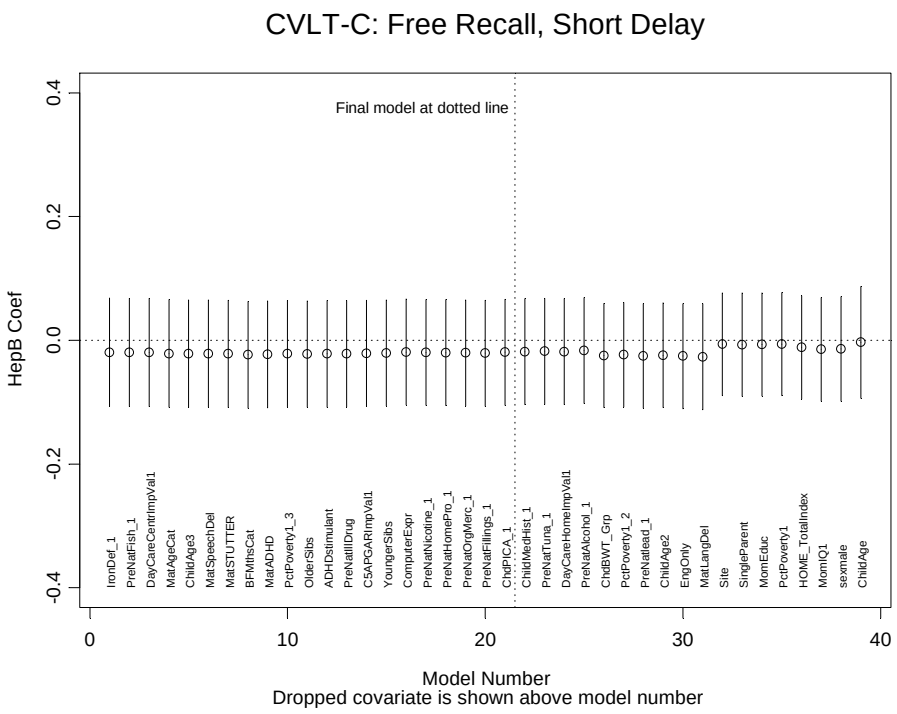


Exhibit D.4.3.12. CVLT-C: Cued Recall, Short Delay
HepB: Change in Estimate and Precision as Covariates Are Dropped

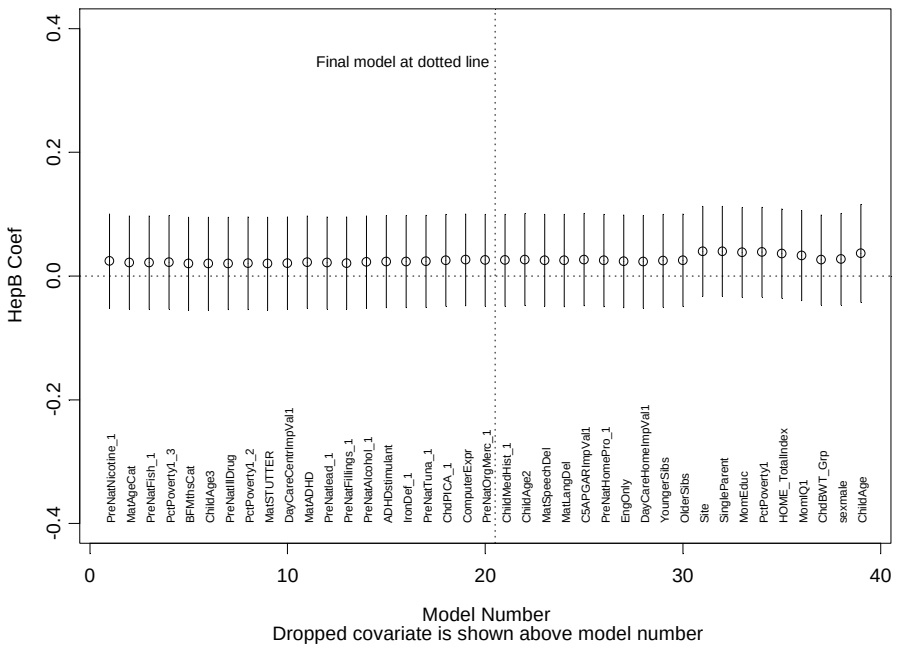


Exhibit D.4.3.13. CVLT-C: Free Recall, Long Delay
HepB: Change in Estimate and Precision as Covariates Are Dropped

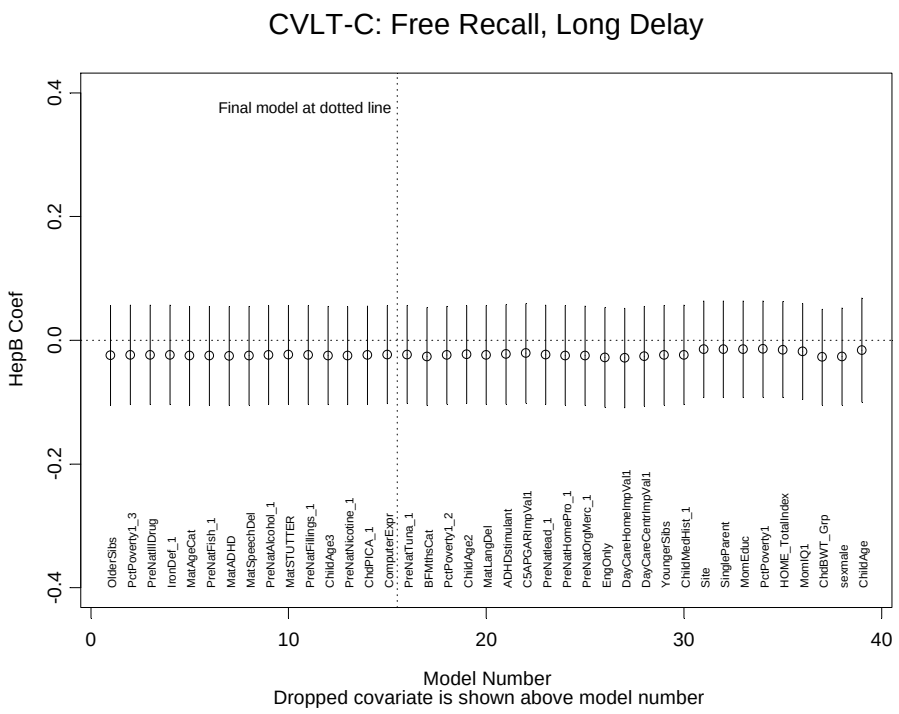


Exhibit D.4.3.14. CVLT-C: Cued Recall, Long Delay
HepB: Change in Estimate and Precision as Covariates Are Dropped

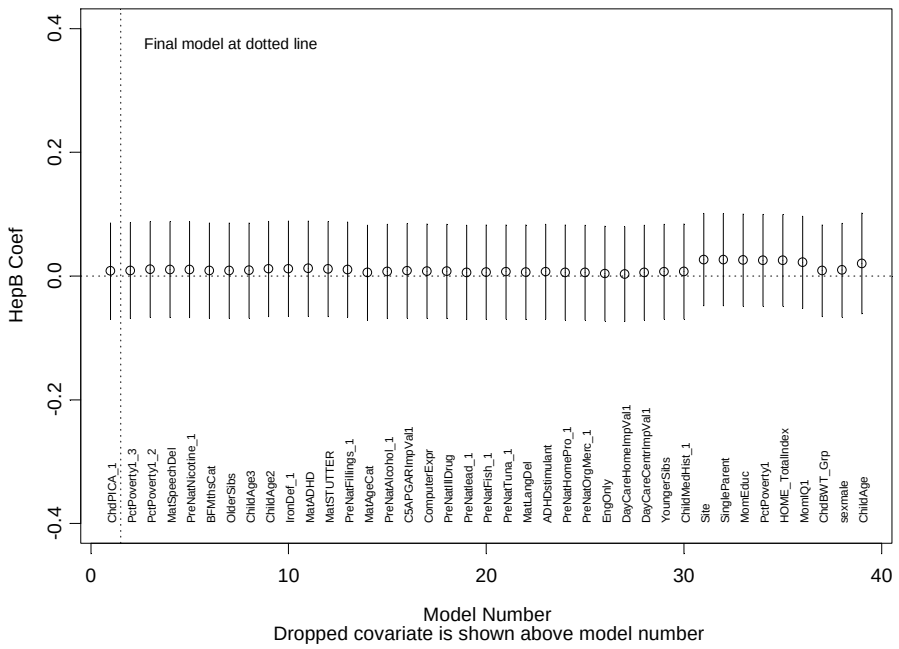


Exhibit D.4.3.15. CMS Stories 1: Immediate Recall
HepB: Change in Estimate and Precision as Covariates Are Dropped

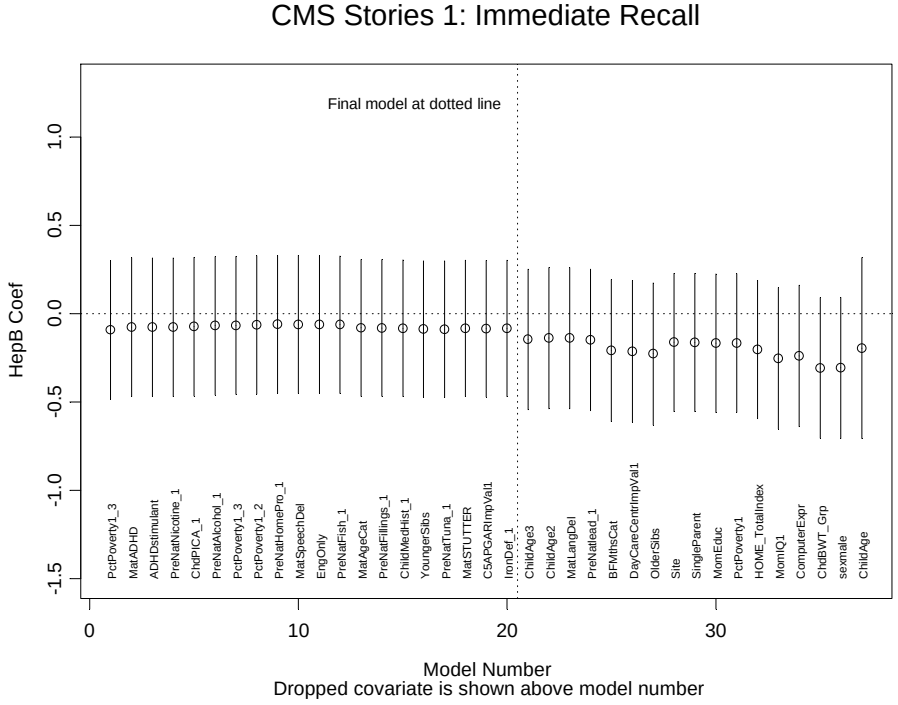


Exhibit D.4.3.16. CMS Stories 2: Delayed Recall
HepB: Change in Estimate and Precision as Covariates Are Dropped

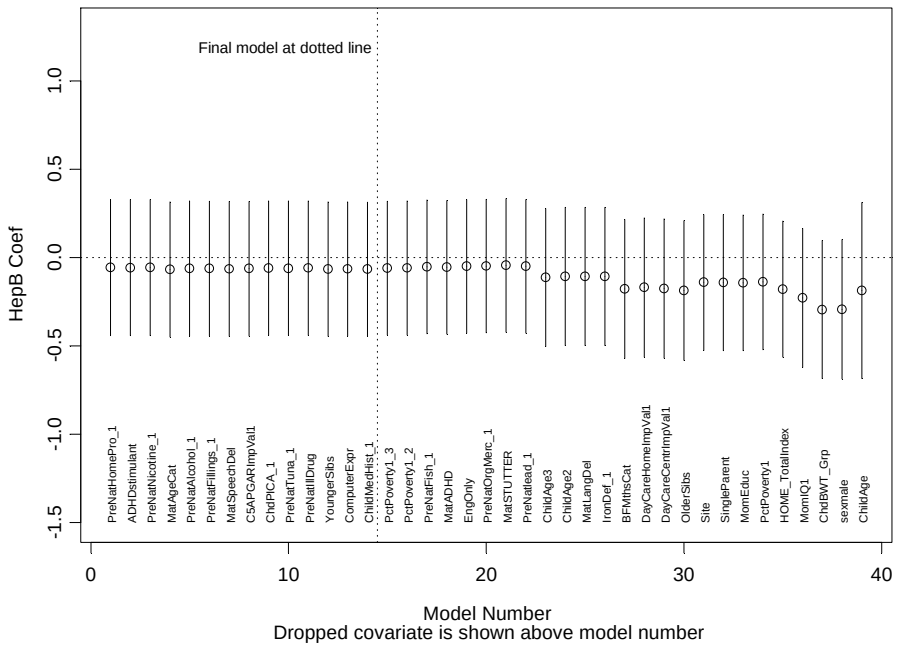


Exhibit D.4.3.17. WJIII: Letter- Word Identification
HepB: Change in Estimate and Precision as Covariates Are Dropped

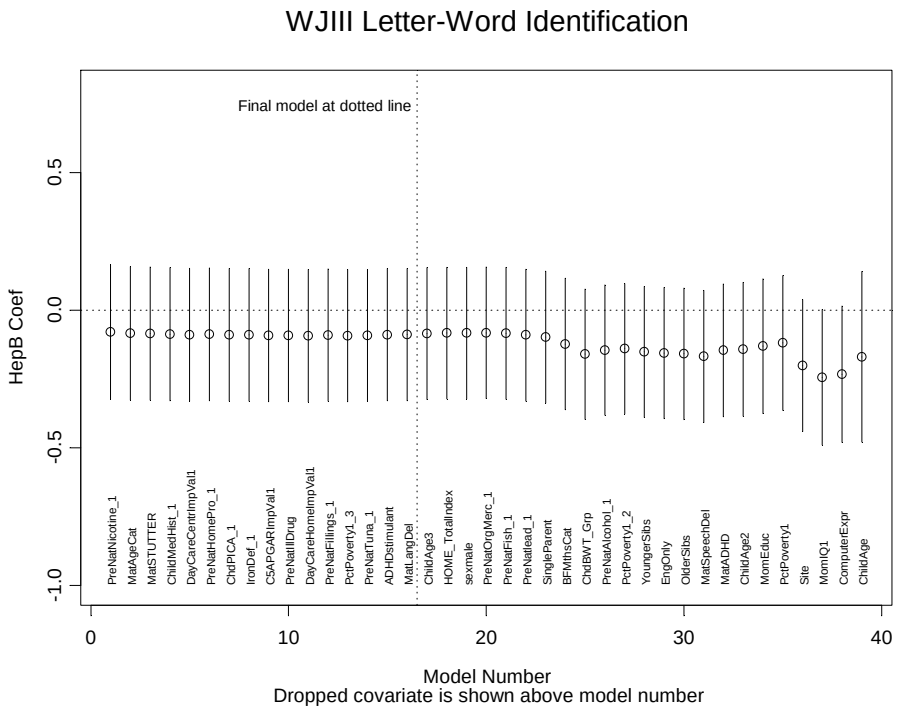


Exhibit D.4.3.18. Grooved Pegboard: Dominant Hand (lower = better)
HepB: Change in Estimate and Precision as Covariates Are Dropped

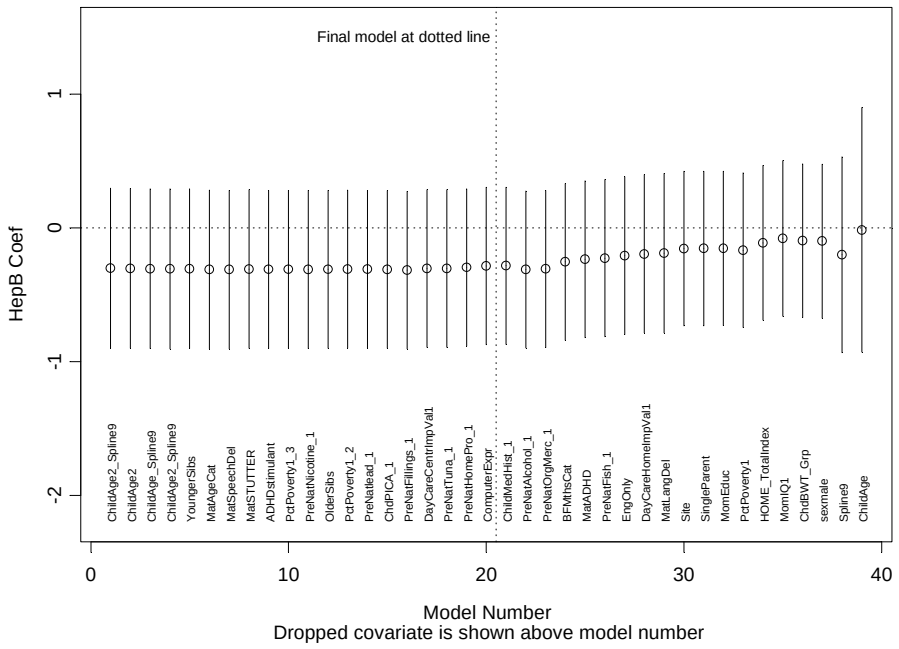


Exhibit D.4.3.19. Grooved Pegboard: Non-dom Hand (lower = better)
HepB: Change in Estimate and Precision as Covariates Are Dropped

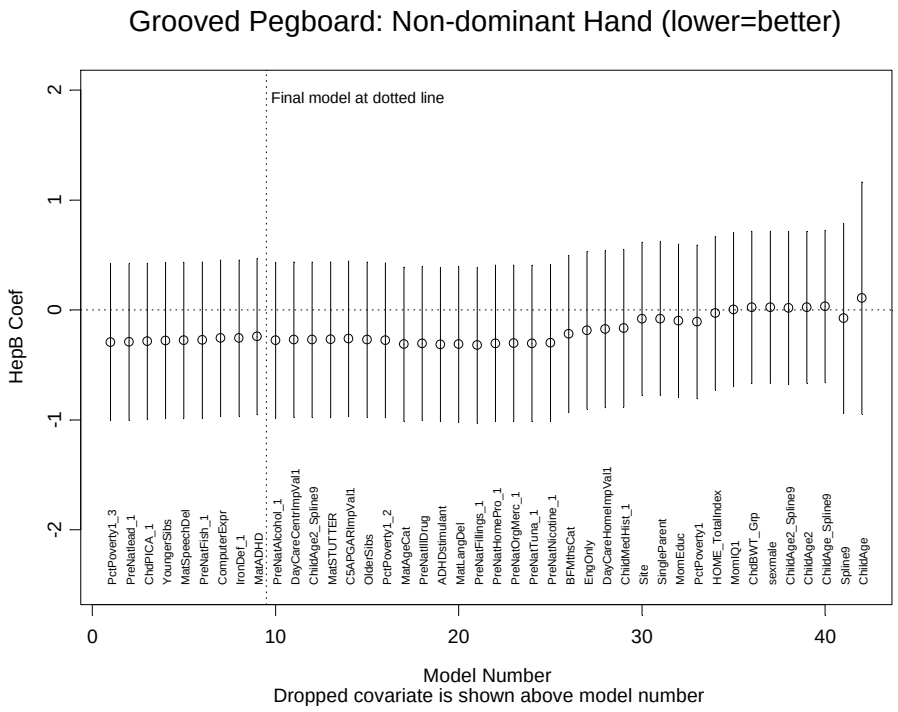


Exhibit D.4.3.20. Finger Tapping: Dominant Hand
HepB: Change in Estimate and Precision as Covariates Are Dropped

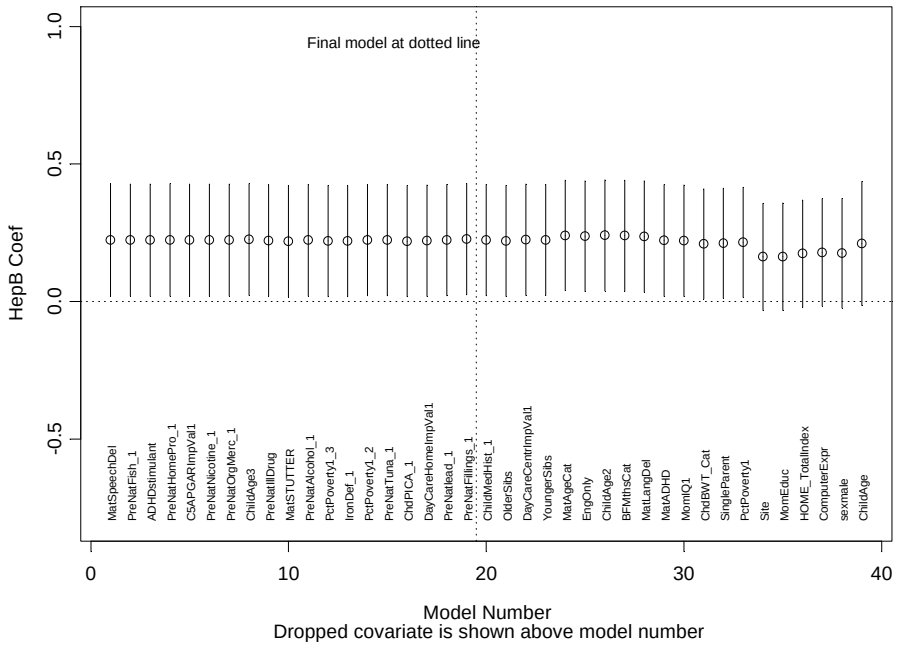


Exhibit D.4.3.21. Finger Tapping: Non-dominant Hand
HepB: Change in Estimate and Precision as Covariates Are Dropped

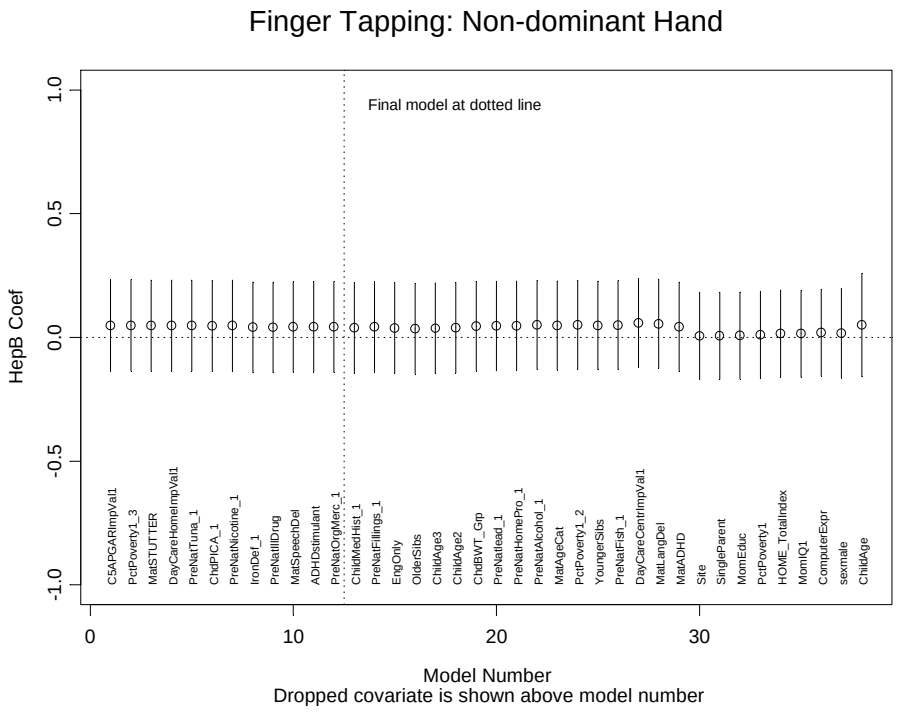


Exhibit D.4.3.22. Stanford Binet: Copying
HepB: Change in Estimate and Precision as Covariates Are Dropped

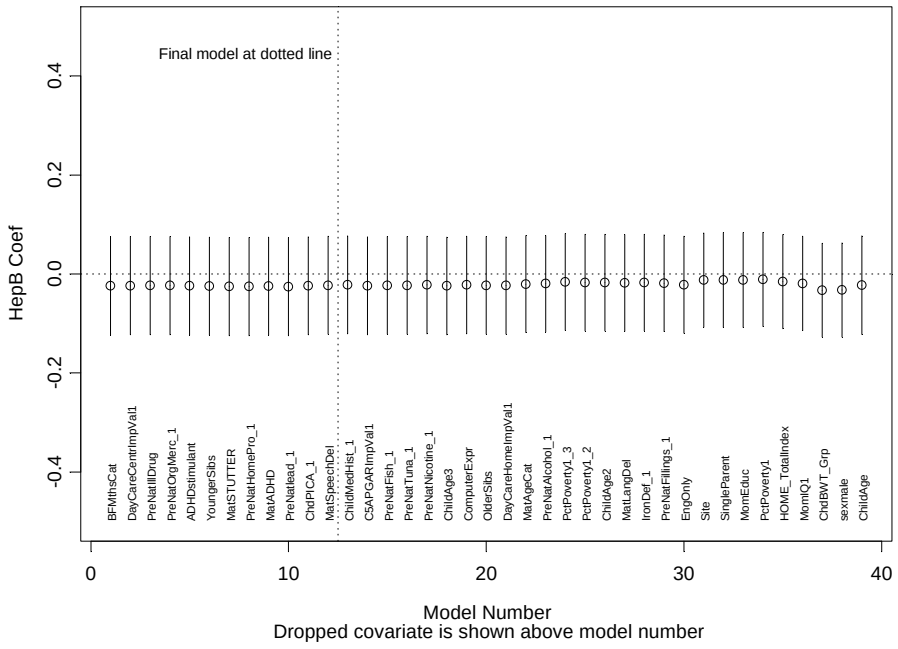


Exhibit D.4.3.23. GDS Vigilance Task: Correct Responses
HepB: Change in Estimate and Precision as Covariates Are Dropped

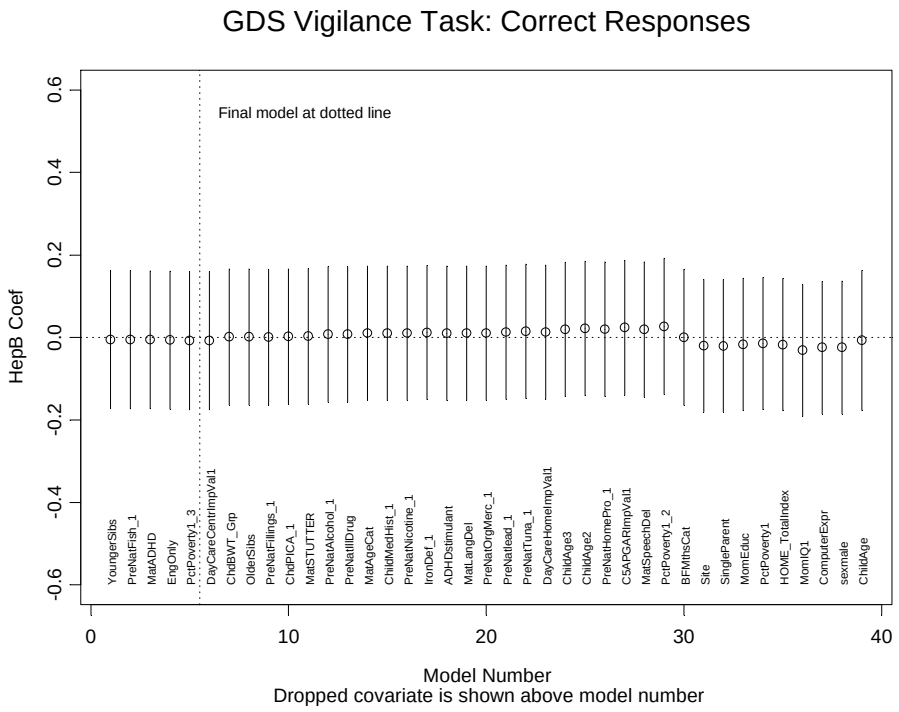


Exhibit D.4.3.24. GDS Vigilance Task: Errors (lower=better)
HepB: Change in Estimate and Precision as Covariates Are Dropped

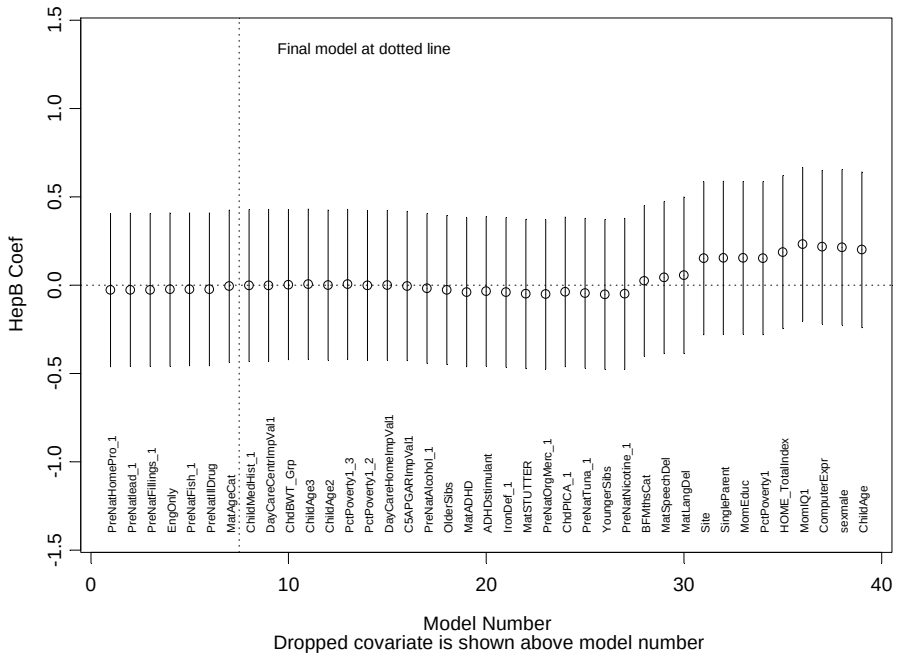


Exhibit D.4.3.25. WISC III: Digit Span, Forward Recall
HepB: Change in Estimate and Precision as Covariates Are Dropped

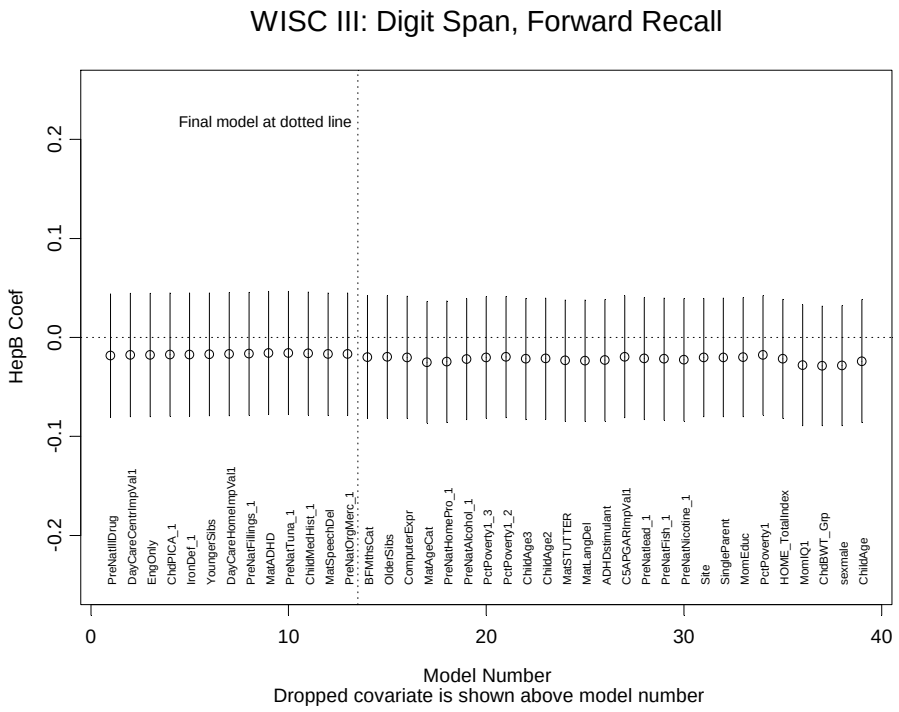


Exhibit D.4.3.26. WISC III: Digit Span, Backward Recall
HepB: Change in Estimate and Precision as Covariates Are Dropped

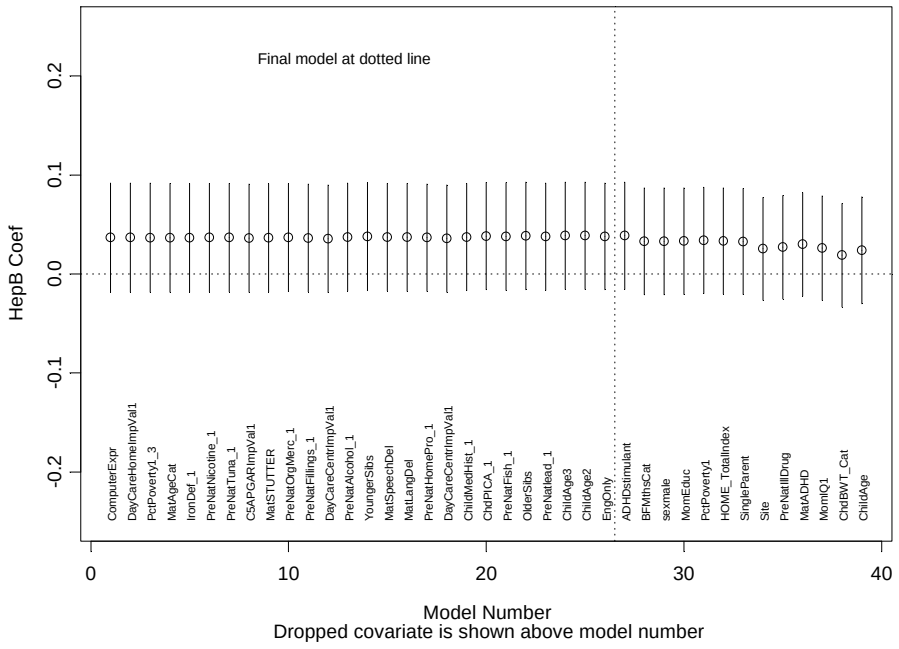


Exhibit D.4.3.27. WISC III: Digit Span, Combined
HepB: Change in Estimate and Precision as Covariates Are Dropped

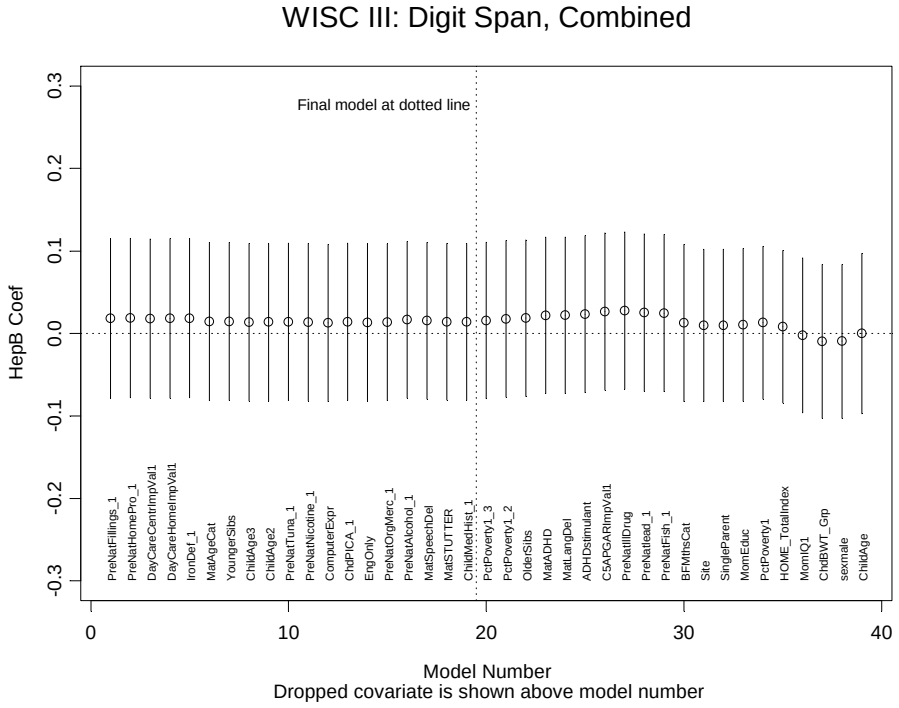


Exhibit D.4.3.28. BRIEF Parent Rating: Metacognition (lower = better)
HepB: Change in Estimate and Precision as Covariates Are Dropped

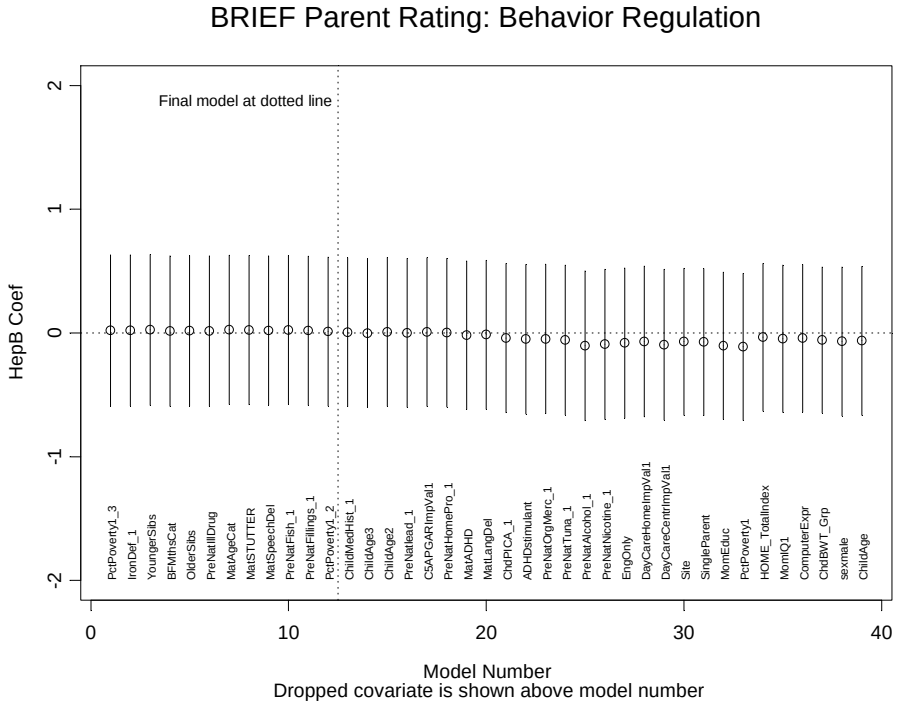


Exhibit D.4.3.29. BRIEF Teacher Rating: Metacognition (lower = better)
HepB: Change in Estimate and Precision as Covariates Are Dropped

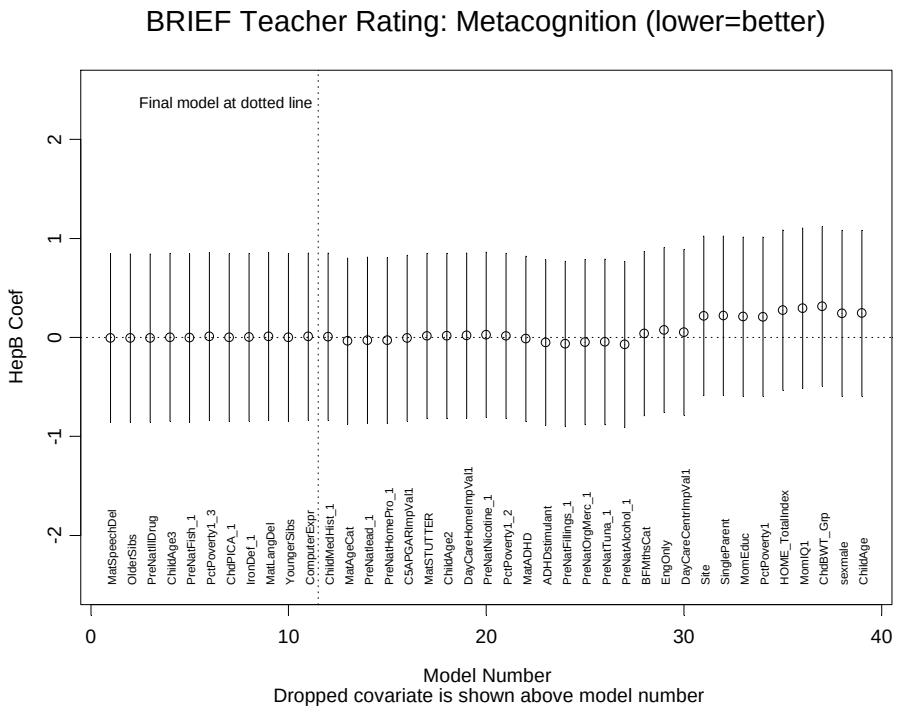


Exhibit D.4.3.30. CRS-R: Parent Rating: Hyperactive/Impulsive (lower = better)
HepB: Change in Estimate and Precision as Covariates Are Dropped

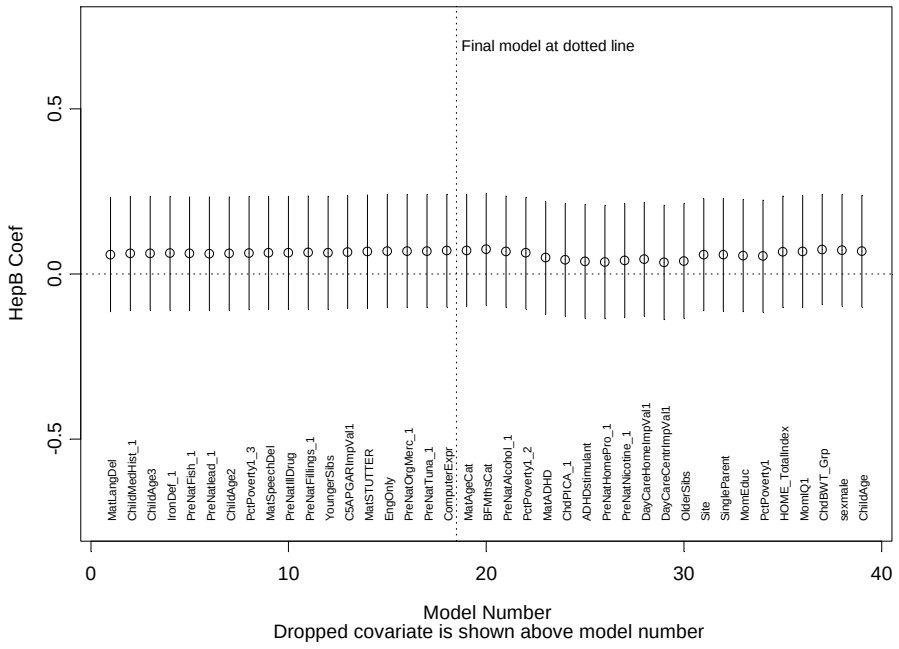


Exhibit D.4.3.31. CRS-R: Teacher Rating: Hyperactive/Impulsive (lower = better)
HepB: Change in Estimate and Precision as Covariates Are Dropped

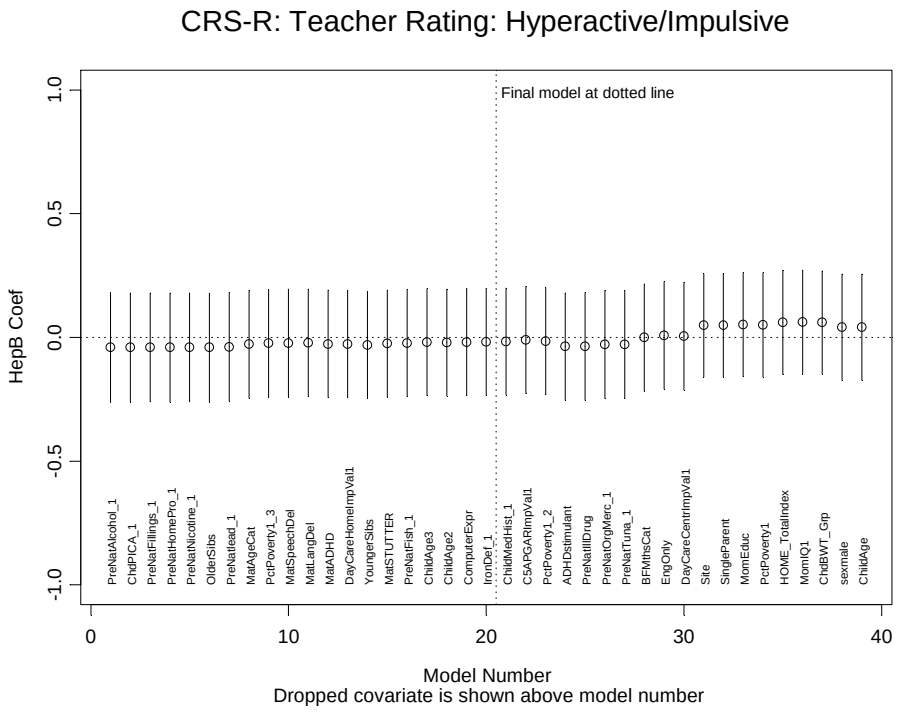


Exhibit D.4.3.32. CRS-R: Parent Rating: Inattentive (lower = better)
HepB: Change in Estimate and Precision as Covariates Are Dropped

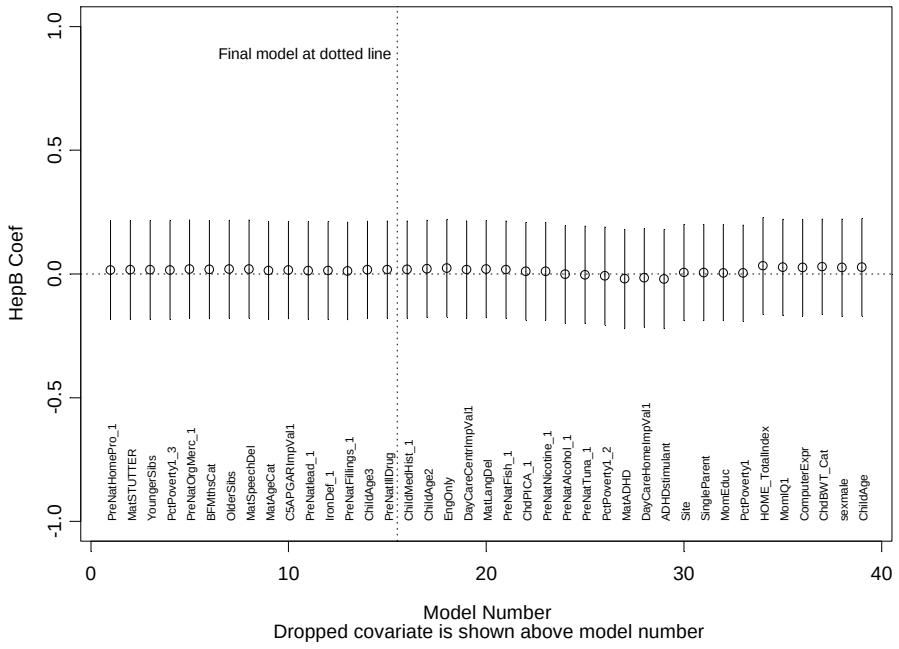


Exhibit D.4.3.33. CRS-R: Teacher Rating: Inattentive (lower = better)
HepB: Change in Estimate and Precision as Covariates Are Dropped

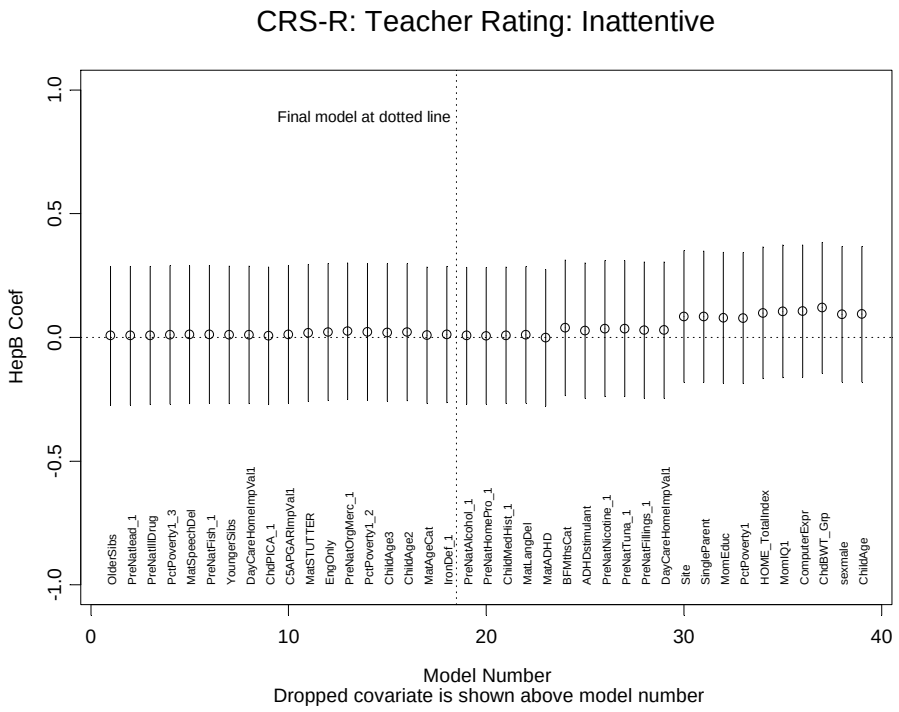


Exhibit D.4.3.34. BRIEF Parent Rating: Behavior Regulation (lower = better)
HepB: Change in Estimate and Precision as Covariates Are Dropped

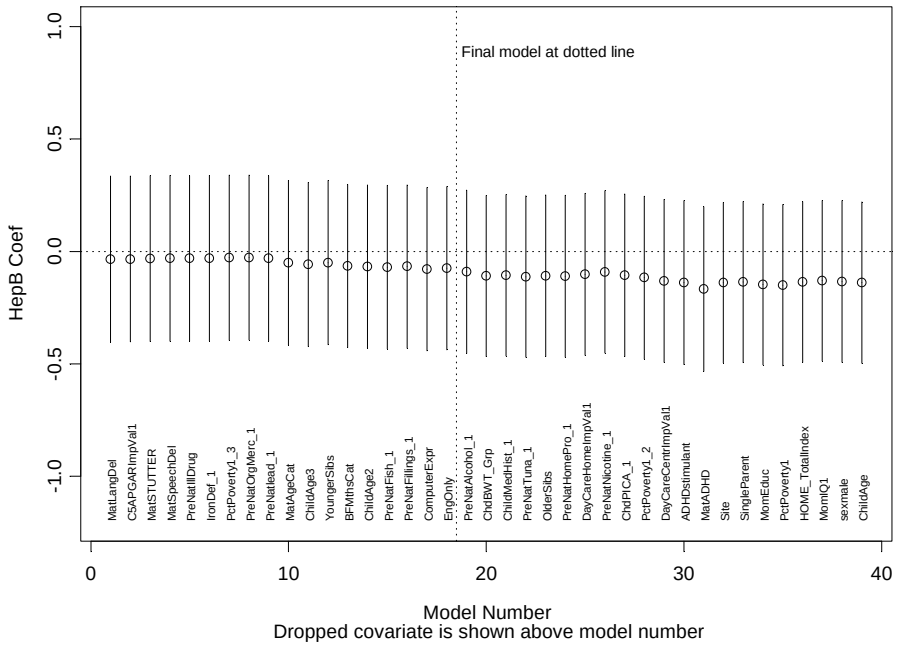


Exhibit D.4.3.35. BRIEF Teacher Rating: Behavior Regulation (lower = better)
HepB: Change in Estimate and Precision as Covariates Are Dropped

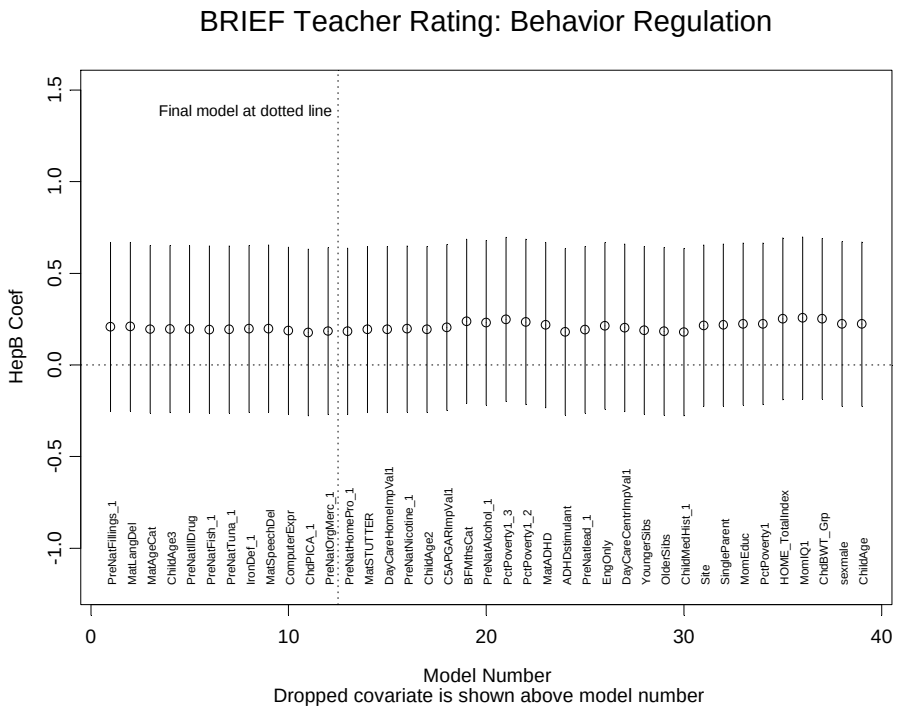


Exhibit D.4.3.36. Motor tics (current): Assessor Rating (lower = better)
HepB: Change in Estimate and Precision as Covariates Are Dropped

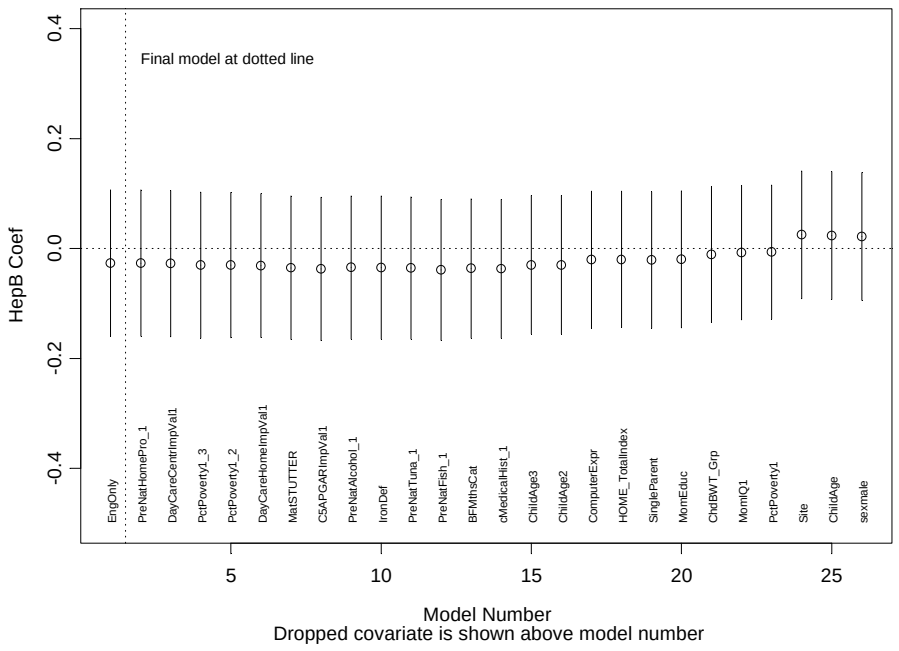


Exhibit D.4.3.37. Phonics tics (current): Assessor Rating (lower = better)
HepB: Change in Estimate and Precision as Covariates Are Dropped

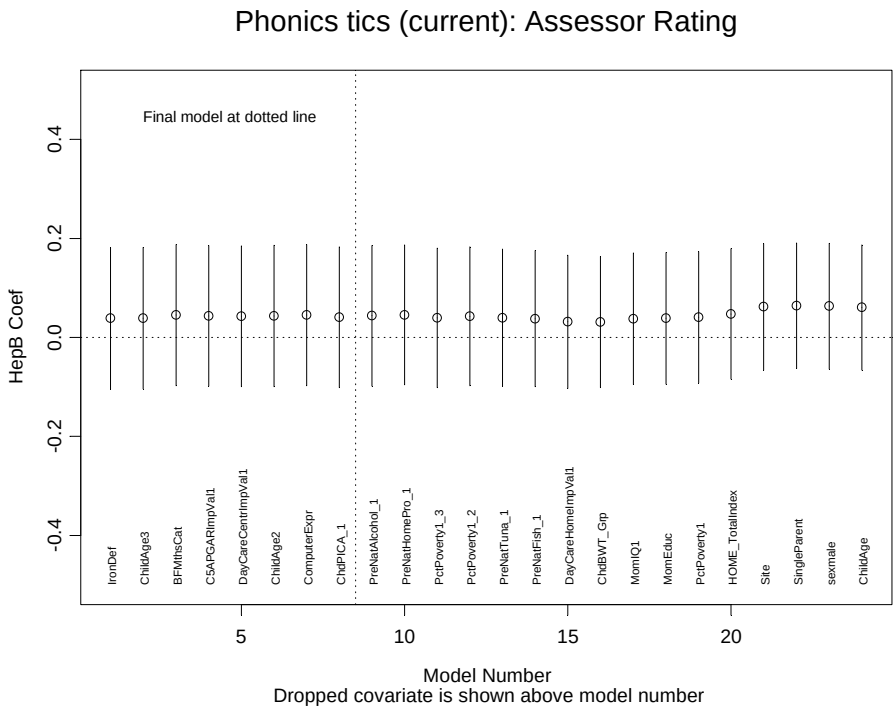


Exhibit D.4.3.38. Motor tics (current): Parent Rating (lower = better)
HepB: Change in Estimate and Precision as Covariates Are Dropped

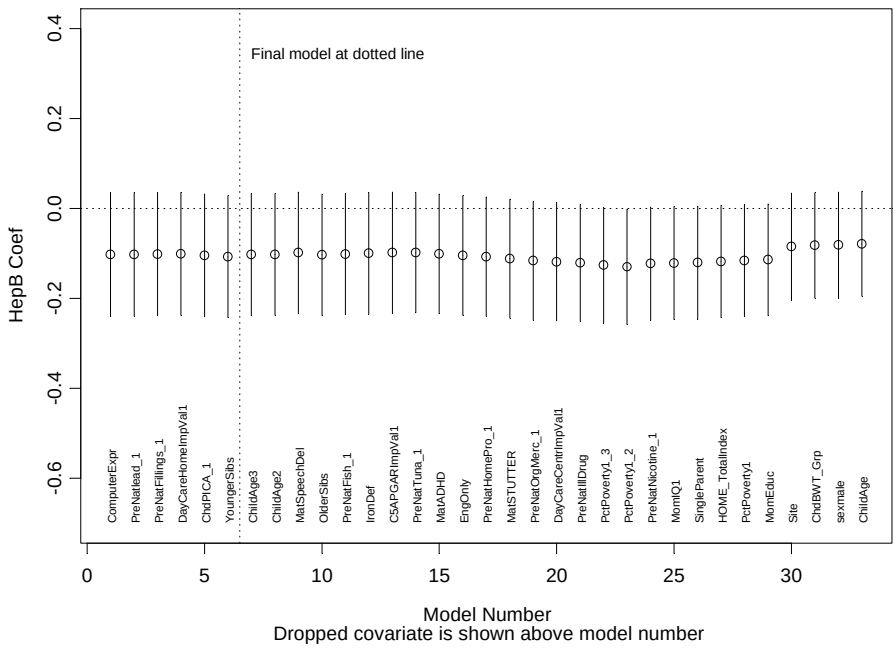


Exhibit D.4.3.39. Phonics tics (current): Parent Rating (lower = better)
HepB: Change in Estimate and Precision as Covariates Are Dropped

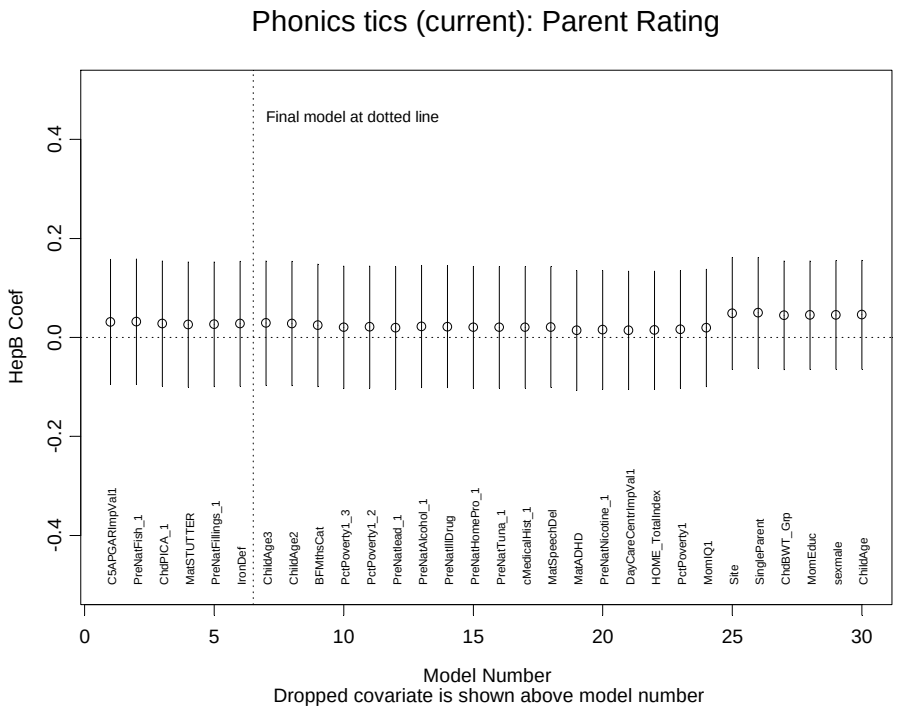


Exhibit D.4.3.40. WASI Verbal IQ
HepB: Change in Estimate and Precision as Covariates Are Dropped

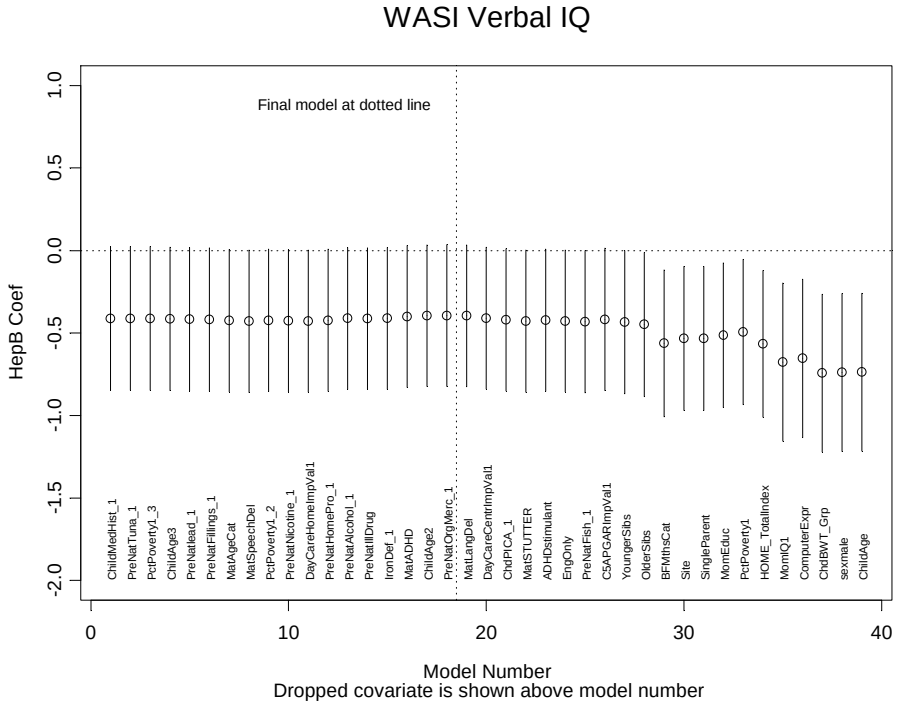


Exhibit D.4.3.41. WASI Performance IQ
HepB: Change in Estimate and Precision as Covariates Are Dropped

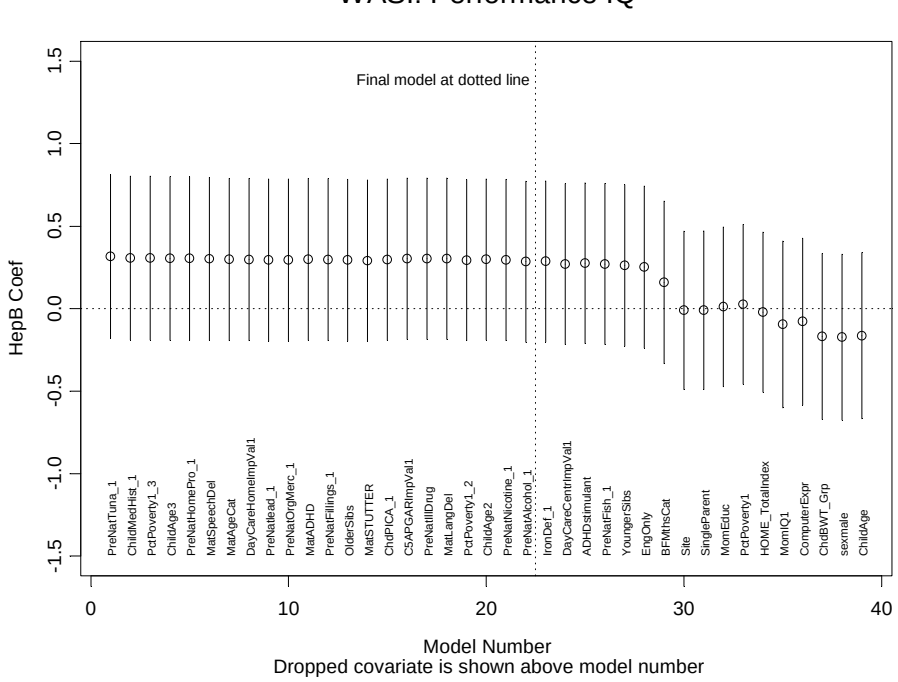
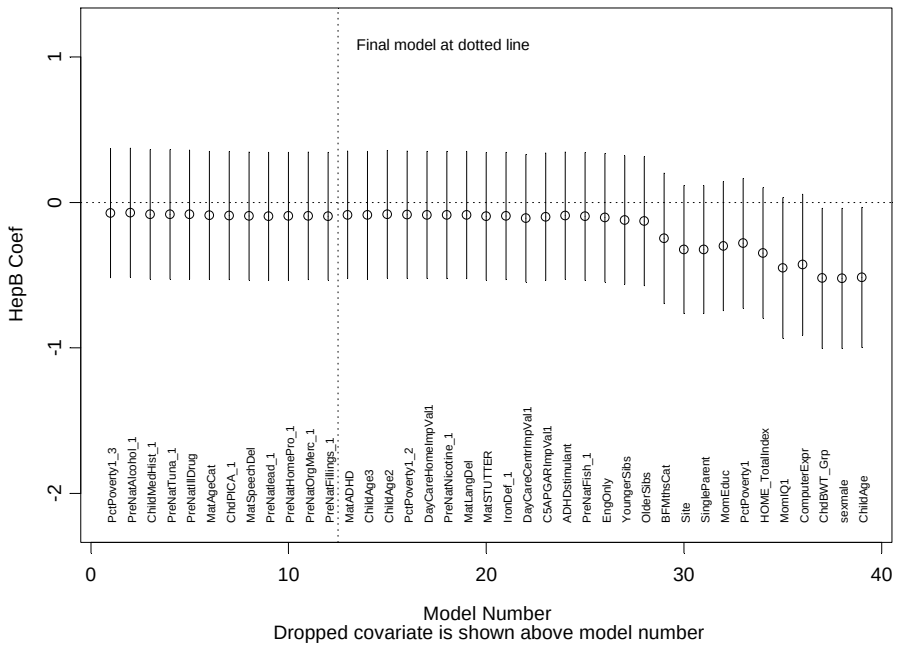


Exhibit D.4.3.42. WASI Full Scale IQ
HepB: Change in Estimate and Precision as Covariates Are Dropped



5. Appendix E. Post-Analysis Estimates of Power to Detect Effects

This appendix addresses the following question:

> Given the final sample size, sample composition, exposure distribution, and number of variables, what was the power to detect a small effect for each exposure type (prenatal, birth to seven months, birth to one month?

Prior to data collection, we had estimated that the study would have approximately 90% power to detect small effects. We had defined a "small effect" as standardized regression coefficient equal to 0.10[12]. This power estimate was calculated using power formulas provided by Cohen (1988), and using a two sided test and $p<0.05$ alpha-level criterion, and assuming models would contain as many as 30 covariates. Using the formulas provided by Cohen (1988), we obtained the same estimate of approximately 90% power to detect small effects of either prenatal, cumulative exposures 0 to 7 months, and cumulative exposures birth to 28 days. In our analysis plan, we had also presented estimates obtained via simulations, and using exposure distributions that we expected to obtain in the study. Those simulations produced results that were similar to the simple formulas provided by Cohen (1988), in that both methods indicated that the study would be well powered to detect small effects.

After completion of data collection and analyses, we can re-compute power using results obtained from the analysis to evaluate whether our pre-study projections were on target. For comparative purposes, we will also present estimates from the Faroe Islands study. Jacobson (2001) indicated that "five of the eight effects reported in the Faroe Islands study were exceedingly small". For the Faroe Island study, we have enough information to calculate estimates for the eight outcomes discussed in the Jacobson (2001) article. For each outcome measure, we present the power to detect a small effect, and we present the minimum detectable standardized effect sizes (MDSES) corresponding to 80% and 90% power. The MDSES's are expressed as standardized regression coefficients.

Let $\hat{\theta}$, and $s.e.(\hat{\theta})$ represent an estimate and standard error of a standardized regression coefficient. Then the MDSES can be obtained as:

(1) $\text{MDSES} = (t_{\alpha/2} + t_{\beta})s.e.(\hat{\theta})$

For a two-tailed test with alpha equal to 0.05, and 80% power, we have

(2) $\text{MDSES} = (1.96 + 0.8416)s.e.(\hat{\theta}) = (2.8016)s.e.(\hat{\theta})$.

[12] Cohen (1988) suggests that a standardized regression coefficient of 0.10 is a small effect, and this is within the range of effects detected by the Faroe Islands study (0.05 to 0.18, as per Jacobson (2001)).

For a two-tailed test with alpha equal to 0.05, and 90% power, we have

(3) MDSES = $(1.96+1.2815)s.e.(\hat{\theta}) = (3.2415)s.e.(\hat{\theta})$.

In order to perform the calculations for the Faroe Islands data, we need to obtain the values of $s.e.(\hat{\theta})$ for each outcome measure. Combining the information presented in Grandjean et. al., (1997), Budtz-Jorgensen et. al, (2007), and Jacobson (2001) we have enough information to calculate $s.e.(\hat{\theta})$ for each of 8 outcome measures. From Grandjean et. al., (1997), we have the number of non-missing observations used in the analyses for each outcome, and the p-value corresponding to the effect estimate. From Jacobson (2001), we have exposure and endpoint standard deviations, and conversion to standardized regression coefficients for 8 outcome measures. From Budtz-Jorgensen et. al, (2001), we know that 20 covariates were tested for inclusion in each model and that, for at least one outcome the final model included 12 of the 20 covariates. Given a p-value and the degrees of freedom, one can obtain the corresponding t-value by use of tables or computerized functions. We used the qt() function in Splus version 7.0. Given a t-value and the value of the standardized regression coefficient, one can solve the formula

(4) $$t = \frac{\hat{\theta}}{s.e.(\hat{\theta})}$$

to obtain

(5) $s.e.(\hat{\theta}) = \frac{abs(\hat{\theta})}{t}$, where $abs(\hat{\theta})$ is the absolute value of $\hat{\theta}$.

The power to detect a small effect is obtained by setting MDSES in eq (1) to 0.10, and solving for t_β, i.e.,

(6) $$t_\beta = \frac{MDSES}{s.e.(\hat{\theta})} - t_{\alpha/2} = \frac{0.10}{s.e.(\hat{\theta})} - 1.96$$

Exhibit E.1 shows the resulting MDSES's corresponding to 80% and 90% power. For example, for the Finger Tapping outcome, the Faroe Islands study had 80% power to detect an effect of size 0.100 or larger and 90% power to detect an effect of size 0.116 or larger. The last column of the exhibit shows the power to detect a small effect size (i.e. standardized regression coefficient = 0.10). For the Finger Tapping outcome, the study had 80 percent power to detect a small effect.

For the eight outcomes shown and 80 percent power, MDSES's ranged from 0.071 to 0.152. For 90% power MDSES's range from 0.083 to 0.176. The power detect a small effect ranged from 45 to 98 percent.

Exhibit E.2 shows power estimates from the Study of Prenatal and Infant Exposure to Thimerosal and Neuropsychological Outcomes at Ages 7 to 10 Years. The power to detect small effects was at 0.79 or above for all outcomes except for teacher rated measures of behavior regulation attention/executive functioning. The sample sizes were lower for those measures due to non-response of teachers. For the teacher rated measures the power to detect small effects was as low as 67 percent for birth to 7 month exposures. The power was well over 80 percent for all but a few of the remaining outcomes, and the power to detect small effects was well over 90 percent for the majority of effects.

The MDSES's ranged from 0.056 to 0.117 for 80% power and from 0.65 to 0.135 for 90% power.

This analysis indicates the power of the current study was in good agreement with what had been projected during the design phase. Furthermore, the current study tended to have greater power to detect small effects than the Faroe Islands study, as was expected since the current study had a larger sample size and a more comprehensive set of covariates.

Exhibit E.1: For Eight Outcome Measures From Faroe Islands Study
Estimated Minimum Detectable Standardized Effect Sizes (MDSES) for 80% and 90% Power
And
Power to Detect Effect Size of 0.10

	Values Provided in Published Articles				Calculated Values			
Outcome	**StdCoef[a]** $\hat{\theta}$	**N[b]**	**Number of Covariates[c]**	**p-value[b]**	**Std Err** $\hat{\theta}$	**MDSES 80% Power**	**MDSES 90% Power**	**Power to Detect Effect Size 0.10**
Finger Tapping	-0.07	901	12	0.05	0.036	0.100	0.116	0.80
CPT: errors	0.08	431	12	0.02	0.034	0.096	0.111	0.83
CPT: reaction time	0.18	428	12	0.001	0.054	0.152	0.176	0.45
Digit span	-0.06	889	12	0.05	0.031	0.086	0.099	0.90
Boston Naming: no cues	-0.12	866	12	0.0003	0.033	0.093	0.107	0.86
Boston Naming: cues	-0.13	865	12	0.0001	0.033	0.093	0.108	0.85
CVLT: short-term recall	-0.06	867	12	0.02	0.026	0.072	0.083	0.97
CVLT: long-term recall	-0.05	837	12	0.05	0.025	0.071	0.083	0.98

a From Jacobson (2001); b from Grandjean et. al 1997; c from Budtz-Jorgensen et. al (2001), exact number of covariates for each outcome unknown, but this article shows that 20 were considered and 12 were used in model for at least one outcome measure.

Exhibit E.2: Current Study
Estimated Minimum Detectable Standardized Effect Sizes (MDSES) for 80% and 90% Power And Power to Detect Effect Size of 0.10

	PreNatThimer				HepB (Exposure Birth to 28 Days)				Exp07mos (Exposure Birth to 7 Months)			
	Std Err $\hat{\theta}$	**MDSES 80% Power**	**MDSES 90% Power**	**Power to Detect Effect Size 0.10**	**Std Err $\hat{\theta}$**	**MDSES 80% Power**	**MDSES 90% Power**	**Power to Detect Effect Size 0.10**	**Std Err $\hat{\theta}$**	**MDSES 80% Power**	**MDSES 90% Power**	**Power to Detect Effect Size 0.10**
Boston Naming Test	0.022	0.061	0.071	1.00	0.023	0.065	0.075	0.99	0.027	0.075	0.086	0.96
NEPSY: Speeded Naming	0.028	0.078	0.090	0.95	0.028	0.080	0.092	0.94	0.033	0.093	0.108	0.85
NEPSY: Comprehension of Instructions	0.030	0.083	0.096	0.92	0.029	0.082	0.095	0.93	0.033	0.092	0.107	0.86
CELF: Formulated Sentences	0.026	0.073	0.084	0.97	0.027	0.075	0.087	0.96	0.032	0.089	0.103	0.88
CELF: Recalling Sentences	0.026	0.072	0.083	0.97	0.026	0.074	0.085	0.97	0.030	0.085	0.098	0.91
GFTA: Articulation	0.031	0.086	0.099	0.90	0.030	0.084	0.097	0.92	0.034	0.094	0.109	0.84
CVLT-C: Free Recall, No Delay	0.028	0.079	0.092	0.94	0.029	0.081	0.094	0.93	0.034	0.094	0.109	0.84
CVLT-C: Free Recall, Short Delay	0.028	0.078	0.090	0.95	0.030	0.083	0.096	0.92	0.034	0.096	0.111	0.83
CVLT-C: Cued Recall, Short Delay	0.028	0.078	0.090	0.95	0.028	0.080	0.092	0.94	0.033	0.091	0.105	0.87
CVLT-C: Free Recall, Long Delay	0.030	0.084	0.097	0.92	0.030	0.083	0.096	0.92	0.034	0.095	0.110	0.83
CVLT-C: Cued Recall, Long Delay	0.027	0.074	0.086	0.96	0.029	0.081	0.094	0.93	0.034	0.095	0.110	0.83
CMS Stories 1: Immediate Recall	0.022	0.063	0.073	0.99	0.023	0.065	0.075	0.99	0.027	0.076	0.088	0.96
CMS Stories 2: Delayed Recall	0.023	0.063	0.073	0.99	0.023	0.066	0.076	0.99	0.027	0.076	0.088	0.96
WJIII: Letter- Word Identification	0.023	0.064	0.074	0.99	0.024	0.066	0.077	0.99	0.028	0.078	0.091	0.95
Grooved Pegboard: Dominant Hand	0.019	0.054	0.063	1.00	0.020	0.056	0.064	1.00	0.023	0.064	0.074	0.99
Grooved Pegboard: Non-dom Hand	0.020	0.056	0.065	1.00	0.021	0.058	0.067	1.00	0.024	0.068	0.078	0.99
Finger Tapping: Dominant Hand	0.027	0.075	0.087	0.96	0.028	0.077	0.090	0.95	0.032	0.091	0.105	0.87
Finger Tapping: Non-dominant Hand	0.026	0.074	0.085	0.97	0.027	0.075	0.087	0.96	0.032	0.088	0.102	0.89
Stanford Binet: Copying	0.030	0.085	0.099	0.91	0.030	0.085	0.099	0.91	0.036	0.099	0.115	0.80
GDS Vigilance Task: Correct Responses	0.029	0.080	0.093	0.94	0.030	0.084	0.097	0.92	0.034	0.096	0.111	0.83
GDS Vigilance Task: Errors	0.029	0.082	0.095	0.93	0.030	0.084	0.097	0.92	0.035	0.099	0.114	0.81
WISC III: Digit Span, Forward Recall	0.031	0.086	0.099	0.90	0.030	0.084	0.097	0.92	0.034	0.094	0.109	0.84
WISC III: Digit Span, Backward Recall	0.031	0.087	0.101	0.89	0.031	0.086	0.100	0.90	0.036	0.099	0.115	0.80
WISC III: Digit Span, Combined	0.028	0.078	0.090	0.95	0.030	0.083	0.096	0.92	0.033	0.093	0.107	0.85
BRIEF Parent Rating: Metacognition	0.030	0.083	0.096	0.92	0.031	0.086	0.100	0.90	0.036	0.099	0.115	0.80
BRIEF Teacher Rating: Metacognition	0.032	0.091	0.105	0.87	0.034	0.096	0.111	0.83	0.041	0.115	0.133	0.68
CRS-R: Parent Rating: Hyperactive/Impulsive	0.029	0.082	0.095	0.93	0.031	0.088	0.101	0.89	0.036	0.101	0.117	0.79
CRS-R: Teacher Rating:	0.031	0.088	0.102	0.89	0.034	0.095	0.110	0.84	0.040	0.113	0.131	0.70

Exhibit E.2: Current Study

Estimated Minimum Detectable Standardized Effect Sizes (MDSES) for 80% and 90% Power And Power to Detect Effect Size of 0.10

	PreNatThimer				HepB (Exposure Birth to 28 Days)				Exp07mos (Exposure Birth to 7 Months)			
	Std Err $\hat{\theta}$	**MDSES 80% Power**	**MDSES 90% Power**	**Power to Detect Effect Size 0.10**	**Std Err $\hat{\theta}$**	**MDSES 80% Power**	**MDSES 90% Power**	**Power to Detect Effect Size 0.10**	**Std Err $\hat{\theta}$**	**MDSES 80% Power**	**MDSES 90% Power**	**Power to Detect Effect Size 0.10**
Hyperactive/Impulsive												
CRS-R: Parent Rating: Inattentive	0.030	0.083	0.096	0.92	0.031	0.087	0.100	0.90	0.036	0.101	0.117	0.79
CRS-R: Teacher Rating: Inattentive	0.031	0.088	0.102	0.89	0.034	0.096	0.111	0.83	0.041	0.116	0.134	0.68
BRIEF Parent Rating: Behavior Regulation	0.030	0.085	0.099	0.91	0.031	0.087	0.101	0.89	0.036	0.100	0.116	0.80
BRIEF Teacher Rating: Behavior Regulation	0.033	0.092	0.107	0.86	0.035	0.097	0.112	0.82	0.042	0.117	0.135	0.67
WASI Verbal IQ	0.027	0.075	0.087	0.96	0.027	0.077	0.089	0.96	0.032	0.089	0.102	0.89
WASI Performance IQ	0.029	0.082	0.095	0.93	0.030	0.084	0.097	0.92	0.034	0.095	0.110	0.84
WASI Full Scale IQ	0.027	0.076	0.088	0.96	0.028	0.078	0.091	0.95	0.033	0.091	0.106	0.87

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