Breastfeeding Structural

Contents

1 Participant Characteristics

	Full Sample	Boys	Girsl
Total(*N*)	149	73	76
Age (*Mean [range], yrs*)	9.0 [7.1 - 12.0]	9.0 [7.1 - 12.0]	9.0 [7.1 - 11.8]
BMI (*Mean [range]*)	17.8 [13.8 - 31.9]	17.7 [13.9 - 31.9]	17.9 [13.8 - 25.9]
Percent of CDC 85th %tile (*Mean [range]*)	94.0 [70.1 - 168.8]	94.7 [72.7 - 168.8]	93.4 [70.1 - 131.1]
BMI %tile (*Mean [range]*)	59.9 [5 - 99]	59.3 [5 - 99]	60.5 [6.1 - 98]
Race(*N*)			
Black/AA	7	5	2
White	136	64	72
Other/Mixed	6	4	2
Ethnicity(*N*)			
Hispanic/Latino	6	3	3
Not H/L	120	59	61
NA	1	1	0
SES(*N*)			
>$100,000	49	26	23
$50,000-$100,000	69	30	39
<$50,000	28	16	12
NA	0	0	0
Maternal Education(*N*)			
$> BA$	50	22	28
BA	54	30	24
$Associates/Technical$	18	7	11
$HighSchool$	15	8	7
$Other/NA$	0	0	0
$< HighSchoolDiploma/GED$	0	0	0
Paternal Education(*N*)			
$> BA$	57	28	29
BA	38	22	16
$Associates/Technical$	15	5	10
$HighSchool$	23	9	14
$Other/NA$	1	1	0
$< HighSchoolDiploma/GED$	1	1	0
BreastFed 3cat(*N*)			
$> 6months$	54	24	30
$4 - 6months$	55	29	26
$0 - 3months$	40	20	20

1.1 Age

```
    Welch Two Sample t-test

data:  cAge_yr by sex
t = 0.20787, df = 146.95, p-value = 0.8356
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.3526448  0.4355526
sample estimates:
mean in group Female   mean in group Male
            9.006104             8.964650
```

1.2 BMI

```
    Welch Two Sample t-test

data:  cBodyMass_index by sex
t = 0.4145, df = 145.04, p-value = 0.6791
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.8137089  1.2455786
sample estimates:
mean in group Female   mean in group Male
            17.86838             17.65244
```

1.3 BMI percentile

```
    Welch Two Sample t-test

data:  cBodyMass_p by sex
t = 0.26999, df = 146.26, p-value = 0.7875
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -7.843167 10.325179
sample estimates:
mean in group Female   mean in group Male
            60.53553             59.29452
```

1.4 Maternal Ed

```
    Fisher's Exact Test for Count Data

data:  mED.sex_tab
p-value = 0.6517
alternative hypothesis: two.sided
```

1.5 Paternal Ed

```
    Fisher's Exact Test for Count Data

data:  pED.sex_tab
p-value = 0.244
alternative hypothesis: two.sided
```

1.6 Race

```
    Fisher's Exact Test for Count Data

data:  race.sex_tab
p-value = 0.3346
alternative hypothesis: two.sided
```

1.7 Ethnicity

```
    Fisher's Exact Test for Count Data

data:  ethnicity.sex_tab
p-value = 1
alternative hypothesis: true odds ratio is not equal to 1
95 percent confidence interval:
 0.1245066 7.5172554
sample estimates:
odds ratio
 0.9674603
```

1.8 SES

```
    Fisher's Exact Test for Count Data

data:  income.sex_tab
p-value = 0.3825
alternative hypothesis: two.sided
```

2 3.1 Descriptive Statistics for Covariates

2.1 BF

2.1.1 Age

```
Anova Table (Type II tests)

Response: TIV
                Sum Sq  Df F value  Pr(>F)
BreastFed_3cat   61226   2  2.4045 0.09395 .
Residuals      1820588 143
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

    >6mo    0-3mo    4-6mo
1488.602 1467.938 1518.769

     >6mo     0-3mo     4-6mo
 95.33367 117.40115 124.84202
```

2.1.2 TIV

```
Anova Table (Type II tests)

Response: TIV
                Sum Sq  Df F value  Pr(>F)
BreastFed_3cat   61226   2  2.4045 0.09395 .
Residuals      1820588 143
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

    >6mo    0-3mo    4-6mo
1488.602 1467.938 1518.769

     >6mo     0-3mo     4-6mo
 95.33367 117.40115 124.84202
```

2.1.3 Sex

```
    Fisher's Exact Test for Count Data

data:  sex.BreastFed_3cat_tab
p-value = 0.5945
alternative hypothesis: two.sided
```

2.1.4 Maternal Education

```
    Fisher's Exact Test for Count Data

data:  mED.BreastFed_3cat_tab
p-value = 0.9948
```

```
alternative hypothesis: two.sided
```

2.1.5 Income

```
    Pearson's Chi-squared test

data:  income.BreastFed_3cat_tab
X-squared = 8.3969, df = 4, p-value = 0.07807
```

2.1.6 Premature

```
    Pearson's Chi-squared test

data:  premat.BreastFed_3cat_tab
X-squared = 0.039254, df = 2, p-value = 0.9806
```

2.2 SR

2.2.1 Age

```
    Pearson's product-moment correlation

data:  BFstructural_Dat$cebq_SR and BFstructural_Dat$cAge_yr
t = -1.1461, df = 144, p-value = 0.2537
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.25360494  0.06843193
sample estimates:
        cor
-0.09507336
```

2.2.2 TIV

```
    Pearson's product-moment correlation

data:  BFstructural_Dat$TIV and BFstructural_Dat$cebq_SR
t = -0.714, df = 144, p-value = 0.4764
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.2197235  0.1040573
sample estimates:
       cor
-0.0593951
```

2.2.3 Sex

```
    Welch Two Sample t-test

data:  cebq_SR by sex
t = 1.0185, df = 143.13, p-value = 0.3102
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.09642919  0.30142450
sample estimates:
mean in group Female   mean in group Male
            2.930667             2.828169
```

2.2.4 Maternal Education

```
Anova Table (Type II tests)

Response: cebq_SR
               Sum Sq  Df F value Pr(>F)
mEducation_cat  0.746   3  0.6863  0.562
Residuals      47.102 130
```

2.2.5 Income

```
Anova Table (Type II tests)

Response: cebq_SR
            Sum Sq  Df F value  Pr(>F)
income_3cat  2.429   2  3.3458 0.03807 *
Residuals   50.821 140
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

2.2.6 Premature

```
    Welch Two Sample t-test

data:  cebq_SR by cPreMat
t = 0.94111, df = 20.749, p-value = 0.3575
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.1753275  0.4647940
sample estimates:
 mean in group No mean in group Yes
        2.897674          2.752941
```

2.3 %BMIp85

2.3.1 Age

```
    Pearson's product-moment correlation

data:  BFstructural_Dat$cAge_yr and BFstructural_Dat$cdc_p85th
t = 1.379, df = 144, p-value = 0.17
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.04919698  0.27157561
sample estimates:
      cor
0.1141638
```

2.3.2 TIV

```
    Pearson's product-moment correlation

data:  BFstructural_Dat$TIV and BFstructural_Dat$cdc_p85th
t = 0.85574, df = 144, p-value = 0.3936
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.09238515  0.23091094
sample estimates:
       cor
0.07113075
```

2.3.3 Sex

```
    Welch Two Sample t-test

data:  cdc_p85th by sex
t = -0.41282, df = 140.72, p-value = 0.6804
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.06124741  0.04008735
sample estimates:
mean in group Female   mean in group Male
           0.9331136            0.9436936
```

2.3.4 Maternal Education

```
Anova Table (Type II tests)

Response: cdc_p85th
               Sum Sq  Df F value  Pr(>F)
mEducation_cat 0.26164   3  3.7459 0.01274 *
Residuals      3.02667 130
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

2.3.5 Income

```
Anova Table (Type II tests)

Response: cdc_p85th
            Sum Sq  Df F value Pr(>F)
income_3cat 0.0732   2  1.5499 0.2159
Residuals   3.3045 140
```

2.3.6 Prematurity

```
    Welch Two Sample t-test

data:  cdc_p85th by cPreMat
t = 1.5838, df = 29.484, p-value = 0.1239
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.01245349  0.09821069
sample estimates:
 mean in group No mean in group Yes
       0.9432514         0.9003728
```

2.4 Left Hippocampus

2.4.1 Age

```
    Pearson's product-moment correlation

data:  BFstructural_Dat$cAge_yr and BFstructural_Dat$lHip_21
t = 2.6322, df = 144, p-value = 0.00941
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.05367256 0.36403114
sample estimates:
      cor
0.2142529
```

2.4.2 TIV

```
    Pearson's product-moment correlation

data:  BFstructural_Dat$TIV and BFstructural_Dat$lHip_21
t = 11.039, df = 144, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.5781747 0.7563017
sample estimates:
      cor
0.6770337
```

2.4.3 Sex

```
    Welch Two Sample t-test

data:  lHip_21 by sex
t = -3.3747, df = 139.21, p-value = 0.0009578
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.21318953 -0.05566994
sample estimates:
mean in group Female   mean in group Male
            2.867348             3.001778
```

2.4.4 Maternal Education

```
Anova Table (Type II tests)

Response: lHip_21
               Sum Sq  Df F value Pr(>F)
mEducation_cat 0.1041   3  0.5598 0.6425
Residuals      8.0587 130
```

2.4.5 Income

```
Anova Table (Type II tests)

Response: lHip_21
            Sum Sq  Df F value   Pr(>F)
income_3cat 0.5876   2  4.9576 0.008313 **
Residuals   8.2973 140
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

2.4.6 Prematurity

```
    Welch Two Sample t-test

data:  lHip_21 by cPreMat
t = 2.2391, df = 21.321, p-value = 0.03593
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 0.009569609 0.255978957
sample estimates:
 mean in group No mean in group Yes
        2.948182          2.815407
```

2.5 Right Hippocampus

2.5.1 Age

```
    Pearson's product-moment correlation

data:  BFstructural_Dat$cAge_yr and BFstructural_Dat$rHip_22
t = 2.0698, df = 144, p-value = 0.04026
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.007737868 0.323488880
sample estimates:
      cor
0.1699726
```

2.5.2 TIV

```
    Pearson's product-moment correlation

data:  BFstructural_Dat$TIV and BFstructural_Dat$rHip_22
t = 10.044, df = 144, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.5351887 0.7283432
sample estimates:
      cor
0.6418356
```

2.5.3 Sex

```
    Welch Two Sample t-test

data:  rHip_22 by sex
t = -3.0081, df = 139.52, p-value = 0.003119
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.22893690 -0.04734725
sample estimates:
mean in group Female   mean in group Male
            3.200146             3.338288
```

2.5.4 Maternal Education

```
Anova Table (Type II tests)

Response: rHip_22
                Sum Sq  Df F value Pr(>F)
mEducation_cat  0.2642   3   1.107 0.3488
Residuals      10.3430 130
```

2.5.5 Income

```
Anova Table (Type II tests)

Response: rHip_22
             Sum Sq  Df F value   Pr(>F)
income_3cat  0.9412   2  6.1613 0.002726 **
Residuals   10.6933 140
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

2.5.6 Prematurity

```
    Welch Two Sample t-test

data:  rHip_22 by cPreMat
t = 2.4797, df = 25.482, p-value = 0.0201
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 0.02343983 0.25195054
sample estimates:
 mean in group No mean in group Yes
        3.283357          3.145662
```

3 3.2 Path Analyses

3.1 3.2.1 Path Model for Left Hippocampus (Figure 1B).

Table 1: Fit Statistics for Model: BF -> SR (L Hipp Med) -> p85th BMI

	x
chisq	3.497
df	3.000
pvalue	0.321
baseline.chisq	138.482
baseline.df	27.000
baseline.pvalue	0.000
cfi	0.996
tli	0.960
logl	1.517
bic2	43.197
rmsea	0.036
rmsea.ci.lower	0.000
rmsea.ci.upper	0.156
rmsea.pvalue	0.459
srmr	0.013

Table 2: Parameters for Model: BF -> SR (L Hipp Med) -> p85th BMI

	lhs	op	rhs	est	se	z	pvalue
1	cebq_SR	~	mEducation_dummy	-0.028	0.056	-0.502	0.615
2	cebq_SR	~	income_dummy	0.232	0.082	2.836	0.005
3	cebq_SR	~	cPreMat_dummy	-0.176	0.152	-1.151	0.250
4	cebq_SR	~	BreastFed_3cat_dummy	0.011	0.065	0.173	0.863
5	cebq_SR	~	TIV_scale	-0.037	0.074	-0.496	0.620
6	cebq_SR	~	Study_dummy	0.017	0.036	0.466	0.641
7	cebq_SR	~	cAge_yr	-0.020	0.044	-0.454	0.650
8	cebq_SR	~	sex_dummy	0.099	0.112	0.882	0.378
9	cebq_SR	~	lHip_21	-0.171	0.291	-0.587	0.557
10	lHip_21	~	TIV_scale	0.158	0.017	9.269	0.000
11	lHip_21	~	Study_dummy	-0.014	0.011	-1.289	0.197
12	lHip_21	~	cAge_yr	0.038	0.013	3.012	0.003
13	lHip_21	~	sex_dummy	-0.012	0.033	-0.374	0.709
14	lHip_21	~	cPreMat_dummy	-0.034	0.046	-0.751	0.452
15	lHip_21	~	BreastFed_3cat_dummy	0.038	0.019	1.993	0.046
16	cdc_p85th	~	TIV_scale	0.040	0.019	2.160	0.031
17	cdc_p85th	~	Study_dummy	-0.002	0.009	-0.182	0.856
18	cdc_p85th	~	cAge_yr	0.017	0.011	1.564	0.118
19	cdc_p85th	~	sex_dummy	-0.003	0.028	-0.125	0.901
20	cdc_p85th	~	lHip_21	-0.144	0.072	-1.993	0.046
21	cdc_p85th	~	mEducation_dummy	-0.051	0.014	-3.683	0.000
22	cdc_p85th	~	income_dummy	0.020	0.021	0.947	0.344
23	cdc_p85th	~	cPreMat_dummy	-0.039	0.038	-1.021	0.307
24	cdc_p85th	~	cebq_SR	-0.047	0.022	-2.125	0.034
64	lHipMed_BF2SR	:=	a1*b1a2	-0.006	0.012	-0.563	0.573
65	SRMed_lHip2p85th	:=	b1a2*b2	0.008	0.014	0.566	0.571

3.1.1 Post-Hoc Tests for Breastfeeding

```
    Welch Two Sample t-test

data:  lHip_21 by BreastFed_3cat
t = -2.2487, df = 81.543, p-value = 0.02723
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.22310028 -0.01364641
sample estimates:
mean in group 0-3mo mean in group 4-6mo
           2.865345            2.983718


    Welch Two Sample t-test

data:  lHip_21 by BreastFed_3cat
t = -1.0931, df = 103.96, p-value = 0.2769
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.14392165  0.04163658
sample estimates:
 mean in group >6mo mean in group 4-6mo
           2.932576            2.983718


    Welch Two Sample t-test

data:  lHip_21 by BreastFed_3cat
t = 1.2874, df = 80.56, p-value = 0.2016
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.03668236  0.17114399
sample estimates:
 mean in group >6mo mean in group 0-3mo
           2.932576            2.865345

    >6mo    0-3mo    4-6mo
2.932576 2.865345 2.983718
```

3.2 3.2.1 Path Model for Left Hippocampus: Sensitivity Test - Effect of Breast-feeding

Table 3: Fit Statistics for Sensitivity Test: direct effect of breastfeeding on p85 BMI

	x
chisq	2.574
df	2.000
pvalue	0.276
baseline.chisq	138.482
baseline.df	27.000
baseline.pvalue	0.000
cfi	0.995
tli	0.930
logl	1.979
bic2	43.986
rmsea	0.047
rmsea.ci.lower	0.000
rmsea.ci.upper	0.186
rmsea.pvalue	0.386
srmr	0.009

Table 4: Parameters for Sensitivity Test: direct effect of breastfeeding on p85 BMI

lhs	op	rhs	est	se	z	pvalue
cebq_SR	~	mEducation_dummy	-0.028	0.056	-0.502	0.615
cebq_SR	~	income_dummy	0.232	0.082	2.836	0.005
cebq_SR	~	cPreMat_dummy	-0.176	0.152	-1.151	0.250
cebq_SR	~	BreastFed_3cat_dummy	0.011	0.065	0.173	0.863
cebq_SR	~	TIV_scale	-0.037	0.074	-0.496	0.620
cebq_SR	~	Study_dummy	0.017	0.036	0.466	0.641
cebq_SR	~	cAge_yr	-0.020	0.044	-0.454	0.650
cebq_SR	~	sex_dummy	0.099	0.112	0.882	0.378
cebq_SR	~	lHip_21	-0.171	0.291	-0.587	0.557
lHip_21	~	TIV_scale	0.158	0.017	9.269	0.000
lHip_21	~	Study_dummy	-0.014	0.011	-1.289	0.197
lHip_21	~	cAge_yr	0.038	0.013	3.012	0.003
lHip_21	~	sex_dummy	-0.012	0.033	-0.374	0.709
lHip_21	~	cPreMat_dummy	-0.034	0.046	-0.751	0.452
lHip_21	~	BreastFed_3cat_dummy	0.038	0.019	1.993	0.046
cdc_p85th	~	TIV_scale	0.040	0.019	2.153	0.031
cdc_p85th	~	Study_dummy	-0.001	0.009	-0.124	0.901
cdc_p85th	~	cAge_yr	0.016	0.011	1.458	0.145
cdc_p85th	~	sex_dummy	0.000	0.028	-0.006	0.995
cdc_p85th	~	lHip_21	-0.133	0.073	-1.825	0.068
cdc_p85th	~	mEducation_dummy	-0.053	0.014	-3.754	0.000
cdc_p85th	~	income_dummy	0.023	0.021	1.073	0.283
cdc_p85th	~	cPreMat_dummy	-0.039	0.038	-1.020	0.308
cdc_p85th	~	cebq_SR	-0.046	0.022	-2.118	0.034
cdc_p85th	~	BreastFed_3cat_dummy	-0.016	0.016	-0.960	0.337

3.3 3.2.1 Path Model for Left Hippocampus: Sensitivity Test - Adjusting Hippocampal Volume for Income

Table 5: Fit Statistics for Sensitivity Test: adjusting hippocampal volume for income

	x
chisq	2.964
df	2.000
pvalue	0.227
baseline.chisq	138.482
baseline.df	27.000
baseline.pvalue	0.000
cfi	0.991
tli	0.883
logl	1.784
bic2	44.376
rmsea	0.061
rmsea.ci.lower	0.000
rmsea.ci.upper	0.194
rmsea.pvalue	0.333
srmr	0.013

Table 6: Parameters for Sensitivity Test: adjusting hippocampal volume for income

lhs	op	rhs	est	se	z	pvalue
cebq_SR	~	mEducation_dummy	-0.028	0.056	-0.502	0.615
cebq_SR	~	income_dummy	0.232	0.082	2.831	0.005
cebq_SR	~	cPreMat_dummy	-0.176	0.152	-1.151	0.250
cebq_SR	~	BreastFed_3cat_dummy	0.011	0.065	0.173	0.863
cebq_SR	~	TIV_scale	-0.037	0.074	-0.498	0.618
cebq_SR	~	Study_dummy	0.017	0.036	0.466	0.641
cebq_SR	~	cAge_yr	-0.020	0.044	-0.453	0.650
cebq_SR	~	sex_dummy	0.099	0.112	0.881	0.378
cebq_SR	~	lHip_21	-0.171	0.292	-0.586	0.558
lHip_21	~	TIV_scale	0.156	0.017	9.034	0.000
lHip_21	~	Study_dummy	-0.013	0.011	-1.177	0.239
lHip_21	~	cAge_yr	0.038	0.013	3.048	0.002
lHip_21	~	sex_dummy	-0.014	0.033	-0.415	0.678
lHip_21	~	cPreMat_dummy	-0.035	0.045	-0.772	0.440
lHip_21	~	BreastFed_3cat_dummy	0.036	0.019	1.879	0.060
lHip_21	~	income_dummy	0.016	0.022	0.731	0.465
cdc_p85th	~	TIV_scale	0.040	0.019	2.169	0.030
cdc_p85th	~	Study_dummy	-0.002	0.009	-0.182	0.856
cdc_p85th	~	cAge_yr	0.017	0.011	1.563	0.118
cdc_p85th	~	sex_dummy	-0.003	0.028	-0.125	0.901
cdc_p85th	~	lHip_21	-0.144	0.072	-1.987	0.047
cdc_p85th	~	mEducation_dummy	-0.051	0.014	-3.683	0.000
cdc_p85th	~	income_dummy	0.020	0.021	0.944	0.345
cdc_p85th	~	cPreMat_dummy	-0.039	0.038	-1.020	0.308
cdc_p85th	~	cebq_SR	-0.047	0.022	-2.125	0.034

3.4 3.2.2 Path Model for Right Hippocampus (Figure 1C).

Table 7: Fit Statistics for Model: BF -> SR (R Hipp Med) -> p85th BMI

	x
chisq	2.652
df	3.000
pvalue	0.448
baseline.chisq	123.303
baseline.df	27.000
baseline.pvalue	0.000
cfi	1.000
tli	1.033
logl	-22.845
bic2	91.922
rmsea	0.000
rmsea.ci.lower	0.000
rmsea.ci.upper	0.141
rmsea.pvalue	0.582
srmr	0.013

Table 8: Parameters for Model: BF -> SR (R Hipp Med) -> p85th BMI

	lhs	op	rhs	est	se	z	pvalue
1	cebq_SR	~	mEducation_dummy	-0.025	0.056	-0.455	0.649
2	cebq_SR	~	income_dummy	0.232	0.082	2.828	0.005
3	cebq_SR	~	cPreMat_dummy	-0.175	0.152	-1.146	0.252
4	cebq_SR	~	BreastFed_3cat_dummy	0.012	0.066	0.189	0.850
5	cebq_SR	~	TIV_scale	-0.041	0.072	-0.571	0.568
6	cebq_SR	~	Study_dummy	0.017	0.036	0.461	0.645
7	cebq_SR	~	cAge_yr	-0.021	0.043	-0.497	0.619
8	cebq_SR	~	sex_dummy	0.098	0.112	0.876	0.381
9	cebq_SR	~	rHip_22	-0.137	0.245	-0.559	0.576
10	rHip_22	~	TIV_scale	0.171	0.020	8.434	0.000
11	rHip_22	~	Study_dummy	-0.019	0.013	-1.537	0.124
12	rHip_22	~	cAge_yr	0.035	0.015	2.335	0.020
13	rHip_22	~	sex_dummy	-0.016	0.040	-0.402	0.688
14	rHip_22	~	cPreMat_dummy	-0.033	0.054	-0.601	0.548
15	rHip_22	~	BreastFed_3cat_dummy	0.054	0.023	2.404	0.016
16	cdc_p85th	~	TIV_scale	0.026	0.018	1.449	0.147
17	cdc_p85th	~	Study_dummy	-0.001	0.009	-0.080	0.936
18	cdc_p85th	~	cAge_yr	0.014	0.011	1.254	0.210
19	cdc_p85th	~	sex_dummy	-0.004	0.028	-0.126	0.900
20	cdc_p85th	~	rHip_22	-0.054	0.061	-0.888	0.374
21	cdc_p85th	~	mEducation_dummy	-0.048	0.014	-3.424	0.001
22	cdc_p85th	~	income_dummy	0.016	0.021	0.777	0.437
23	cdc_p85th	~	cPreMat_dummy	-0.036	0.039	-0.932	0.351
24	cdc_p85th	~	cebq_SR	-0.045	0.022	-2.046	0.041
64	rHipMed_BF2SR	:=	a1*b1a2	-0.007	0.014	-0.544	0.586
65	SRMed_rHip2p85th	:=	b1a2*b2	0.006	0.012	0.539	0.590

3.4.1 Post-Hoc Tests for Breastfeeding

```
    Welch Two Sample t-test

data:  rHip_22 by BreastFed_3cat
t = -2.1699, df = 83.953, p-value = 0.03284
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.25074294 -0.01092919
sample estimates:
mean in group 0-3mo mean in group 4-6mo
           3.180627            3.311463


    Welch Two Sample t-test

data:  rHip_22 by BreastFed_3cat
t = -0.42339, df = 103.51, p-value = 0.6729
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.12985583  0.08416378
sample estimates:
 mean in group >6mo mean in group 4-6mo
           3.288617            3.311463


    Welch Two Sample t-test

data:  rHip_22 by BreastFed_3cat
t = 1.8426, df = 80.697, p-value = 0.06906
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.008626495  0.224606571
sample estimates:
 mean in group >6mo mean in group 0-3mo
           3.288617            3.180627

    >6mo    0-3mo    4-6mo
3.288617 3.180627 3.311463
```

3.5 3.2.1 Path Model for Right Hippocampus: Sensitivity Test - Direct Effect of Breastfeeding

Table 9: Fit Statistics for Sensitivity Test: direct effect of breastfeeding on p85 BMI

	x
chisq	1.470
df	2.000
pvalue	0.479
baseline.chisq	123.303
baseline.df	27.000
baseline.pvalue	0.000
cfi	1.000
tli	1.074
logl	-22.254
bic2	92.453
rmsea	0.000
rmsea.ci.lower	0.000
rmsea.ci.upper	0.158
rmsea.pvalue	0.584
srmr	0.008

Table 10: Parameters for Sensitivity Test: direct effect of breastfeeding on p85 BMI

lhs	op	rhs	est	se	z	pvalue
cebq_SR	~	mEducation_dummy	-0.025	0.056	-0.455	0.649
cebq_SR	~	income_dummy	0.232	0.082	2.828	0.005
cebq_SR	~	cPreMat_dummy	-0.175	0.152	-1.146	0.252
cebq_SR	~	BreastFed_3cat_dummy	0.012	0.066	0.189	0.850
cebq_SR	~	TIV_scale	-0.041	0.072	-0.571	0.568
cebq_SR	~	Study_dummy	0.017	0.036	0.461	0.645
cebq_SR	~	cAge_yr	-0.021	0.043	-0.497	0.619
cebq_SR	~	sex_dummy	0.098	0.112	0.876	0.381
cebq_SR	~	rHip_22	-0.137	0.245	-0.559	0.576
rHip_22	~	TIV_scale	0.171	0.020	8.434	0.000
rHip_22	~	Study_dummy	-0.019	0.013	-1.537	0.124
rHip_22	~	cAge_yr	0.035	0.015	2.335	0.020
rHip_22	~	sex_dummy	-0.016	0.040	-0.402	0.688
rHip_22	~	cPreMat_dummy	-0.033	0.054	-0.601	0.548
rHip_22	~	BreastFed_3cat_dummy	0.054	0.023	2.404	0.016
cdc_p85th	~	TIV_scale	0.026	0.018	1.426	0.154
cdc_p85th	~	Study_dummy	0.000	0.009	-0.009	0.993
cdc_p85th	~	cAge_yr	0.012	0.011	1.137	0.256
cdc_p85th	~	sex_dummy	0.000	0.028	0.011	0.991
cdc_p85th	~	rHip_22	-0.041	0.062	-0.668	0.504
cdc_p85th	~	mEducation_dummy	-0.050	0.014	-3.520	0.000
cdc_p85th	~	income_dummy	0.020	0.021	0.919	0.358
cdc_p85th	~	cPreMat_dummy	-0.036	0.039	-0.930	0.352
cdc_p85th	~	cebq_SR	-0.045	0.022	-2.037	0.042
cdc_p85th	~	BreastFed_3cat_dummy	-0.018	0.017	-1.086	0.277

3.6 3.2.1 Path Model for Right Hippocampus: Sensitivity Test - Adjusting Hippocampal Volume for Income

Table 11: Fit Statistics for Sensitivity Test: adjusting hippocampal volume for income

	x
chisq	1.464
df	2.000
pvalue	0.481
baseline.chisq	123.303
baseline.df	27.000
baseline.pvalue	0.000
cfi	1.000
tli	1.075
logl	-22.251
bic2	92.446
rmsea	0.000
rmsea.ci.lower	0.000
rmsea.ci.upper	0.158
rmsea.pvalue	0.585
srmr	0.011

Table 12: Parameters for Sensitivity Test: adjusting hippocampal volume for income

lhs	op	rhs	est	se	z	pvalue
cebq_SR	~	mEducation_dummy	-0.025	0.056	-0.455	0.649
cebq_SR	~	income_dummy	0.232	0.082	2.818	0.005
cebq_SR	~	cPreMat_dummy	-0.175	0.152	-1.146	0.252
cebq_SR	~	BreastFed_3cat_dummy	0.012	0.066	0.189	0.850
cebq_SR	~	TIV_scale	-0.041	0.071	-0.574	0.566
cebq_SR	~	Study_dummy	0.017	0.036	0.462	0.644
cebq_SR	~	cAge_yr	-0.021	0.043	-0.497	0.619
cebq_SR	~	sex_dummy	0.098	0.112	0.876	0.381
cebq_SR	~	rHip_22	-0.137	0.246	-0.556	0.578
rHip_22	~	TIV_scale	0.167	0.020	8.170	0.000
rHip_22	~	Study_dummy	-0.018	0.013	-1.375	0.169
rHip_22	~	cAge_yr	0.036	0.015	2.393	0.017
rHip_22	~	sex_dummy	-0.018	0.040	-0.466	0.642
rHip_22	~	cPreMat_dummy	-0.034	0.054	-0.632	0.527
rHip_22	~	BreastFed_3cat_dummy	0.051	0.023	2.244	0.025
rHip_22	~	income_dummy	0.028	0.026	1.093	0.275
cdc_p85th	~	TIV_scale	0.026	0.018	1.457	0.145
cdc_p85th	~	Study_dummy	-0.001	0.009	-0.080	0.936
cdc_p85th	~	cAge_yr	0.014	0.011	1.252	0.210
cdc_p85th	~	sex_dummy	-0.004	0.028	-0.126	0.900
cdc_p85th	~	rHip_22	-0.054	0.061	-0.882	0.378
cdc_p85th	~	mEducation_dummy	-0.048	0.014	-3.424	0.001
cdc_p85th	~	income_dummy	0.016	0.021	0.772	0.440
cdc_p85th	~	cPreMat_dummy	-0.036	0.039	-0.932	0.351
cdc_p85th	~	cebq_SR	-0.045	0.022	-2.046	0.041