R01-FBS: Task EF x Risk Status Paper

Contents

1 Participant Characteristics (Demographics Database)

Table 1: Demographic Characteristics

Characteristic	Low Risk, N = 53	High Risk, N = 40	Test Statistic	p-value
Age, yr	7.8 (0.7)	7.8 (0.6)	0.44	0.7
Sex			1.2	0.3
Male	30 (57%)	18 (45%)		
Female	23 (43%)	22 (55%)		
Ethnicity				>0.9
Hispanic/Lantinx	0 (0%)	0 (0%)		
Not Hispanic/Lantinx	53 (100%)	40 (100%)		
Race				0.3
Asian	3 (5.7%)	0 (0%)		
Black/AA	0 (0%)	0 (0%)		
White/Caucasian	50 (94%)	40 (100%)		
Income			10	0.006
< $51,000	4 (7.7%)	8 (21%)		
>$100,000	26 (50%)	7 (18%)		
$51,000 - $100,000	22 (42%)	23 (61%)		
Unknown	1	2		
Mother's Education				0.008
> Bachelor Degree	23 (44%)	6 (15%)		
AA/Technical Degree	3 (5.8%)	7 (18%)		
Bachelor Degree	23 (44%)	21 (52%)		
High School/GED	3 (5.8%)	6 (15%)		
Unknown	1	0		
Father's Education				<0.001
> Bachelor Degree	29 (55%)	4 (11%)		
AA/Technical Degree	3 (5.7%)	11 (31%)		
Bachelor Degree	15 (28%)	14 (40%)		
High School/GED	6 (11%)	5 (14%)		
Other/NA	0 (0%)	1 (2.9%)		
Unknown	0	5		
BMI %tile	41.7 (23.9)	55.7 (23.6)	-2.8	0.006
Total Body Fat %	27.1 (3.8)	30.6 (4.3)	-4.1	<0.001
Total Fat Mass	6,818.7 (1,419.0)	8,127.7 (1,833.3)	-3.7	<0.001
Visceral Fat Mass	157.2 (51.7)	161.2 (55.2)	-0.36	0.7
Lean Fat Mass	17,420.5 (2,574.3)	17,337.7 (2,130.0)	0.17	0.9
IQ	116.1 (16.4)	110.4 (10.8)	1.7	0.085
Unknown	11	13		

[1] Mean (SD); n (%)

[2] Welch Two Sample t-test; Pearson's Chi-squared test; Fisher's exact test

1.1 income

```
    Pearson's Chi-squared test

data:  xtabs(~risk_status_mom + income, data = covar_demo)
X-squared = 10.368, df = 2, p-value = 0.005605
```

1.2 mom education

```
    Fisher's Exact Test for Count Data

data:  xtabs(~risk_status_mom + mom_ed, data = covar_demo)
p-value = 0.008449
alternative hypothesis: two.sided
```

1.3 bmi percentile

```
    Welch Two Sample t-test

data:  bmi_percentile by risk_status_mom
t = -2.8098, df = 84.587, p-value = 0.006157
alternative hypothesis: true difference in means between group Low Risk and group High Risk is not equal
95 percent confidence interval:
 -23.873036  -4.086775
sample estimates:
 mean in group Low Risk mean in group High Risk
               41.73509                55.71500
```

1.4 percent body fat

```
    Welch Two Sample t-test

data:  dxa_total_body_perc_fat by risk_status_mom
t = -4.136, df = 77.38, p-value = 8.899e-05
alternative hypothesis: true difference in means between group Low Risk and group High Risk is not equal
95 percent confidence interval:
 -5.272136 -1.845600
sample estimates:
 mean in group Low Risk mean in group High Risk
               27.08113                30.64000
```

2 Effect of Risk Status

2.1 Go-NoGo

Table 2: Go-NoGo Performance Summary

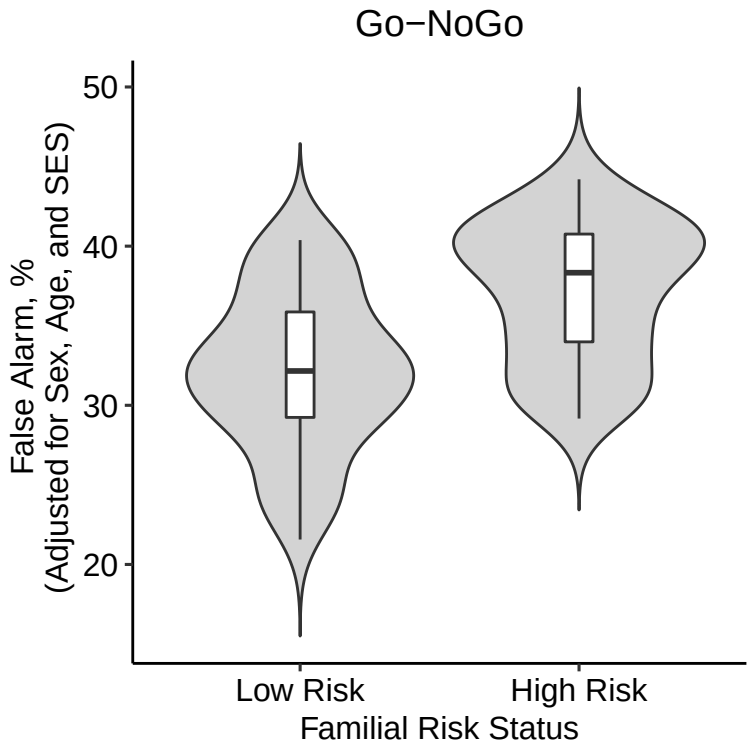
Characteristic	Low Risk, N = 53	High Risk, N = 39
Missed, N	4.6 (5.2)	3.9 (3.7)
False Alarm, N	16.0 (8.2)	18.9 (7.9)
Missed, %	3.1 (3.5)	2.6 (2.5)
False Alarm, %	32.0 (16.4)	37.8 (15.7)
Mean Hit RT, ms	543.6 (60.9)	544.9 (61.6)
Mean False Alarm RT, ms	432.5 (53.2)	426.6 (53.9)
d', loglinear	2.5 (0.7)	2.3 (0.6)

[1] Mean (SD)

2.1.1 Percent False Alarms

Table 3: Go-NoGo Percent False Alarms

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	53.906	22.840	2.360	0.021
mom_edAA/Technical Degree	3.097	6.475	0.478	0.634
mom_edBachelor Degree	-0.255	4.039	-0.063	0.950
mom_edHigh School/GED	-2.799	7.983	-0.351	0.727
income>$100,000	5.961	6.929	0.860	0.392
income$51,000 - $100,000	-0.945	6.137	-0.154	0.878
sexFemale	-6.111	3.595	-1.700	0.093
age_yr	-2.776	2.778	-0.999	0.321
risk_status_momHigh Risk	7.766	3.842	2.021	0.047


Go−NoGo
False Alarm, %
(Adjusted for Sex, Age, and SES)
50
40
30
20
Low Risk
High Risk
Familial Risk Status

2.1.2 Percent Hits

Table 4: Go-NoGo - Percent Hits

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	93.843	4.581	20.484	0.000
mom_edAA/Technical Degree	2.066	1.299	1.591	0.116
mom_edBachelor Degree	1.015	0.810	1.253	0.214
mom_edHigh School/GED	-0.770	1.601	-0.481	0.632
income>$100,000	-1.324	1.390	-0.952	0.344
income$51,000 - $100,000	-1.598	1.231	-1.298	0.198
sexFemale	0.926	0.721	1.284	0.203
age_yr	0.439	0.557	0.788	0.433
risk_status_momHigh Risk	-0.075	0.771	-0.097	0.923

2.1.3 Go Reaction Time

Table 5: Go-NoGo - Go Reaction Time

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	771.113	86.643	8.900	0.000
mom_edAA/Technical Degree	-21.783	24.561	-0.887	0.378
mom_edBachelor Degree	-21.430	15.322	-1.399	0.166
mom_edHigh School/GED	-24.738	30.282	-0.817	0.416
income>$100,000	-26.475	26.284	-1.007	0.317
income$51,000 - $100,000	-16.345	23.279	-0.702	0.485
sexFemale	16.386	13.637	1.202	0.233
age_yr	-25.797	10.539	-2.448	0.017
risk_status_momHigh Risk	3.206	14.575	0.220	0.826

2.1.4 d'

Table 6: Go-NoGo - d'

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	1.384	0.950	1.457	0.149
mom_edAA/Technical Degree	0.141	0.269	0.523	0.603
mom_edBachelor Degree	0.068	0.168	0.402	0.689
mom_edHigh School/GED	-0.082	0.332	-0.248	0.805
income>$100,000	-0.292	0.288	-1.013	0.314
income$51,000 - $100,000	-0.131	0.255	-0.513	0.610
sexFemale	0.272	0.150	1.820	0.073
age_yr	0.149	0.116	1.287	0.202
risk_status_momHigh Risk	-0.263	0.160	-1.645	0.104

2.2 Stop-Signal Task

Table 7: Stop-Signal Task Performance Summary: Risk Status across all trials

Characteristic	Low Risk, N = 48	High Risk, N = 34
race horse		
0	3 (6.2%)	6 (18%)
1	45 (94%)	28 (82%)
Go RT, ms	655.5 (105.8)	646.7 (130.5)
L/R Response Error, N	5.3 (8.0)	5.1 (5.7)
Misses, N	2.9 (4.0)	4.9 (6.9)
SSD, ms	303.3 (86.8)	255.0 (89.7)
SSRT - Mean Method, ms	350.9 (61.9)	377.8 (85.5)
SSRT - Integration Method, ms	313.6 (82.0)	375.9 (124.4)

[1] n (%); Mean (SD)

Table 8: Stop-Signal Task Performance Summary: Risk Status by Energy Density Condition

	Low ED		High ED	
Characteristic	Low Risk, N = 30	High Risk, N = 25	Low Risk, N = 30	High Risk, N = 25
Go RT, ms	673.6 (115.2)	668.9 (144.3)	677.1 (95.7)	656.5 (139.1)
L/R Response Error, N	2.6 (3.9)	2.3 (2.1)	1.6 (2.0)	2.3 (2.2)
Misses, N	1.6 (2.8)	2.9 (4.1)	1.3 (1.7)	2.4 (4.0)
SSD, ms	326.4 (97.1)	283.8 (98.9)	324.4 (77.9)	266.6 (87.1)
SSRT - Mean Method, ms	342.3 (49.2)	378.2 (92.5)	347.7 (49.3)	386.4 (92.5)
SSRT - Integration Method, ms	299.4 (70.1)	367.6 (174.6)	294.8 (46.0)	373.1 (111.5)

[1] Mean (SD)

Table 9: Stop-Signal Task Performance Summary: Risk Status by Portion Size Condition

	Small PS		Large PS	
Characteristic	Low Risk, N = 33	High Risk, N = 25	Low Risk, N = 33	High Risk, N = 25
Go RT, ms	664.1 (112.5)	664.8 (139.9)	672.4 (117.9)	666.0 (142.9)
L/R Response Error, N	2.4 (3.4)	1.9 (1.7)	1.8 (2.9)	2.8 (2.4)
Misses, N	1.8 (3.1)	2.9 (4.4)	1.5 (2.0)	2.4 (3.8)
SSD, ms	304.6 (95.9)	272.7 (90.0)	322.6 (92.0)	288.2 (86.6)
SSRT - Mean Method, ms	355.0 (53.5)	381.4 (92.3)	346.2 (60.4)	373.0 (90.2)
SSRT - Integration Method, ms	309.8 (66.4)	375.3 (121.6)	307.3 (67.9)	345.5 (113.8)

[1] Mean (SD)

2.2.1 Stop Signal Reaction Time

Table 10: Stop-Signal Task SSRT - ED x PS

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	498.188	142.863	32.66	3.487	0.001
mom_edAA/Technical Degree	45.098	44.200	32.00	1.020	0.315
mom_edBachelor Degree	11.662	24.830	32.00	0.470	0.642
mom_edHigh School/GED	-61.251	40.577	32.00	-1.509	0.141
income>$100,000	-72.180	37.009	32.00	-1.950	0.060
income$51,000 - $100,000	-40.158	33.421	32.00	-1.202	0.238
sexFemale	18.812	20.916	32.00	0.899	0.375
age_yr	-19.723	18.130	32.00	-1.088	0.285
PSLarge PS	-3.502	23.531	117.00	-0.149	0.882
EDHigh ED	7.794	23.531	117.00	0.331	0.741
PSLarge PS:EDHigh ED	13.989	33.278	117.00	0.420	0.675

2.2.1.1 Design

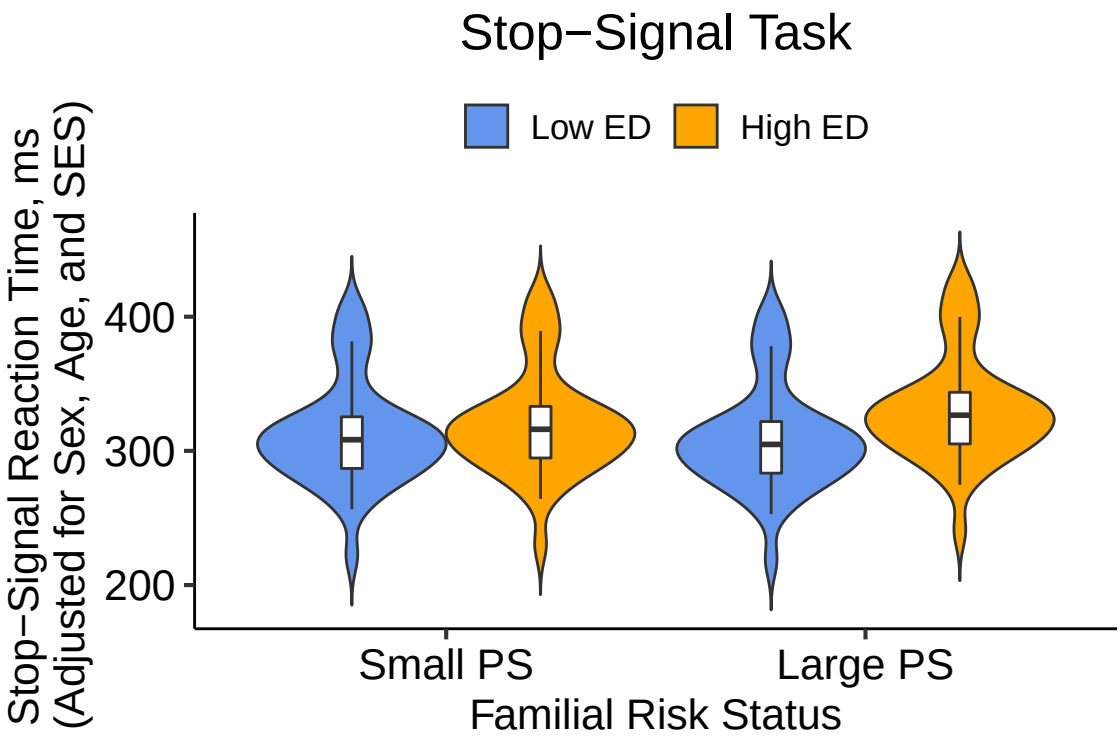
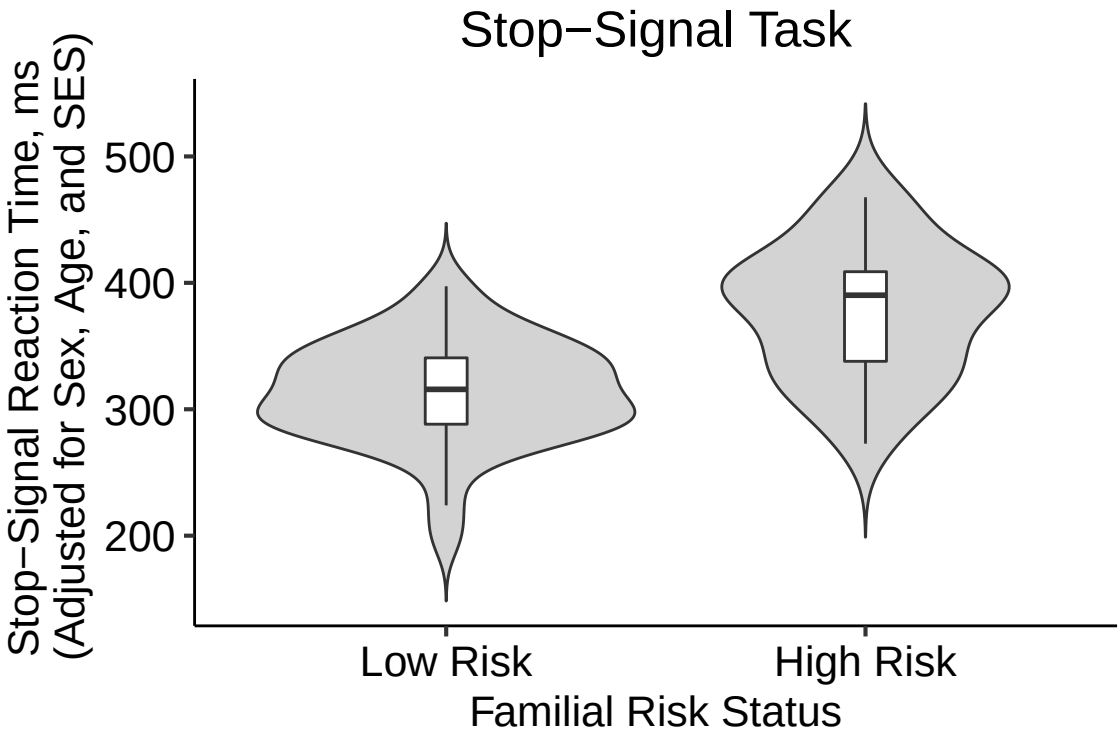


Table 11: Stop-Signal Task SSRT - Risk Status

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	668.116	164.378	4.065	0.000
mom_edAA/Technical Degree	51.718	50.279	1.029	0.308
mom_edBachelor Degree	-24.764	28.895	-0.857	0.395
mom_edHigh School/GED	-82.236	55.160	-1.491	0.141
income>$100,000	5.889	50.927	0.116	0.908
income$51,000 - $100,000	-6.496	47.774	-0.136	0.892
sexFemale	13.796	24.482	0.564	0.575
age_yr	-44.512	20.017	-2.224	0.030
risk_status_momHigh Risk	69.065	27.516	2.510	0.015

2.2.1.2 Overall



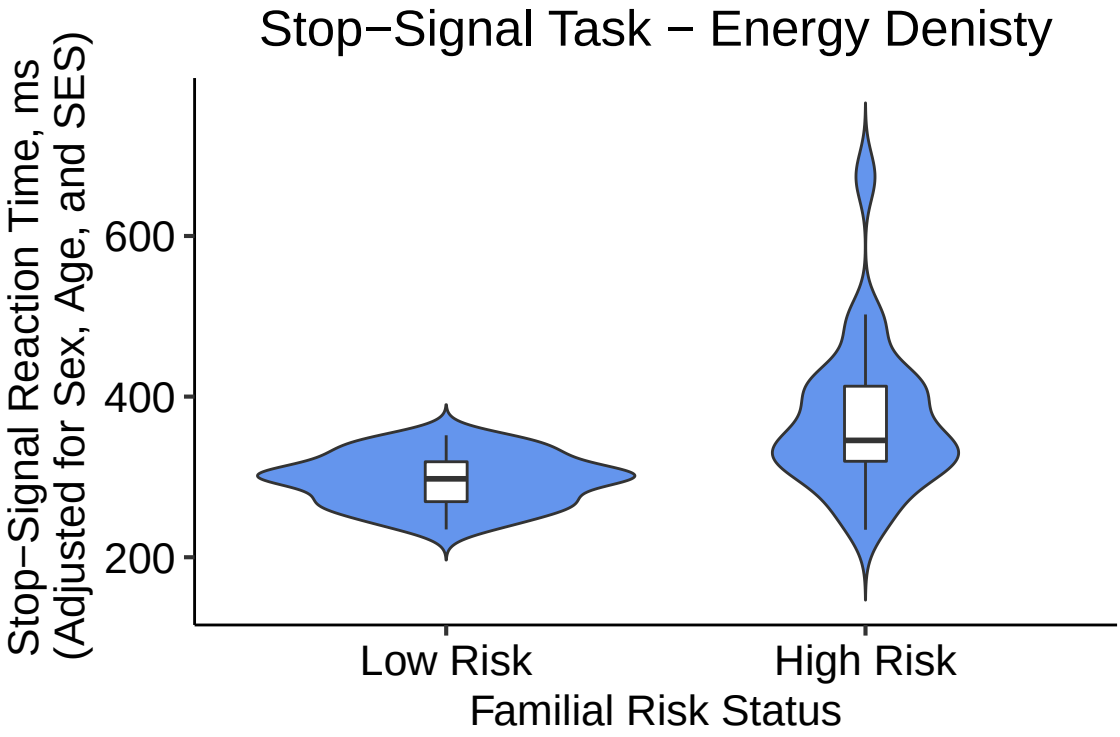

```
$emmeans
 risk_status_mom emmean   SE df lower.CL upper.CL
 Low Risk           315 20.1 60      274      355
 High Risk          384 22.3 60      339      428

Results are averaged over the levels of: mom_ed, income, sex
Confidence level used: 0.95

$contrasts
 contrast             estimate   SE df t.ratio p.value
```

```
 Low Risk - High Risk    -69.1 27.5 60  -2.510  0.0148

Results are averaged over the levels of: mom_ed, income, sex

 age_yr age_yr.trend SE df t.ratio p.value
   7.78        -44.5 20 60  -2.224  0.0299

Results are averaged over the levels of: mom_ed, income, sex, risk_status_mom
```

Table 12: Stop-Signal Task SSRT - ED x Risk Status

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	652.049	175.664	43.308	3.712	0.001
mom_edAA/Technical Degree	47.054	56.412	43.000	0.834	0.409
mom_edBachelor Degree	-52.936	31.424	43.000	-1.685	0.099
mom_edHigh School/GED	-105.585	53.747	43.000	-1.964	0.056
income>$100,000	-18.289	49.114	43.000	-0.372	0.711
income$51,000 - $100,000	-26.808	44.968	43.000	-0.596	0.554
sexFemale	-3.391	26.491	43.000	-0.128	0.899
age_yr	-39.442	21.795	43.000	-1.810	0.077
EDHigh ED	-1.467	20.974	50.000	-0.070	0.945
risk_status_momHigh Risk	85.698	32.568	67.892	2.631	0.011
EDHigh ED:risk_status_momHigh Risk	10.145	31.537	50.000	0.322	0.749

2.2.1.3 Energy Density Trials



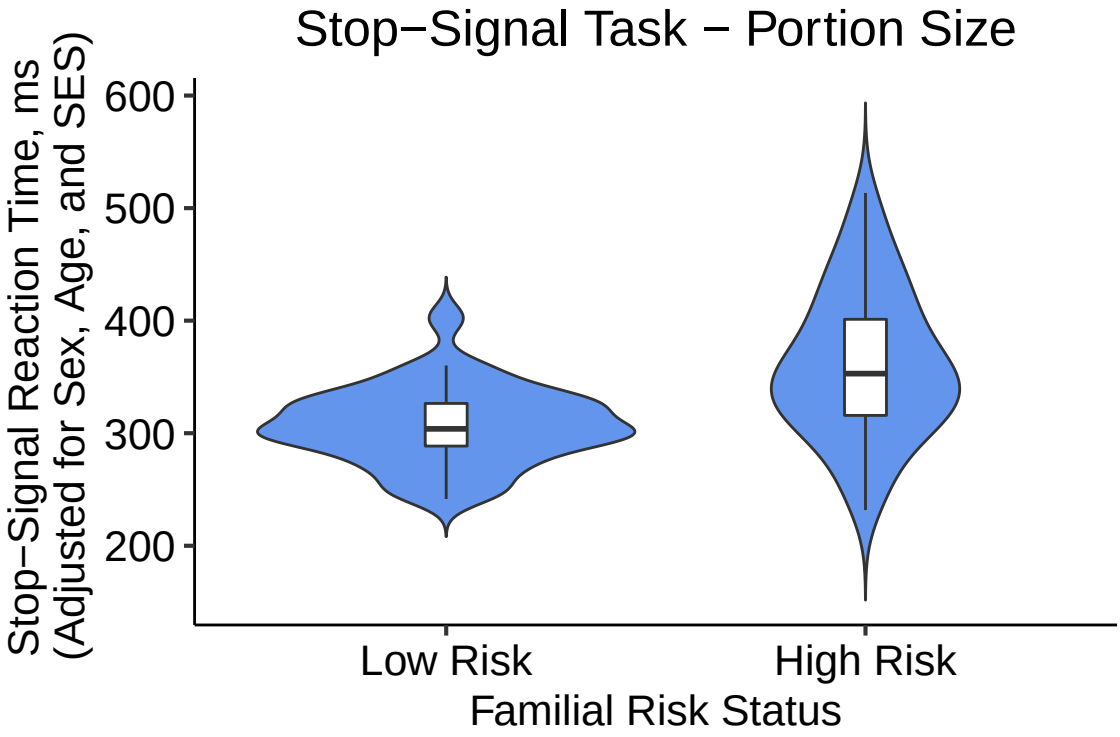

```
$emmeans
 risk_status_mom emmean   SE df lower.CL upper.CL
 Low Risk           301 22.4 43      256      346
 High Risk          392 22.6 43      346      438

Results are averaged over the levels of: mom_ed, income, sex, ED
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95
```

```
$contrasts
 contrast             estimate   SE df t.ratio p.value
 Low Risk - High Risk    -90.8 28.5 43  -3.185  0.0027

Results are averaged over the levels of: mom_ed, income, sex, ED
Degrees-of-freedom method: kenward-roger

$emmeans
 ED      emmean   SE   df lower.CL upper.CL
 Low ED     345 19.1 60.3      307      383
 High ED    348 19.1 60.3      310      387

Results are averaged over the levels of: mom_ed, income, sex, risk_status_mom
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast         estimate   SE df t.ratio p.value
 Low ED - High ED    -3.61 15.8 50  -0.229  0.8201

Results are averaged over the levels of: mom_ed, income, sex, risk_status_mom
Degrees-of-freedom method: kenward-roger
```

Table 13: Stop-Signal Task SSRT - PS x Risk Status

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	562.167	145.687	45.369	3.859	0.000
mom_edAA/Technical Degree	-36.399	46.014	45.000	-0.791	0.433
mom_edBachelor Degree	-28.541	26.029	45.000	-1.097	0.279
mom_edHigh School/GED	-99.459	46.569	45.000	-2.136	0.038
income>$100,000	-27.560	42.456	45.000	-0.649	0.520
income$51,000 - $100,000	-11.140	38.657	45.000	-0.288	0.775
sexFemale	13.745	22.132	45.000	0.621	0.538
age_yr	-28.772	18.028	45.000	-1.596	0.117
PSLarge PS	5.808	18.604	52.000	0.312	0.756
risk_status_momHigh Risk	78.080	27.484	75.372	2.841	0.006
PSLarge PS:risk_status_momHigh Risk	-34.724	28.507	52.000	-1.218	0.229

2.2.1.4 Portion Size Trials




```
$emmeans
 risk_status_mom emmean   SE df lower.CL upper.CL
 Low Risk           294 18.1 45      258      331
 High Risk          355 20.4 45      314      396

Results are averaged over the levels of: mom_ed, income, sex, PS
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95
```

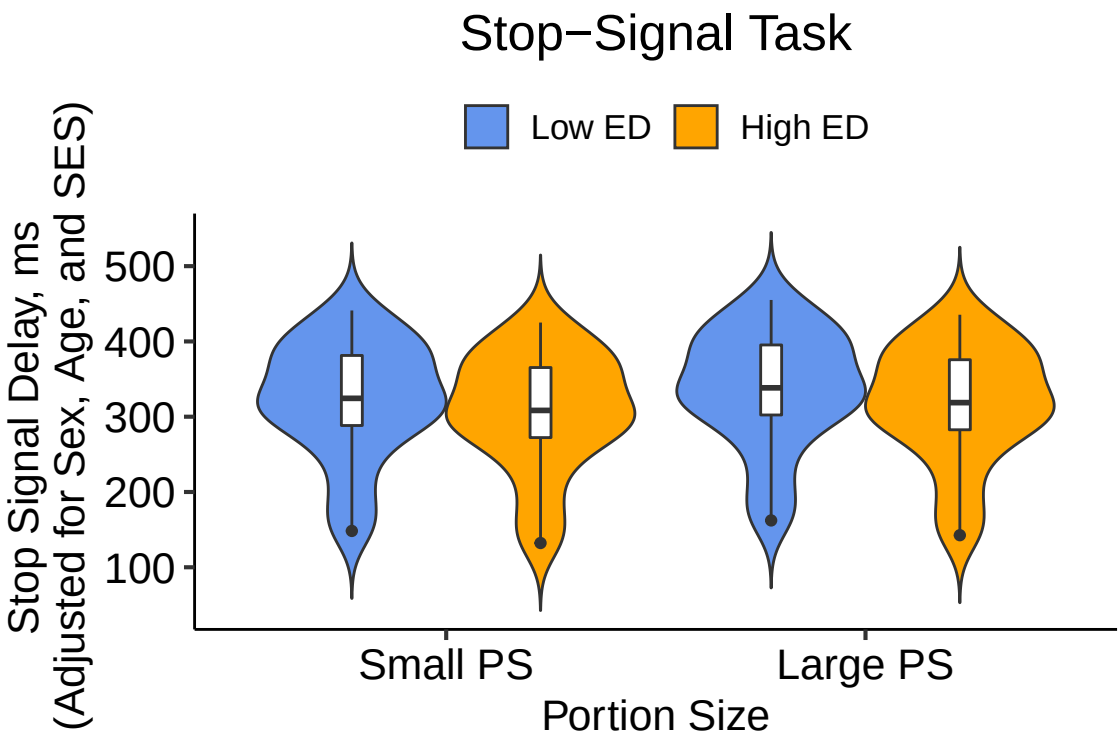
```
$contrasts
 contrast             estimate   SE df t.ratio p.value
 Low Risk - High Risk    -60.7 23.5 45  -2.584  0.0131

Results are averaged over the levels of: mom_ed, income, sex, PS
Degrees-of-freedom method: kenward-roger

$emmeans
 PS       emmean   SE   df lower.CL upper.CL
 Small PS    330 16.9 64.1      297      364
 Large PS    319 16.9 64.1      285      352

Results are averaged over the levels of: mom_ed, income, sex, risk_status_mom
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast            estimate   SE df t.ratio p.value
 Small PS - Large PS     11.6 14.3 52   0.811  0.4213

Results are averaged over the levels of: mom_ed, income, sex, risk_status_mom
Degrees-of-freedom method: kenward-roger
```

2.2.2 Stop Signal Delay

Table 14: Stop-Signal Task SSD - ED x PS

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	228.237	183.535	32.118	1.244	0.223
mom_edAA/Technical Degree	-100.066	57.022	32.000	-1.755	0.089
mom_edBachelor Degree	-39.245	32.032	32.000	-1.225	0.229
mom_edHigh School/GED	-5.423	52.348	32.000	-0.104	0.918
income>$100,000	36.098	47.744	32.000	0.756	0.455
income$51,000 - $100,000	17.549	43.116	32.000	0.407	0.687
sexFemale	36.847	26.984	32.000	1.366	0.182
age_yr	10.464	23.390	32.000	0.447	0.658
PSLarge PS	13.964	12.832	117.000	1.088	0.279
EDHigh ED	-16.042	12.832	117.000	-1.250	0.214
PSLarge PS:EDHigh ED	-3.600	18.148	117.000	-0.198	0.843

2.2.2.1 Design




```
$emmeans
 ED       emmean   SE   df lower.CL upper.CL
 Low ED      316 18.5 36.2      279      354
 High ED     298 18.5 36.2      261      336

Results are averaged over the levels of: mom_ed, income, sex, PS
```

```
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast         estimate   SE  df t.ratio p.value
 Low ED - High ED     17.8 9.07 117   1.966  0.0516

Results are averaged over the levels of: mom_ed, income, sex, PS
Degrees-of-freedom method: kenward-roger
```

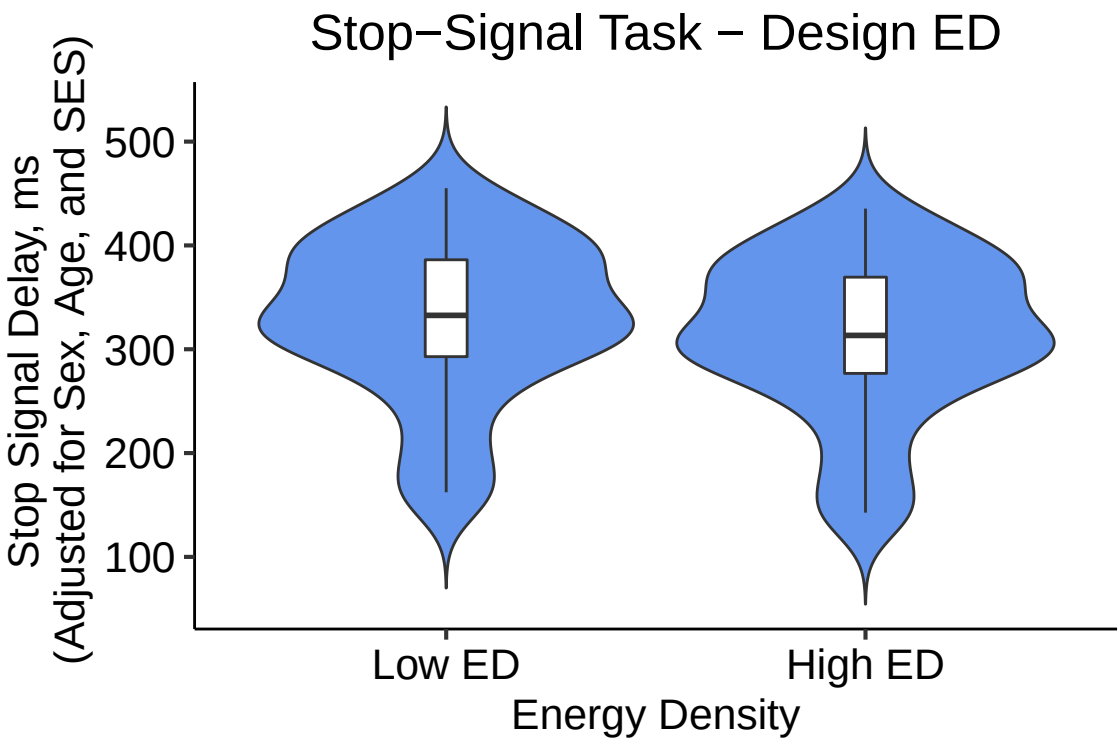
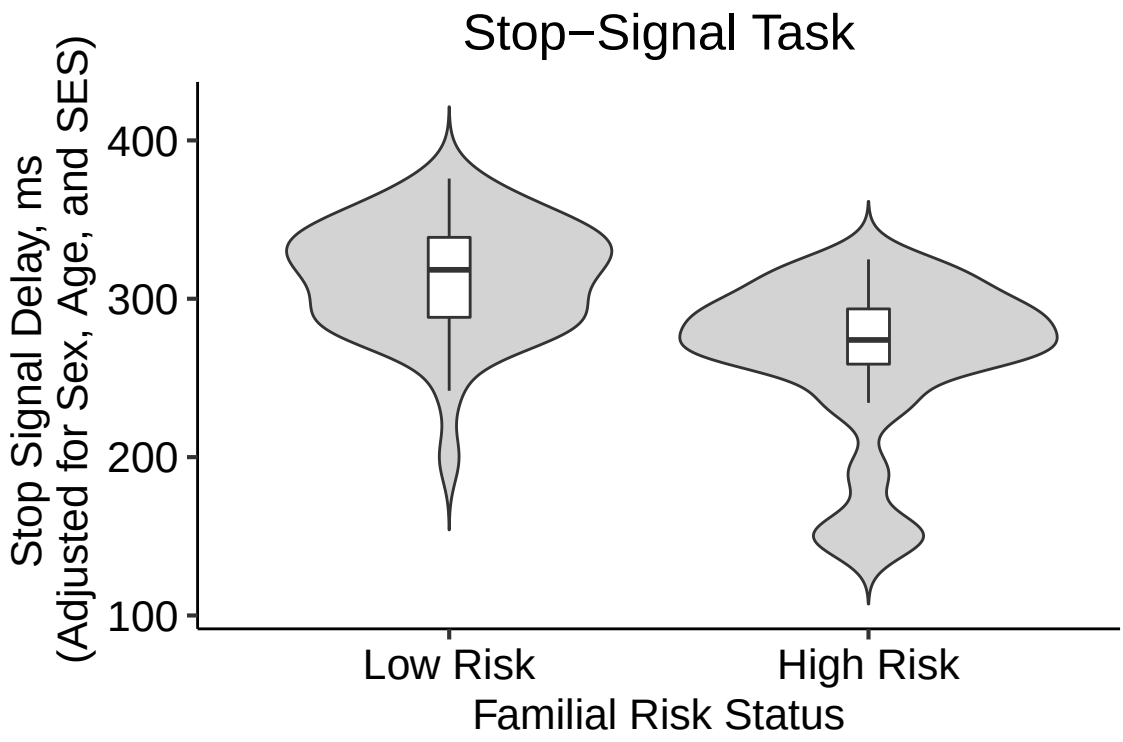


Table 15: Stop-Signal Task SSD - Risk Status

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	156.277	135.022	1.157	0.252
mom_edAA/Technical Degree	-101.175	41.300	-2.450	0.017
mom_edBachelor Degree	-9.519	23.734	-0.401	0.690
mom_edHigh School/GED	29.141	45.309	0.643	0.523
income>$100,000	1.571	41.832	0.038	0.970
income$51,000 - $100,000	14.707	39.243	0.375	0.709
sexFemale	39.853	20.110	1.982	0.052
age_yr	17.845	16.442	1.085	0.282
risk_status_momHigh Risk	-52.107	22.602	-2.305	0.025

2.2.2.2 All Trials



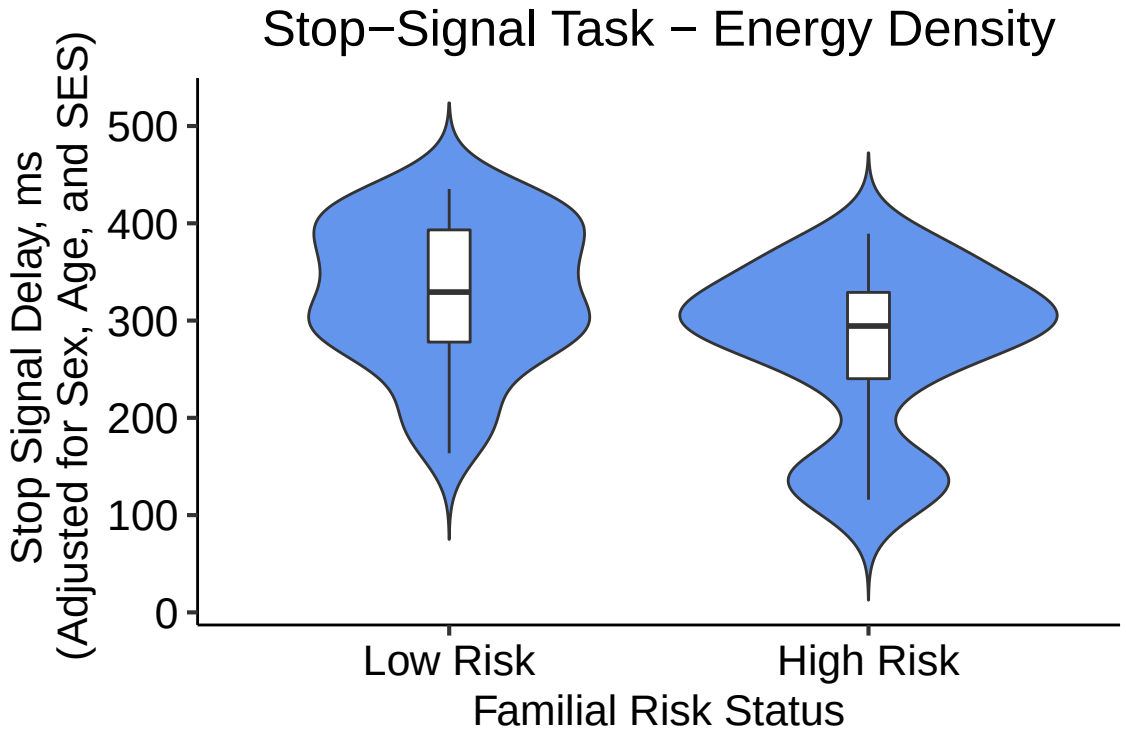

```
$emmeans
 risk_status_mom emmean   SE df lower.CL upper.CL
 Low Risk           300 16.5 60      267      333
 High Risk          248 18.3 60      211      285

Results are averaged over the levels of: mom_ed, income, sex
Confidence level used: 0.95

$contrasts
 contrast             estimate   SE df t.ratio p.value
```

```
 Low Risk - High Risk     52.1 22.6 60   2.305  0.0246

Results are averaged over the levels of: mom_ed, income, sex
```

Table 16: Stop-Signal Task SSD - Risk Status x ED

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	179.451	165.393	43.096	1.085	0.284
mom_edAA/Technical Degree	-64.496	53.179	43.000	-1.213	0.232
mom_edBachelor Degree	3.666	29.623	43.000	0.124	0.902
mom_edHigh School/GED	44.748	50.667	43.000	0.883	0.382
income>$100,000	9.070	46.299	43.000	0.196	0.846
income$51,000 - $100,000	18.598	42.390	43.000	0.439	0.663
sexFemale	56.130	24.972	43.000	2.248	0.030
age_yr	14.287	20.546	43.000	0.695	0.491
EDHigh ED	-4.775	11.059	50.000	-0.432	0.668
risk_status_momHigh Risk	-59.444	28.120	51.230	-2.114	0.039
EDHigh ED:risk_status_momHigh Risk	-15.299	16.629	50.000	-0.920	0.362

2.2.2.3 Energy Density Trials



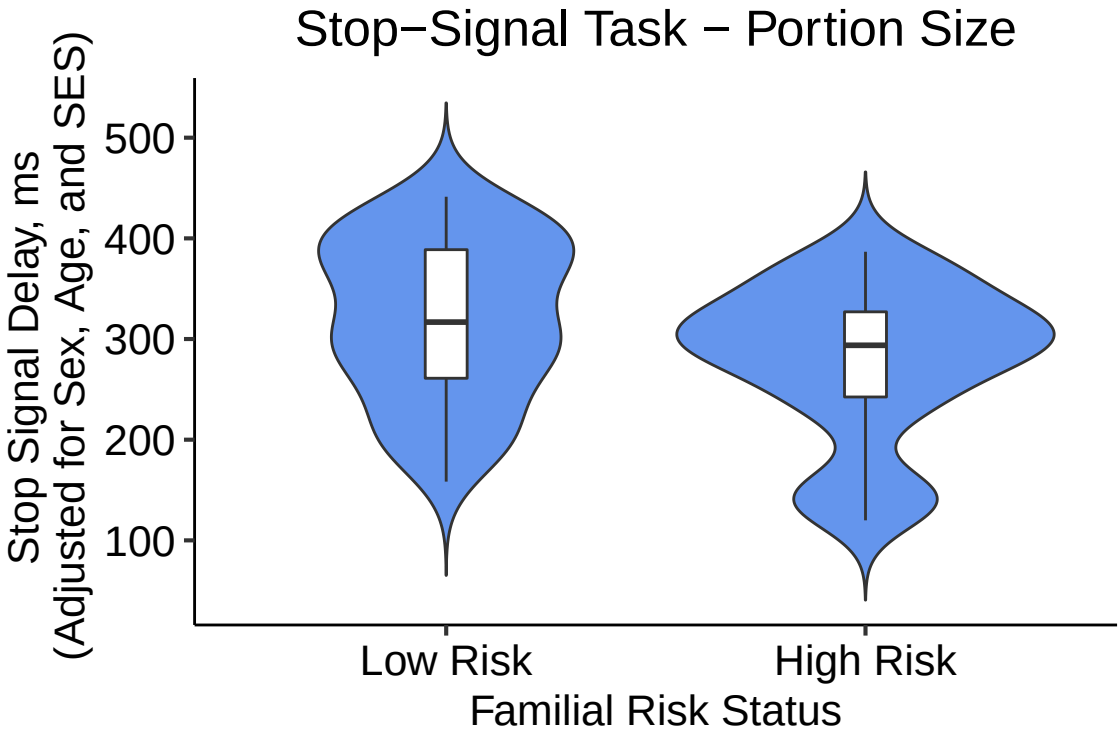

```
$emmeans
 risk_status_mom emmean   SE df lower.CL upper.CL
 Low Risk           321 21.1 43      278      363
 High Risk          254 21.3 43      211      297

Results are averaged over the levels of: mom_ed, income, sex, ED
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95
```

```
$contrasts
 contrast             estimate   SE df t.ratio p.value
 Low Risk - High Risk     67.1 26.9 43   2.498  0.0164

Results are averaged over the levels of: mom_ed, income, sex, ED
Degrees-of-freedom method: kenward-roger

$emmeans
 ED      emmean   SE   df lower.CL upper.CL
 Low ED     294 16.9 48.5      260      328
 High ED    281 16.9 48.5      247      315

Results are averaged over the levels of: mom_ed, income, sex, risk_status_mom
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast         estimate   SE df t.ratio p.value
 Low ED - High ED     12.4 8.31 50   1.494  0.1414

Results are averaged over the levels of: mom_ed, income, sex, risk_status_mom
Degrees-of-freedom method: kenward-roger
```

Table 17: Stop-Signal Task SSD - Risk Status x PS

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	179.797	161.060	45.104	1.116	0.270
mom_edAA/Technical Degree	-75.372	50.944	45.000	-1.480	0.146
mom_edBachelor Degree	-7.256	28.818	45.000	-0.252	0.802
mom_edHigh School/GED	38.690	51.558	45.000	0.750	0.457
income>$100,000	15.141	47.004	45.000	0.322	0.749
income$51,000 - $100,000	11.721	42.798	45.000	0.274	0.785
sexFemale	50.047	24.503	45.000	2.043	0.047
age_yr	13.766	19.959	45.000	0.690	0.494
PSLarge PS	14.587	10.952	52.000	1.332	0.189
risk_status_momHigh Risk	-58.315	27.337	54.338	-2.133	0.037
PSLarge PS:risk_status_momHigh Risk	2.101	16.781	52.000	0.125	0.901

2.2.2.4 Portion Size Trials




```
$emmeans
 risk_status_mom emmean   SE df lower.CL upper.CL
 Low Risk           317 20.1 45      277      358
 High Risk          260 22.6 45      214      305

Results are averaged over the levels of: mom_ed, income, sex, PS
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95
```

```
$contrasts
 contrast             estimate SE df t.ratio p.value
 Low Risk - High Risk     57.3 26 45   2.201  0.0329

Results are averaged over the levels of: mom_ed, income, sex, PS
Degrees-of-freedom method: kenward-roger

$emmeans
 PS       emmean   SE   df lower.CL upper.CL
 Small PS    281 17.4 50.5      246      316
 Large PS    296 17.4 50.5      261      331

Results are averaged over the levels of: mom_ed, income, sex, risk_status_mom
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast            estimate   SE df t.ratio p.value
 Small PS - Large PS    -15.6 8.39 52  -1.864  0.0680

Results are averaged over the levels of: mom_ed, income, sex, risk_status_mom
Degrees-of-freedom method: kenward-roger

$emmeans
 sex    emmean   SE df lower.CL upper.CL
 Male      264 22.0 45      219      308
 Female    314 19.8 45      274      353

Results are averaged over the levels of: mom_ed, income, PS, risk_status_mom
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast      estimate   SE df t.ratio p.value
 Male - Female      -50 24.5 45  -2.043  0.0470

Results are averaged over the levels of: mom_ed, income, PS, risk_status_mom
Degrees-of-freedom method: kenward-roger
```

2.3 N-back

Table 18: Nback Performance Summary

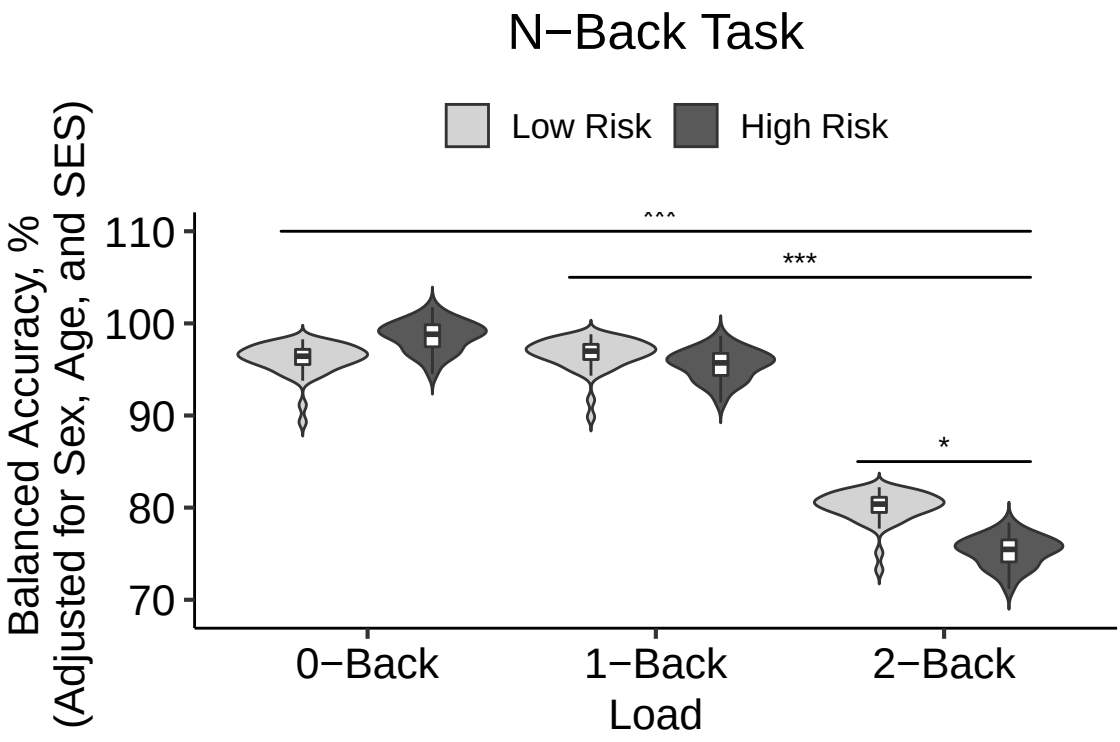
	0-Back		1-Back		2-Back	
Characteristic	Low Risk, N = 50	High Risk, N = 37	Low Risk, N = 50	High Risk, N = 37	Low Risk, N = 50	High Risk, N =
Hits, N	15.5 (1.6)	15.9 (0.3)	15.2 (1.2)	14.7 (1.8)	10.1 (3.2)	8.7 (3.5)
Hits, %	97.1 (8.8)	99.3 (2.0)	95.1 (7.4)	91.7 (11.0)	62.9 (19.8)	54.4 (21.7)
False Alarm, N	2.0 (6.2)	0.9 (1.2)	0.7 (1.2)	0.5 (0.7)	0.8 (1.2)	1.7 (4.1)
False Alarm, %	4.6 (14.4)	2.1 (2.8)	1.6 (2.8)	1.2 (1.5)	1.9 (2.7)	3.9 (9.2)
Ballanced Acc, %	96.2 (10.3)	98.6 (1.6)	96.7 (4.0)	95.3 (5.4)	80.5 (9.8)	75.2 (10.8)
Target RT, ms	634.5 (93.9)	633.6 (68.1)	739.7 (119.4)	767.3 (98.1)	810.5 (188.1)	871.7 (184.9)

[1] Mean (SD)

2.3.1 Ballanced Accuracy

Table 19: Nback Balanced Accuracy - Risk Status x Load

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	91.899	7.717	76.026	11.908	0.000
mom_edAA/Technical Degree	-3.262	2.137	74.000	-1.527	0.131
mom_edBachelor Degree	0.455	1.331	74.000	0.342	0.733
mom_edHigh School/GED	0.172	2.459	74.000	0.070	0.944
income>$100,000	2.137	2.234	74.000	0.957	0.342
income$51,000 - $100,000	2.149	2.011	74.000	1.069	0.289
sexFemale	-0.917	1.169	74.000	-0.785	0.435
age_yr	0.339	0.949	74.000	0.358	0.722
block1-Back	0.549	1.551	162.000	0.354	0.724
block2-Back	-16.052	1.551	162.000	-10.352	0.000
risk_status_momHigh Risk	3.104	1.853	218.046	1.675	0.095
block1-Back:risk_status_momHigh Risk	-3.658	2.388	162.000	-1.532	0.128
block2-Back:risk_status_momHigh Risk	-7.300	2.388	162.000	-3.057	0.003




```
$emmeans
 block  emmean   SE  df lower.CL upper.CL
 0-Back   96.4 1.01 191     94.4     98.4
 1-Back   95.1 1.01 191     93.1     97.1
 2-Back   76.7 1.01 191     74.7     78.7
```

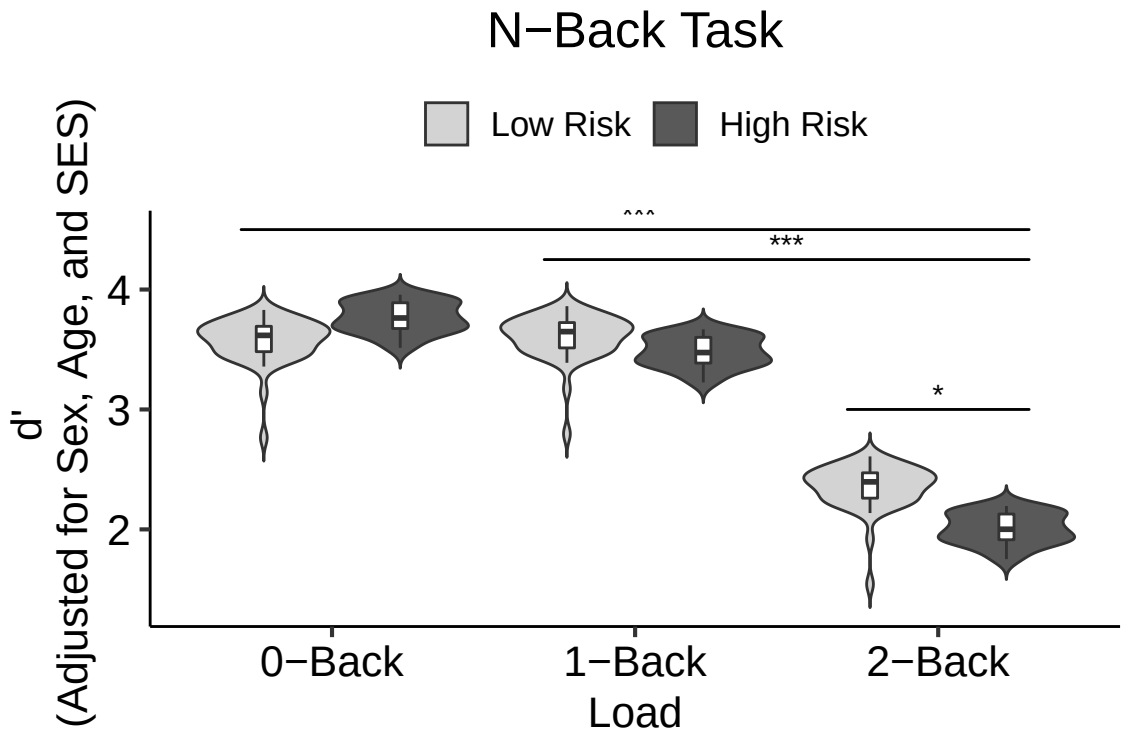
```
Results are averaged over the levels of: mom_ed, income, sex, risk_status_mom
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast            estimate   SE  df t.ratio p.value
 (0-Back) - (1-Back)     1.28 1.19 162   1.072  0.2854
 (0-Back) - (2-Back)    19.70 1.19 162  16.501  <.0001
 (1-Back) - (2-Back)    18.42 1.19 162  15.429  <.0001

Results are averaged over the levels of: mom_ed, income, sex, risk_status_mom
Degrees-of-freedom method: kenward-roger

$emmeans
 risk_status_mom emmean    SE df lower.CL upper.CL
 Low Risk          89.7 0.952 74     87.8     91.6
 High Risk         89.1 0.983 74     87.2     91.1

Results are averaged over the levels of: mom_ed, income, sex, block
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast             estimate   SE df t.ratio p.value
 Low Risk - High Risk    0.549 1.24 74   0.443  0.6592

Results are averaged over the levels of: mom_ed, income, sex, block
Degrees-of-freedom method: kenward-roger

$emmeans
 block  risk_status_mom emmean   SE  df lower.CL upper.CL
 0-Back Low Risk          94.9 1.31 194     92.3     97.4
 1-Back Low Risk          95.4 1.31 194     92.8     98.0
 2-Back Low Risk          78.8 1.31 194     76.2     81.4
 0-Back High Risk         98.0 1.44 213     95.1    100.8
 1-Back High Risk         94.8 1.44 213     92.0     97.7
 2-Back High Risk         74.6 1.44 213     71.8     77.4

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast                                  estimate   SE  df t.ratio p.value
 (0-Back Low Risk) - (1-Back Low Risk)    -0.54908 1.55 162  -0.354  0.7237
 (0-Back Low Risk) - (2-Back Low Risk)    16.05248 1.55 162  10.352  <.0001
 (0-Back Low Risk) - (0-Back High Risk)   -3.10395 1.85 218  -1.675  0.0954
 (0-Back Low Risk) - (1-Back High Risk)    0.00482 1.85 218   0.003  0.9979
 (0-Back Low Risk) - (2-Back High Risk)   20.24836 1.85 218  10.924  <.0001
 (1-Back Low Risk) - (2-Back Low Risk)    16.60156 1.55 162  10.706  <.0001
 (1-Back Low Risk) - (0-Back High Risk)   -2.55487 1.85 218  -1.378  0.1695
 (1-Back Low Risk) - (1-Back High Risk)    0.55390 1.85 218   0.299  0.7653
```

```
 (1-Back Low Risk) - (2-Back High Risk)   20.79745 1.85 218  11.221  <.0001
 (2-Back Low Risk) - (0-Back High Risk)  -19.15643 1.85 218 -10.335  <.0001
 (2-Back Low Risk) - (1-Back High Risk)  -16.04766 1.85 218  -8.658  <.0001
 (2-Back Low Risk) - (2-Back High Risk)    4.19588 1.85 218   2.264  0.0246
 (0-Back High Risk) - (1-Back High Risk)   3.10877 1.82 162   1.712  0.0888
 (0-Back High Risk) - (2-Back High Risk)  23.35231 1.82 162  12.859  <.0001
 (1-Back High Risk) - (2-Back High Risk)  20.24354 1.82 162  11.147  <.0001

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
```

2.3.2 d'

Table 20: Nback Balanced Accuracy - Risk Status x Load

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	3.435	0.660	75.724	5.202	0.000
mom_edAA/Technical Degree	-0.222	0.183	74.000	-1.214	0.229
mom_edBachelor Degree	0.031	0.114	74.000	0.276	0.784
mom_edHigh School/GED	0.021	0.211	74.000	0.100	0.921
income>$100,000	0.116	0.191	74.000	0.605	0.547
income$51,000 - $100,000	0.139	0.172	74.000	0.808	0.422
sexFemale	0.003	0.100	74.000	0.035	0.972
age_yr	0.003	0.081	74.000	0.034	0.973
block1-Back	0.031	0.123	162.000	0.255	0.799
block2-Back	-1.222	0.123	162.000	-9.972	0.000
risk_status_momHigh Risk	0.216	0.152	207.117	1.419	0.158
block1-Back:risk_status_momHigh Risk	-0.319	0.189	162.000	-1.693	0.092
block2-Back:risk_status_momHigh Risk	-0.540	0.189	162.000	-2.863	0.005




```
$emmeans
 block  risk_status_mom emmean    SE  df lower.CL upper.CL
 0-Back Low Risk          3.50 0.108 181     3.29     3.71
 1-Back Low Risk          3.53 0.108 181     3.32     3.74
 2-Back Low Risk          2.28 0.108 181     2.07     2.49
 0-Back High Risk         3.72 0.118 201     3.48     3.95
 1-Back High Risk         3.43 0.118 201     3.20     3.66
```

```
 2-Back High Risk         1.95 0.118 201     1.72     2.19

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast                                estimate    SE  df t.ratio p.value
 (0-Back Low Risk) - (1-Back Low Risk)    -0.0313 0.123 162  -0.255  0.7990
 (0-Back Low Risk) - (2-Back Low Risk)     1.2217 0.123 162   9.972  <.0001
 (0-Back Low Risk) - (0-Back High Risk)   -0.2157 0.152 207  -1.419  0.1575
 (0-Back Low Risk) - (1-Back High Risk)    0.0725 0.152 207   0.477  0.6338
 (0-Back Low Risk) - (2-Back High Risk)    1.5461 0.152 207  10.168  <.0001
 (1-Back Low Risk) - (2-Back Low Risk)     1.2530 0.123 162  10.227  <.0001
 (1-Back Low Risk) - (0-Back High Risk)   -0.1844 0.152 207  -1.213  0.2265
 (1-Back Low Risk) - (1-Back High Risk)    0.1038 0.152 207   0.683  0.4956
 (1-Back Low Risk) - (2-Back High Risk)    1.5773 0.152 207  10.374  <.0001
 (2-Back Low Risk) - (0-Back High Risk)   -1.4374 0.152 207  -9.453  <.0001
 (2-Back Low Risk) - (1-Back High Risk)   -1.1492 0.152 207  -7.558  <.0001
 (2-Back Low Risk) - (2-Back High Risk)    0.3244 0.152 207   2.133  0.0341
 (0-Back High Risk) - (1-Back High Risk)   0.2882 0.143 162   2.009  0.0462
 (0-Back High Risk) - (2-Back High Risk)   1.7618 0.143 162  12.280  <.0001
 (1-Back High Risk) - (2-Back High Risk)   1.4735 0.143 162  10.271  <.0001

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger

$emmeans
 block  emmean     SE  df lower.CL upper.CL
 0-Back   3.61 0.0838 178     3.44     3.77
 1-Back   3.48 0.0838 178     3.31     3.65
 2-Back   2.12 0.0838 178     1.95     2.28

Results are averaged over the levels of: mom_ed, income, sex, risk_status_mom
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast            estimate     SE  df t.ratio p.value
 (0-Back) - (1-Back)    0.128 0.0943 162   1.362  0.1751
 (0-Back) - (2-Back)    1.492 0.0943 162  15.814  <.0001
 (1-Back) - (2-Back)    1.363 0.0943 162  14.452  <.0001

Results are averaged over the levels of: mom_ed, income, sex, risk_status_mom
Degrees-of-freedom method: kenward-roger
```

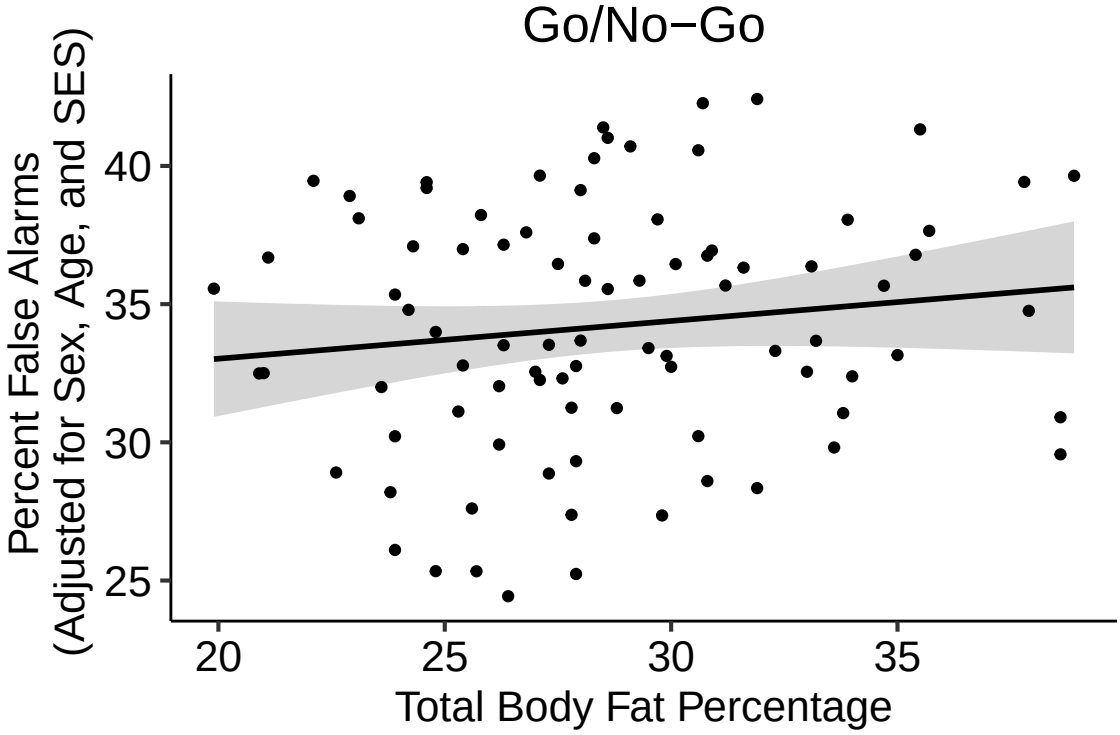
3 Effect of Total Body Fat Percentage

3.1 Go-NoGo

3.1.1 Percent False Alarms

Table 21: Go-NoGo Percent False Alarms - Body Fat Percentage

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	44.029	26.885	1.638	0.105
mom_edAA/Technical Degree	5.348	6.477	0.826	0.411
mom_edBachelor Degree	1.316	4.018	0.328	0.744
mom_edHigh School/GED	-2.863	8.260	-0.347	0.730
income>$100,000	3.060	6.908	0.443	0.659
income$51,000 - $100,000	-1.736	6.241	-0.278	0.782
sexFemale	-5.970	3.924	-1.521	0.132
age_yr	-2.632	2.843	-0.926	0.357
dxa_total_body_perc_fat	0.434	0.446	0.972	0.334



3.1.2 Percent Hits

Table 22: Go-NoGo - Percent Hits - Body Fat Percentage

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	94.783	5.286	17.932	0.000
mom_edAA/Technical Degree	2.111	1.273	1.657	0.101
mom_edBachelor Degree	1.023	0.790	1.295	0.199
mom_edHigh School/GED	-0.670	1.624	-0.412	0.681
income>$100,000	-1.297	1.358	-0.955	0.342
income$51,000 - $100,000	-1.598	1.227	-1.302	0.197
sexFemale	1.028	0.772	1.333	0.187
age_yr	0.422	0.559	0.755	0.452
dxa_total_body_perc_fat	-0.032	0.088	-0.365	0.716

3.1.3 Go Reaction Time

Table 23: Go-NoGo - Go Reaction Time

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	776.690	100.069	7.762	0.000
mom_edAA/Technical Degree	-20.090	24.109	-0.833	0.407
mom_edBachelor Degree	-20.516	14.954	-1.372	0.174
mom_edHigh School/GED	-23.621	30.746	-0.768	0.445
income>$100,000	-27.689	25.712	-1.077	0.285
income$51,000 - $100,000	-16.752	23.228	-0.721	0.473
sexFemale	17.626	14.607	1.207	0.231
age_yr	-25.916	10.581	-2.449	0.017
dxa_total_body_perc_fat	-0.139	1.660	-0.084	0.934

3.1.4 d'

Table 24: Go-NoGo - d'

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	1.707	1.111	1.536	0.128
mom_edAA/Technical Degree	0.064	0.268	0.238	0.813
mom_edBachelor Degree	0.014	0.166	0.084	0.933
mom_edHigh School/GED	-0.082	0.341	-0.239	0.812
income>$100,000	-0.194	0.286	-0.678	0.500
income$51,000 - $100,000	-0.104	0.258	-0.403	0.688
sexFemale	0.266	0.162	1.640	0.105
age_yr	0.144	0.118	1.226	0.224
dxa_total_body_perc_fat	-0.014	0.018	-0.777	0.440

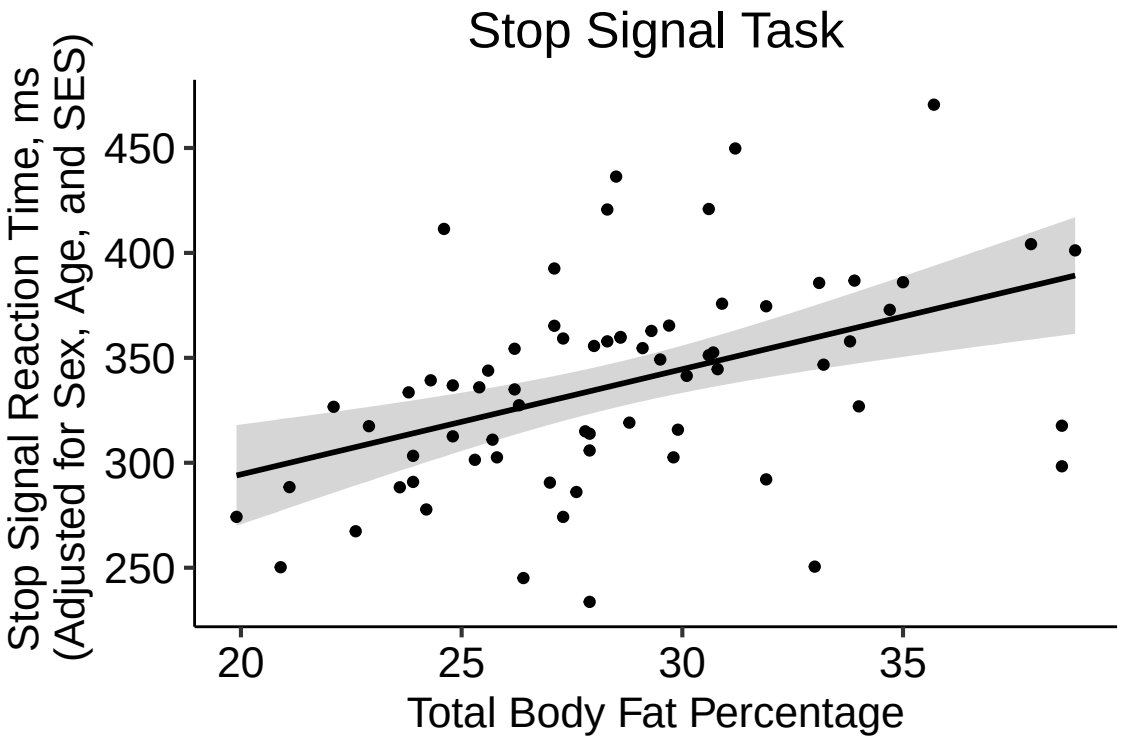
3.2 Stop-Signal Task

3.2.1 Stop Signal Reaction Time

Table 25: Stop-Signal Task SSRT - Body Fat Percentage

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	502.206	206.079	2.437	0.018
mom_edAA/Technical Degree	76.204	50.563	1.507	0.137
mom_edBachelor Degree	-2.917	28.659	-0.102	0.919
mom_edHigh School/GED	-71.793	57.289	-1.253	0.215
income>$100,000	-6.392	52.543	-0.122	0.904
income$51,000 - $100,000	-3.815	49.405	-0.077	0.939
sexFemale	14.367	26.955	0.533	0.596
age_yr	-37.897	21.108	-1.795	0.078
dxa_total_body_perc_fat	4.551	3.260	1.396	0.168

3.2.1.1 Overall



3.2.2 Energy Density Trials

Table 26: Stop-Signal Task SSRT - ED x Body Fat Percentage

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	551.769	187.720	43.148	2.939	0.005
mom_edAA/Technical Degree	94.737	57.930	43.000	1.635	0.109
mom_edBachelor Degree	-22.832	32.019	43.000	-0.713	0.480
mom_edHigh School/GED	-94.068	58.300	43.000	-1.614	0.114
income>$100,000	-36.382	52.690	43.000	-0.690	0.494
income$51,000 - $100,000	-22.773	48.370	43.000	-0.471	0.640
sexFemale	-2.417	30.618	43.000	-0.079	0.937
age_yr	-23.624	23.446	43.000	-1.008	0.319
EDHigh ED	2.882	15.541	50.000	0.185	0.854
bfp_center	7.758	3.991	64.205	1.944	0.056
EDHigh ED:bfp_center	-3.423	3.603	50.000	-0.950	0.347

```
 bfp_center bfp_center.trend   SE df t.ratio p.value
    -0.0406             6.05 3.56 43   1.698  0.0968

Results are averaged over the levels of: mom_ed, income, sex, ED
Degrees-of-freedom method: kenward-roger

$emmeans
 ED      emmean   SE   df lower.CL upper.CL
 Low ED     342 20.3 57.5      301      383
 High ED    345 20.3 57.5      304      386

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast         estimate   SE df t.ratio p.value
 Low ED - High ED    -3.02 15.5 50  -0.194  0.8467

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
```

3.2.3 Portion Size Trials

Table 27: Stop-Signal Task SSRT - PS x Body Fat Percentage

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	512.847	153.224	45.195	3.347	0.002
mom_edAA/Technical Degree	-30.682	47.800	45.000	-0.642	0.524
mom_edBachelor Degree	-14.543	26.247	45.000	-0.554	0.582
mom_edHigh School/GED	-97.409	49.128	45.000	-1.983	0.054
income>$100,000	-38.401	44.106	45.000	-0.871	0.389
income$51,000 - $100,000	-12.132	40.269	45.000	-0.301	0.765
sexFemale	12.510	24.867	45.000	0.503	0.617
age_yr	-18.626	19.268	45.000	-0.967	0.339
PSLarge PS	-8.906	14.255	52.000	-0.625	0.535
bfp_center	5.662	3.284	70.126	1.724	0.089
PSLarge PS:bfp_center	-1.728	3.132	52.000	-0.552	0.583

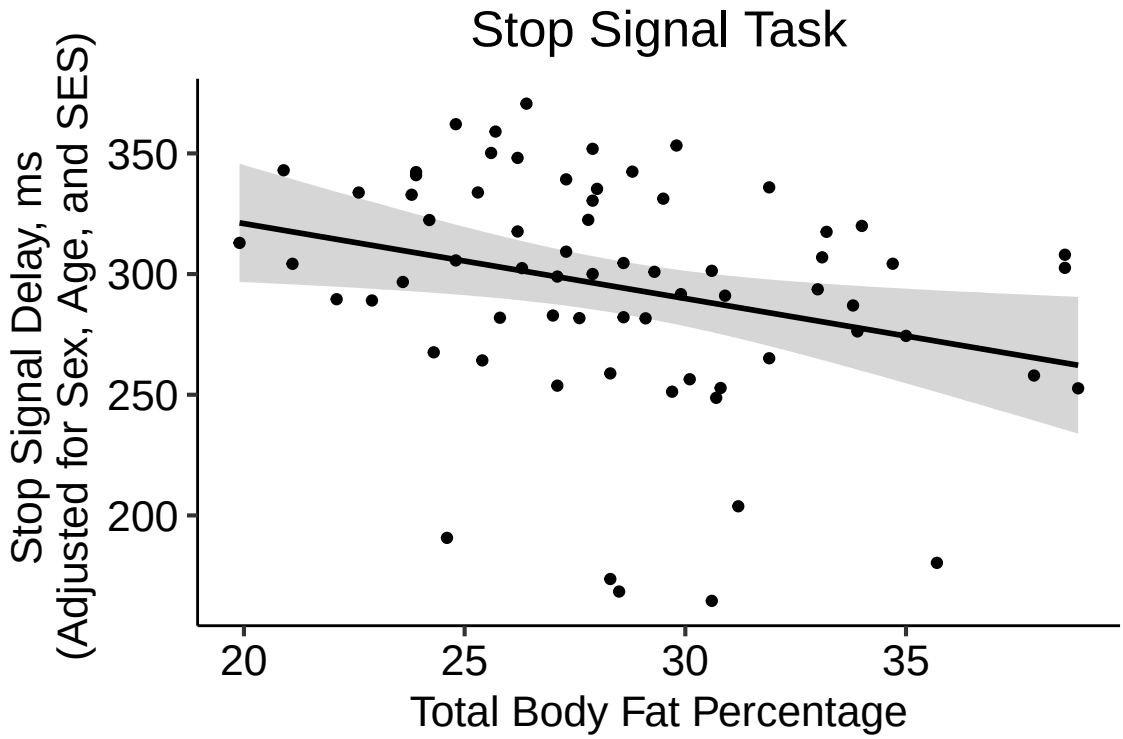
```
 bfp_center bfp_center.trend   SE df t.ratio p.value
     0.0436              4.8 2.89 45   1.662  0.1035

Results are averaged over the levels of: mom_ed, income, sex, PS
Degrees-of-freedom method: kenward-roger

$emmeans
 PS       emmean   SE   df lower.CL upper.CL
 Small PS    322 17.4 62.8      287      357
 Large PS    313 17.4 62.8      278      348

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast            estimate   SE df t.ratio p.value
 Small PS - Large PS     8.98 14.3 52   0.630  0.5314

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
```

3.2.4 Stop Signal Delay

Table 28: Stop-Signal Task SSD - Body Fat Percentage

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	343.930	165.397	2.079	0.042
mom_edAA/Technical Degree	-116.200	40.582	-2.863	0.006
mom_edBachelor Degree	-26.438	23.001	-1.149	0.255
mom_edHigh School/GED	28.045	45.979	0.610	0.544
income>$100,000	11.667	42.170	0.277	0.783
income$51,000 - $100,000	13.165	39.652	0.332	0.741
sexFemale	45.588	21.634	2.107	0.039
age_yr	10.650	16.941	0.629	0.532
dxa_total_body_perc_fat	-5.183	2.616	-1.981	0.052

3.2.4.1 Overall



3.2.4.2 Energy Density Trials

Table 29: Stop-Signal Task SSD - Body Fat Percentage x ED

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	266.333	165.836	43.054	1.606	0.116
mom_edAA/Technical Degree	-96.110	51.204	43.000	-1.877	0.067
mom_edBachelor Degree	-17.471	28.302	43.000	-0.617	0.540
mom_edHigh School/GED	47.224	51.532	43.000	0.916	0.365
income>$100,000	24.248	46.573	43.000	0.521	0.605
income$51,000 - $100,000	16.907	42.754	43.000	0.395	0.694
sexFemale	66.397	27.063	43.000	2.453	0.018
age_yr	-0.045	20.724	43.000	-0.002	0.998
EDHigh ED	-11.493	8.297	50.000	-1.385	0.172
bfp_center	-7.882	3.292	51.020	-2.394	0.020
EDHigh ED:bfp_center	1.201	1.924	50.000	0.624	0.535

```
 bfp_center bfp_center.trend   SE df t.ratio p.value
    -0.0406            -7.28 3.15 43  -2.313  0.0256

Results are averaged over the levels of: mom_ed, income, sex, ED
Degrees-of-freedom method: kenward-roger

$emmeans
 ED      emmean   SE   df lower.CL upper.CL
 Low ED     297 17.1 48.4      262      331
 High ED    285 17.1 48.4      251      319

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast         estimate  SE df t.ratio p.value
 Low ED - High ED     11.5 8.3 50   1.391  0.1703

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
```

Table 30: Stop-Signal Task SSD - Body Fat Percentage x PS

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	245.057	164.891	45.057	1.486	0.144
mom_edAA/Technical Degree	-78.078	51.479	45.000	-1.517	0.136
mom_edBachelor Degree	-19.506	28.267	45.000	-0.690	0.494
mom_edHigh School/GED	42.825	52.909	45.000	0.809	0.423
income>$100,000	26.385	47.501	45.000	0.555	0.581
income$51,000 - $100,000	13.937	43.369	45.000	0.321	0.749
sexFemale	57.258	26.781	45.000	2.138	0.038
age_yr	1.919	20.752	45.000	0.092	0.927
PSLarge PS	15.446	8.284	52.000	1.865	0.068
bfp_center	-6.372	3.239	52.707	-1.967	0.054
PSLarge PS:bfp_center	0.806	1.820	52.000	0.443	0.660

3.2.4.3 Portion Size Trials

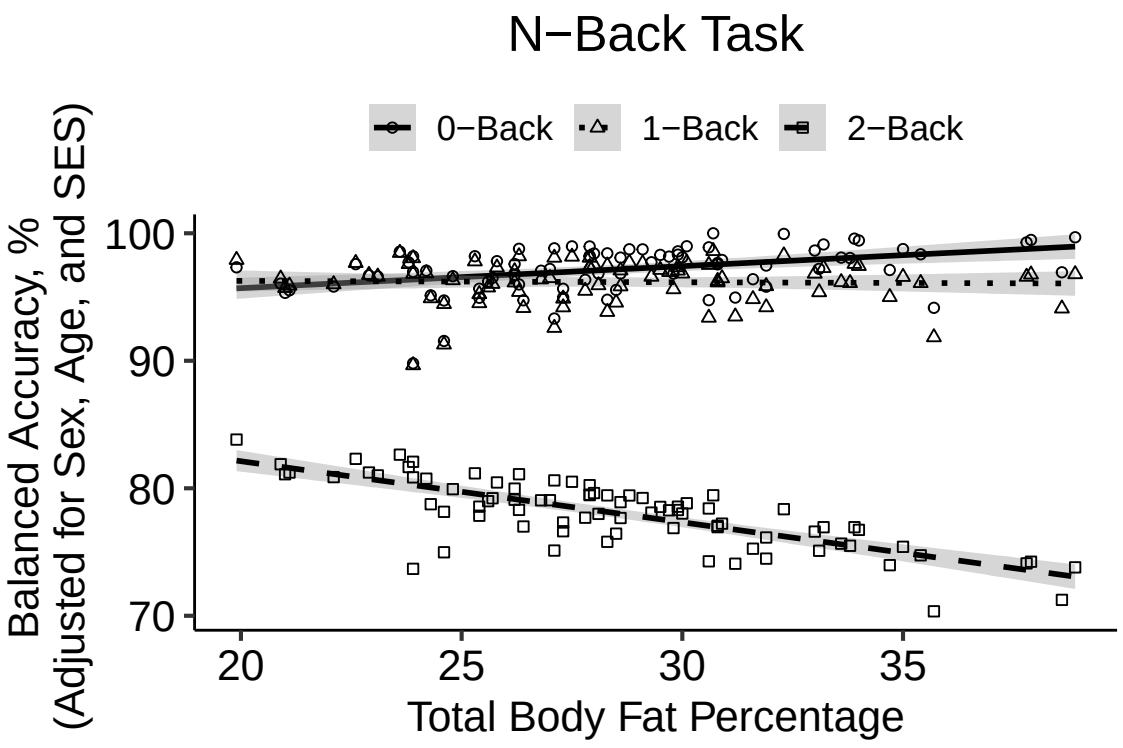
```
 bfp_center bfp_center.trend   SE df t.ratio p.value
     0.0436            -5.97 3.11 45  -1.920  0.0612

Results are averaged over the levels of: mom_ed, income, sex, PS
Degrees-of-freedom method: kenward-roger

$emmeans
 PS       emmean   SE   df lower.CL upper.CL
 Small PS    288 17.6 50.3      253      323
 Large PS    304 17.6 50.3      268      339

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast            estimate   SE df t.ratio p.value
 Small PS - Large PS    -15.5 8.28 52  -1.869  0.0673

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
```

3.3 N-back

3.3.1 Ballanced Accuracy

Table 31: Nback Balanced Accuracy - Body Fat Percentage x Load

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	93.461	7.685	75.199	12.161	0.000
mom_edAA/Technical Degree	-3.366	2.092	74.000	-1.609	0.112
mom_edBachelor Degree	0.380	1.304	74.000	0.291	0.772
mom_edHigh School/GED	0.300	2.493	74.000	0.120	0.905
income>$100,000	2.380	2.219	74.000	1.073	0.287
income$51,000 - $100,000	2.253	2.019	74.000	1.116	0.268
sexFemale	-0.744	1.267	74.000	-0.588	0.559
age_yr	0.281	0.961	74.000	0.292	0.771
block1-Back	-0.986	1.192	162.003	-0.828	0.409
block2-Back	-19.106	1.192	162.003	-16.030	0.000
bfp_center	0.201	0.219	216.262	0.919	0.359
block1-Back:bfp_center	-0.183	0.280	162.003	-0.653	0.515
block2-Back:bfp_center	-0.651	0.280	162.003	-2.325	0.021



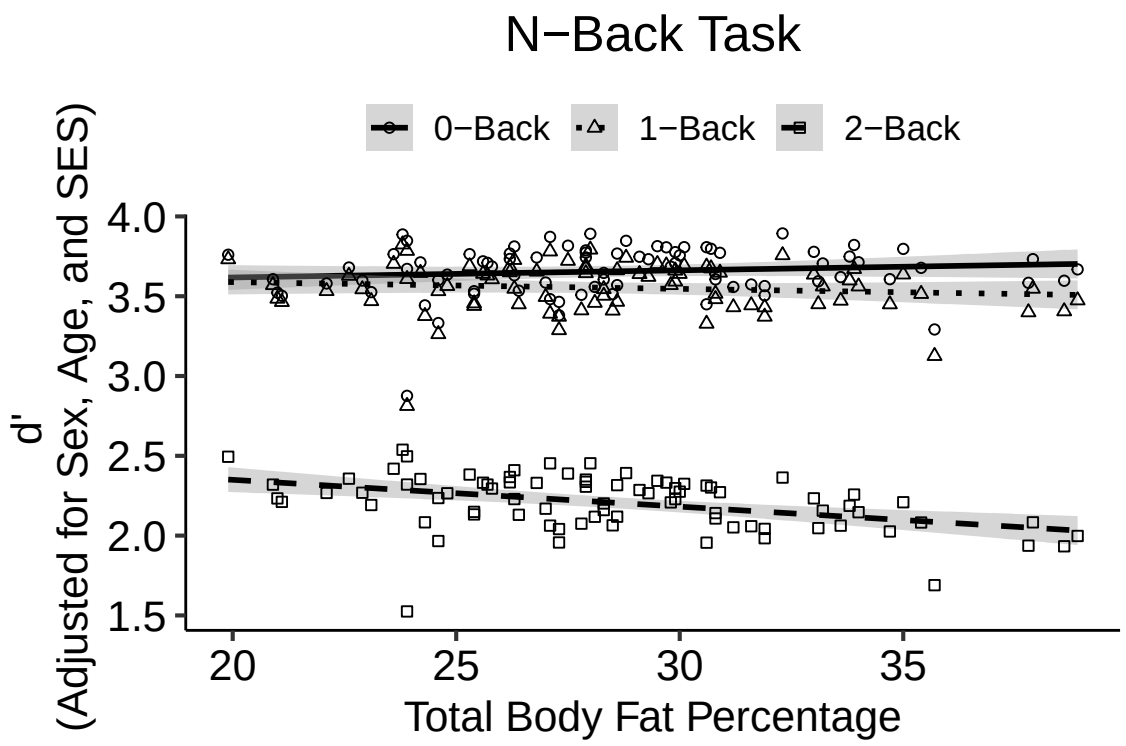

```
$emmeans
 block  emmean   SE  df lower.CL upper.CL
 0-Back   96.2 1.01 191     94.2     98.2
 1-Back   95.2 1.01 191     93.2     97.2
 2-Back   77.0 1.01 191     75.0     79.0
```

```
Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast            estimate   SE  df t.ratio p.value
 (0-Back) - (1-Back)    0.993 1.19 162   0.834  0.6828
 (0-Back) - (2-Back)   19.131 1.19 162  16.052  <.0001
 (1-Back) - (2-Back)   18.137 1.19 162  15.218  <.0001

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
P value adjustment: tukey method for comparing a family of 3 estimates

 block  bfp_center bfp_center.trend    SE  df t.ratio p.value
 0-Back     0.0381           0.2011 0.219 216   0.919  0.3592
 1-Back     0.0381           0.0181 0.219 216   0.083  0.9343
 2-Back     0.0381          -0.4503 0.219 216  -2.058  0.0408

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
```

3.3.2 d'

Table 32: Nback Balanced Accuracy - Body Fat Percentage x Load

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	3.544	0.659	75.041	5.381	0.000
mom_edAA/Technical Degree	-0.240	0.179	74.000	-1.335	0.186
mom_edBachelor Degree	0.020	0.112	74.000	0.177	0.860
mom_edHigh School/GED	0.027	0.214	74.000	0.124	0.901
income>$100,000	0.143	0.190	74.000	0.753	0.454
income$51,000 - $100,000	0.149	0.173	74.000	0.859	0.393
sexFemale	0.015	0.109	74.000	0.137	0.891
age_yr	-0.001	0.082	74.000	-0.017	0.986
block1-Back	-0.103	0.095	162.000	-1.083	0.281
block2-Back	-1.449	0.095	162.000	-15.208	0.000
bfp_center	0.003	0.018	206.521	0.163	0.871
block1-Back:bfp_center	-0.009	0.022	162.000	-0.389	0.697
block2-Back:bfp_center	-0.021	0.022	162.000	-0.951	0.343



$emmeans

```
 block  emmean     SE  df lower.CL upper.CL
 0-Back   3.59 0.0843 179     3.42     3.76
 1-Back   3.49 0.0843 179     3.32     3.65
 2-Back   2.14 0.0843 179     1.97     2.31

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast            estimate     SE  df t.ratio p.value
 (0-Back) - (1-Back)    0.103 0.0953 162   1.086  0.5239
 (0-Back) - (2-Back)    1.449 0.0953 162  15.217  <.0001
 (1-Back) - (2-Back)    1.346 0.0953 162  14.131  <.0001

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
P value adjustment: tukey method for comparing a family of 3 estimates

 bfp_center bfp_center.trend     SE df t.ratio p.value
     0.0381         -0.00706 0.0126 74  -0.559  0.5780

Results are averaged over the levels of: mom_ed, income, sex, block
Degrees-of-freedom method: kenward-roger
```

4 Exploratory Analyses: relative impact of risk and body fat percentage

4.1 Go-NoGo

4.1.1 Percent False Alarms

Table 33: Go-NoGo Percent False Alarms - Body Fat Percentage + Risk Status

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	49.377	26.691	1.850	0.068
mom_edAA/Technical Degree	2.917	6.534	0.446	0.657
mom_edBachelor Degree	-0.272	4.062	-0.067	0.947
mom_edHigh School/GED	-3.270	8.152	-0.401	0.689
income>$100,000	5.797	6.985	0.830	0.409
income$51,000 - $100,000	-0.959	6.172	-0.155	0.877
sexFemale	-6.586	3.887	-1.695	0.094
age_yr	-2.694	2.805	-0.961	0.340
risk_status_momHigh Risk	7.310	4.099	1.783	0.078
dxa_total_body_perc_fat	0.156	0.467	0.333	0.740

4.2 Stop-Signal Task

4.2.1 Stop Signal Reaction Time

Table 34: Stop-Signal Task SSRT - Body Fat Percentage + Risk Status

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	583.055	203.472	2.866	0.006
mom_edAA/Technical Degree	50.080	50.537	0.991	0.326
mom_edBachelor Degree	-22.290	29.219	-0.763	0.449
mom_edHigh School/GED	-88.884	56.161	-1.583	0.119
income>$100,000	3.842	51.216	0.075	0.940
income$51,000 - $100,000	-6.790	47.972	-0.142	0.888
sexFemale	6.941	26.386	0.263	0.793
age_yr	-41.441	20.552	-2.016	0.048
dxa_total_body_perc_fat	2.373	3.320	0.715	0.478
risk_status_momHigh Risk	62.789	28.990	2.166	0.034

4.2.1.1 Overall

4.2.2 Energy Density Trials

Table 35: Stop-Signal Task SSRT - ED + Body Fat Percentage + Risk Status

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	633.014	177.965	42.16	3.557	0.001
mom_edAA/Technical Degree	48.601	56.759	42.00	0.856	0.397
mom_edBachelor Degree	-51.092	31.696	42.00	-1.612	0.114
mom_edHigh School/GED	-112.659	54.899	42.00	-2.052	0.046
income>$100,000	-21.219	49.544	42.00	-0.428	0.671
income$51,000 - $100,000	-27.402	45.220	42.00	-0.606	0.548
sexFemale	-11.397	28.796	42.00	-0.396	0.694
age_yr	-36.098	22.386	42.00	-1.612	0.114
EDHigh ED	3.020	15.525	51.00	0.195	0.847
bfp_center	2.606	3.564	42.00	0.731	0.469
risk_status_momHigh Risk	82.736	30.685	42.00	2.696	0.010

4.2.3 Portion Size Trials

Table 36: Stop-Signal Task SSRT - PS + Body Fat Percentage + Risk Status

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	470.062	183.367	44.131	2.564	0.014
mom_edAA/Technical Degree	-39.473	46.243	44.000	-0.854	0.398
mom_edBachelor Degree	-28.114	26.091	44.000	-1.078	0.287
mom_edHigh School/GED	-107.786	47.588	44.000	-2.265	0.028
income>$100,000	-30.376	42.665	44.000	-0.712	0.480
income$51,000 - $100,000	-13.078	38.802	44.000	-0.337	0.738
sexFemale	5.035	24.219	44.000	0.208	0.836
age_yr	-24.264	18.756	44.000	-1.294	0.203
PSLarge PS	-8.981	14.160	53.000	-0.634	0.529
dxa_total_body_perc_fat	2.651	2.960	44.000	0.896	0.375
risk_status_momHigh Risk	53.023	25.070	44.000	2.115	0.040

4.2.4 Stop Signal Delay

Table 37: Stop-Signal Task SSD - Body Fat Percentage + Risk Status

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	289.493	165.216	1.752	0.085
mom_edAA/Technical Degree	-98.610	41.035	-2.403	0.019
mom_edBachelor Degree	-13.394	23.725	-0.565	0.575
mom_edHigh School/GED	39.552	45.602	0.867	0.389
income>$100,000	4.776	41.587	0.115	0.909
income$51,000 - $100,000	15.168	38.953	0.389	0.698
sexFemale	50.588	21.425	2.361	0.022
age_yr	13.037	16.688	0.781	0.438
dxa_total_body_perc_fat	-3.717	2.696	-1.379	0.173
risk_status_momHigh Risk	-42.277	23.540	-1.796	0.078

4.2.4.1 Overall

4.2.4.2 Energy Density Trials

Table 38: Stop-Signal Task SSD - ED + Body Fat Percentage + Risk Status

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	362.164	198.810	42.036	1.822	0.076
mom_edAA/Technical Degree	-67.554	52.336	42.000	-1.291	0.204
mom_edBachelor Degree	0.020	29.226	42.000	0.001	0.999
mom_edHigh School/GED	58.731	50.621	42.000	1.160	0.253
income>$100,000	14.862	45.683	42.000	0.325	0.747
income$51,000 - $100,000	19.773	41.696	42.000	0.474	0.638
sexFemale	71.955	26.552	42.000	2.710	0.010
age_yr	7.676	20.642	42.000	0.372	0.712
EDHigh ED	-11.541	8.247	51.000	-1.400	0.168
risk_status_momHigh Risk	-51.209	28.294	42.000	-1.810	0.077
dxa_total_body_perc_fat	-5.152	3.286	42.000	-1.568	0.124

Table 39: Stop-Signal Task SSD - PS + Body Fat Percentage + Risk Status

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	334.604	201.071	44.037	1.664	0.103
mom_edAA/Technical Degree	-70.575	50.735	44.000	-1.391	0.171
mom_edBachelor Degree	-7.922	28.625	44.000	-0.277	0.783
mom_edHigh School/GED	51.682	52.211	44.000	0.990	0.328
income>$100,000	19.535	46.810	44.000	0.417	0.678
income$51,000 - $100,000	14.745	42.572	44.000	0.346	0.731
sexFemale	63.639	26.572	44.000	2.395	0.021
age_yr	6.731	20.578	44.000	0.327	0.745
PSLarge PS	15.481	8.220	53.000	1.883	0.065
risk_status_momHigh Risk	-45.258	27.505	44.000	-1.645	0.107
dxa_total_body_perc_fat	-4.137	3.248	44.000	-1.274	0.209

4.2.4.3 Portion Size Trials

4.3 N-back

4.3.1 Ballanced Accuracy

Table 40: Nback Balanced Accuracy - Body Fat Percentage x Load + Risk Status x Load

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	92.300	7.783	75.081	11.859	0.000
mom_edAA/Technical Degree	-3.239	2.150	73.000	-1.506	0.136
mom_edBachelor Degree	0.458	1.339	73.000	0.342	0.733
mom_edHigh School/GED	0.360	2.517	73.000	0.143	0.887
income>$100,000	2.263	2.269	73.000	0.998	0.322
income$51,000 - $100,000	2.233	2.033	73.000	1.098	0.276
sexFemale	-0.715	1.278	73.000	-0.560	0.577
age_yr	0.276	0.968	73.000	0.285	0.777
block1-Back	0.506	1.595	160.000	0.317	0.752
block2-Back	-16.558	1.595	160.000	-10.380	0.000
risk_status_momHigh Risk	2.821	1.975	216.676	1.428	0.155
bfp_center	0.081	0.232	213.592	0.350	0.727
block1-Back:risk_status_momHigh Risk	-3.551	2.559	160.000	-1.388	0.167
block2-Back:risk_status_momHigh Risk	-6.065	2.559	160.000	-2.370	0.019
block1-Back:bfp_center	-0.034	0.297	160.000	-0.115	0.908
block2-Back:bfp_center	-0.397	0.297	160.000	-1.338	0.183

```
$emmeans
 risk_status_mom emmean    SE df lower.CL upper.CL
 Low Risk          89.6 0.968 73     87.7     91.6
 High Risk         89.2 1.025 73     87.2     91.3

Results are averaged over the levels of: mom_ed, income, sex, block
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast             estimate   SE df t.ratio p.value
 Low Risk - High Risk    0.384 1.31 73   0.293  0.7704

Results are averaged over the levels of: mom_ed, income, sex, block
Degrees-of-freedom method: kenward-roger

$emmeans
 block  risk_status_mom emmean   SE  df lower.CL upper.CL
 0-Back Low Risk          95.0 1.34 193     92.3     97.6
 1-Back Low Risk          95.5 1.34 193     92.9     98.1
 2-Back Low Risk          78.4 1.34 193     75.8     81.1
 0-Back High Risk         97.8 1.50 210     94.9    100.8
 1-Back High Risk         94.8 1.50 210     91.8     97.7
```

```
 2-Back High Risk         75.2 1.50 210     72.2     78.1

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast                                  estimate   SE  df t.ratio p.value
 (0-Back Low Risk) - (1-Back Low Risk)       -0.504 1.60 160  -0.316  0.7528
 (0-Back Low Risk) - (2-Back Low Risk)       16.573 1.60 160  10.372  <.0001
 (0-Back Low Risk) - (0-Back High Risk)      -2.821 1.98 217  -1.428  0.1547
 (0-Back Low Risk) - (1-Back High Risk)       0.226 1.92 210   0.118  0.9065
 (0-Back Low Risk) - (2-Back High Risk)      19.817 1.92 210  10.310  <.0001
 (1-Back Low Risk) - (2-Back Low Risk)       17.078 1.60 160  10.687  <.0001
 (1-Back Low Risk) - (0-Back High Risk)      -2.317 1.92 210  -1.205  0.2294
 (1-Back Low Risk) - (1-Back High Risk)       0.730 1.98 217   0.370  0.7120
 (1-Back Low Risk) - (2-Back High Risk)      20.321 1.92 210  10.572  <.0001
 (2-Back Low Risk) - (0-Back High Risk)     -19.395 1.92 210 -10.091  <.0001
 (2-Back Low Risk) - (1-Back High Risk)     -16.347 1.92 210  -8.505  <.0001
 (2-Back Low Risk) - (2-Back High Risk)       3.243 1.98 217   1.642  0.1021
 (0-Back High Risk) - (1-Back High Risk)      3.047 1.89 160   1.611  0.1092
 (0-Back High Risk) - (2-Back High Risk)     22.638 1.89 160  11.966  <.0001
 (1-Back High Risk) - (2-Back High Risk)     19.591 1.89 160  10.355  <.0001

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger

 bfp_center bfp_center.trend    SE df t.ratio p.value
     0.0381          -0.0628 0.156 73  -0.402  0.6887

Results are averaged over the levels of: mom_ed, income, sex, block, risk_status_mom
Degrees-of-freedom method: kenward-roger
```

4.3.2 d'

Table 41: Nback Balanced Accuracy - Body Fat Percentage x Load + Risk Status x Load

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	3.449	0.666	74.794	5.179	0.000
mom_edAA/Technical Degree	-0.220	0.184	73.000	-1.196	0.235
mom_edBachelor Degree	0.032	0.115	73.000	0.276	0.783
mom_edHigh School/GED	0.036	0.216	73.000	0.166	0.869
income>$100,000	0.126	0.194	73.000	0.646	0.520
income$51,000 - $100,000	0.146	0.174	73.000	0.837	0.406
sexFemale	0.019	0.109	73.000	0.176	0.861
age_yr	-0.002	0.083	73.000	-0.027	0.979
block1-Back	0.038	0.127	160.000	0.300	0.764
block2-Back	-1.220	0.127	160.000	-9.614	0.000
risk_status_momHigh Risk	0.236	0.163	207.070	1.450	0.149
bfp_center	-0.007	0.019	203.450	-0.378	0.706
block1-Back:risk_status_momHigh Risk	-0.336	0.204	160.000	-1.652	0.101
block2-Back:risk_status_momHigh Risk	-0.545	0.204	160.000	-2.677	0.008
block1-Back:bfp_center	0.005	0.024	160.000	0.227	0.821
block2-Back:bfp_center	0.002	0.024	160.000	0.065	0.948

```
$emmeans
 risk_status_mom emmean     SE df lower.CL upper.CL
 Low Risk          3.10 0.0829 73     2.93     3.26
 High Risk         3.04 0.0878 73     2.87     3.22

Results are averaged over the levels of: mom_ed, income, sex, block
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast             estimate    SE df t.ratio p.value
 Low Risk - High Risk    0.058 0.112 73   0.516  0.6074

Results are averaged over the levels of: mom_ed, income, sex, block
Degrees-of-freedom method: kenward-roger

$emmeans
 block  risk_status_mom emmean    SE  df lower.CL upper.CL
 0-Back Low Risk          3.49 0.111 181     3.27     3.71
 1-Back Low Risk          3.53 0.111 181     3.31     3.75
 2-Back Low Risk          2.27 0.111 181     2.06     2.49
 0-Back High Risk         3.73 0.123 199     3.49     3.97
 1-Back High Risk         3.43 0.123 199     3.19     3.67
 2-Back High Risk         1.96 0.123 199     1.72     2.21
```

```
Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger
Confidence level used: 0.95

$contrasts
 contrast                                  estimate    SE  df t.ratio p.value
 (0-Back Low Risk) - (1-Back Low Risk)      -0.0383 0.127 160  -0.301  0.7636
 (0-Back Low Risk) - (2-Back Low Risk)       1.2197 0.127 160   9.597  <.0001
 (0-Back Low Risk) - (0-Back High Risk)     -0.2357 0.163 207  -1.450  0.1485
 (0-Back Low Risk) - (1-Back High Risk)      0.0622 0.158 200   0.392  0.6952
 (0-Back Low Risk) - (2-Back High Risk)      1.5288 0.158 200   9.649  <.0001
 (1-Back Low Risk) - (2-Back Low Risk)       1.2580 0.127 160   9.899  <.0001
 (1-Back Low Risk) - (0-Back High Risk)     -0.1974 0.158 200  -1.246  0.2142
 (1-Back Low Risk) - (1-Back High Risk)      0.1005 0.163 207   0.618  0.5373
 (1-Back Low Risk) - (2-Back High Risk)      1.5671 0.158 200   9.890  <.0001
 (2-Back Low Risk) - (0-Back High Risk)     -1.4554 0.158 200  -9.185  <.0001
 (2-Back Low Risk) - (1-Back High Risk)     -1.1575 0.158 200  -7.305  <.0001
 (2-Back Low Risk) - (2-Back High Risk)      0.3091 0.163 207   1.902  0.0586
 (0-Back High Risk) - (1-Back High Risk)     0.2979 0.150 160   1.980  0.0494
 (0-Back High Risk) - (2-Back High Risk)     1.7645 0.150 160  11.727  <.0001
 (1-Back High Risk) - (2-Back High Risk)     1.4667 0.150 160   9.748  <.0001

Results are averaged over the levels of: mom_ed, income, sex
Degrees-of-freedom method: kenward-roger

 bfp_center bfp_center.trend     SE df t.ratio p.value
     0.0381         -0.00491 0.0134 73  -0.367  0.7145

Results are averaged over the levels of: mom_ed, income, sex, block, risk_status_mom
Degrees-of-freedom method: kenward-roger
```