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 = 41
Age, yr	7.8 [6.0 - 9.0]	7.8 [7.0 - 8.9]
Sex		
Male	30 (57%)	18 (44%)
Female	23 (43%)	23 (56%)
Ethnicity		
Not Hispanic/Lantinx	53 (100%)	41 (100%)
Race		
Asian	3 (5.7%)	0 (0%)
White/Caucasian	50 (94%)	41 (100%)
Income		
< $51,000	4 (7.7%)	8 (21%)
>$100,000	26 (50%)	8 (21%)
$51,000 - $100,000	22 (42%)	23 (59%)
Unknown	1	2
Mother's Education		
> Bachelor Degree	23 (44%)	6 (15%)
AA/Technical Degree	3 (5.8%)	8 (20%)
Bachelor Degree	23 (44%)	21 (51%)
High School/GED	3 (5.8%)	6 (15%)
Unknown	1	0
Father's Education		
> Bachelor Degree	29 (55%)	4 (11%)
AA/Technical Degree	3 (5.7%)	12 (33%)
Bachelor Degree	15 (28%)	14 (39%)
High School/GED	6 (11%)	5 (14%)
Other/NA	0 (0%)	1 (2.8%)
Unknown	0	5
BMI %tile	41.7 [3.9 - 86.8]	56.7 [9.4 - 97.3]
Total Body Fat %	27.0 [19.9 - 35.7]	30.5 [23.6 - 38.9]
Unknown	2	3
Total Fat Mass	6,816.8 [4,524.0 - 11,510.0]	8,149.9 [5,784.0 - 12,677.0]
Unknown	2	3
Visceral Fat Mass	159.6 [57.9 - 286.0]	163.6 [52.1 - 245.0]
Unknown	2	3
Lean Fat Mass	17,476.1 [13,488.2 - 25,165.4]	17,470.0 [12,619.2 - 23,592.7]
Unknown	2	3
IQ	116.1 [77.0 - 160.0]	110.4 [91.0 - 133.0]
Unknown	11	14

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

1.1 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)

1.1.1 Percent False Alarms

Table 3: Go-NoGo Percent False Alarms

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	57.918	20.811	2.783	0.007
sexFemale	-6.822	3.339	-2.043	0.044
age_yr	-2.928	2.649	-1.105	0.272
risk_status_momHigh Risk	6.511	3.370	1.932	0.057
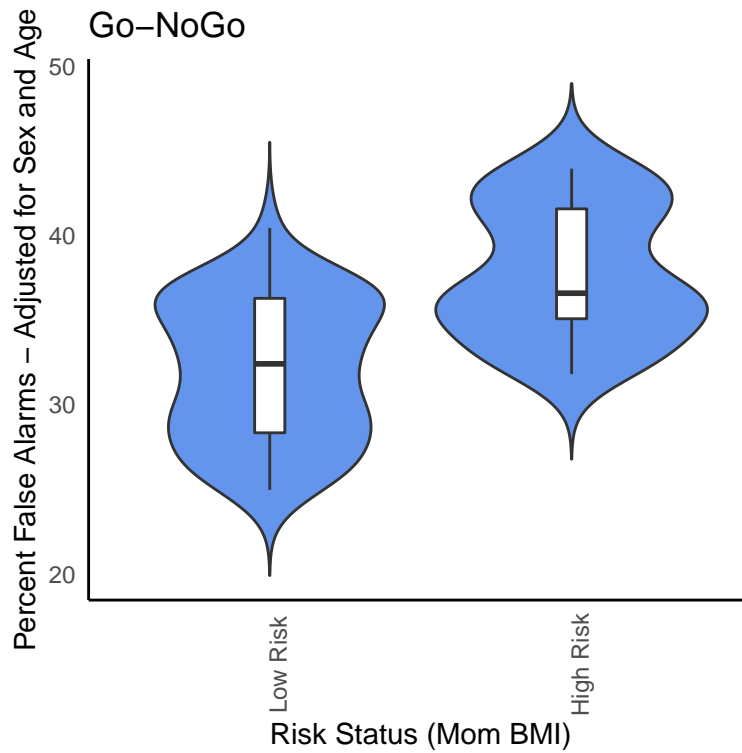
Table 4: Go-NoGo Percent False Alarms

	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

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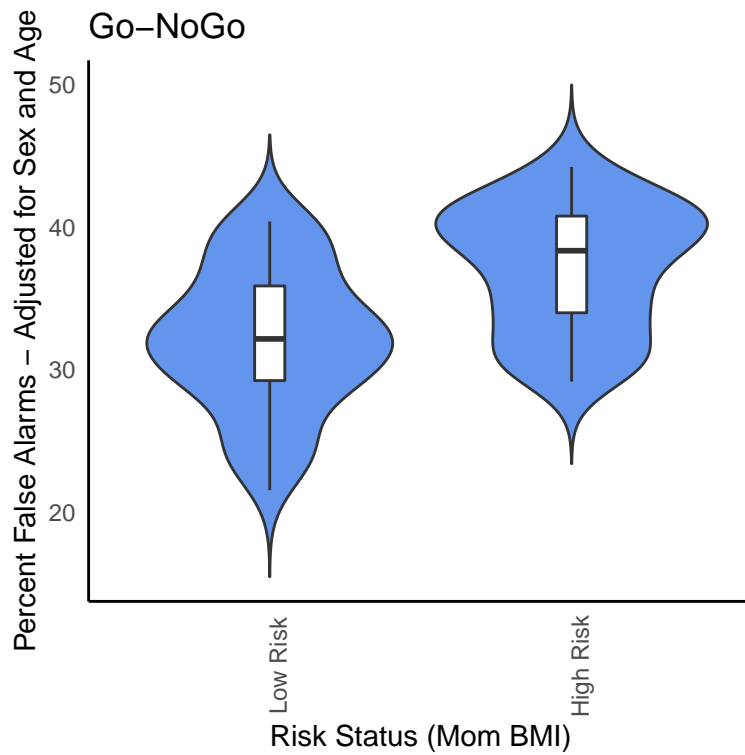
1.1.2 Percent Hits: Mom Risk Status

Table 5: Go-NoGo - Percent Hits

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	93.331	4.076	22.896	0.000
sexFemale	0.420	0.654	0.643	0.522
age_yr	0.433	0.519	0.834	0.406
risk_status_momHigh Risk	0.443	0.660	0.670	0.504

Table 6: 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

1.2 N-Back

Table 7: N-Back Performance Summary

Characteristic	0-Back		1-Back		2-Back	
	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)

1.2.1 Ballanced Accuracy: Mom Risk Status

Table 8: N-Back Ballanced Accuracy - Risk x Block

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	94.501	6.458	14.633	0.000
sexFemale	-0.420	0.999	-0.421	0.674
age__yr	0.245	0.816	0.300	0.764
risk_status_momHigh Risk	2.439	1.734	1.406	0.161
block1-Back	0.510	1.591	0.321	0.749
block2-Back	-15.751	1.591	-9.900	0.000
risk_status_momHigh Risk:block1-Back	-3.819	2.440	-1.565	0.119
risk_status_momHigh Risk:block2-Back	-7.606	2.440	-3.117	0.002
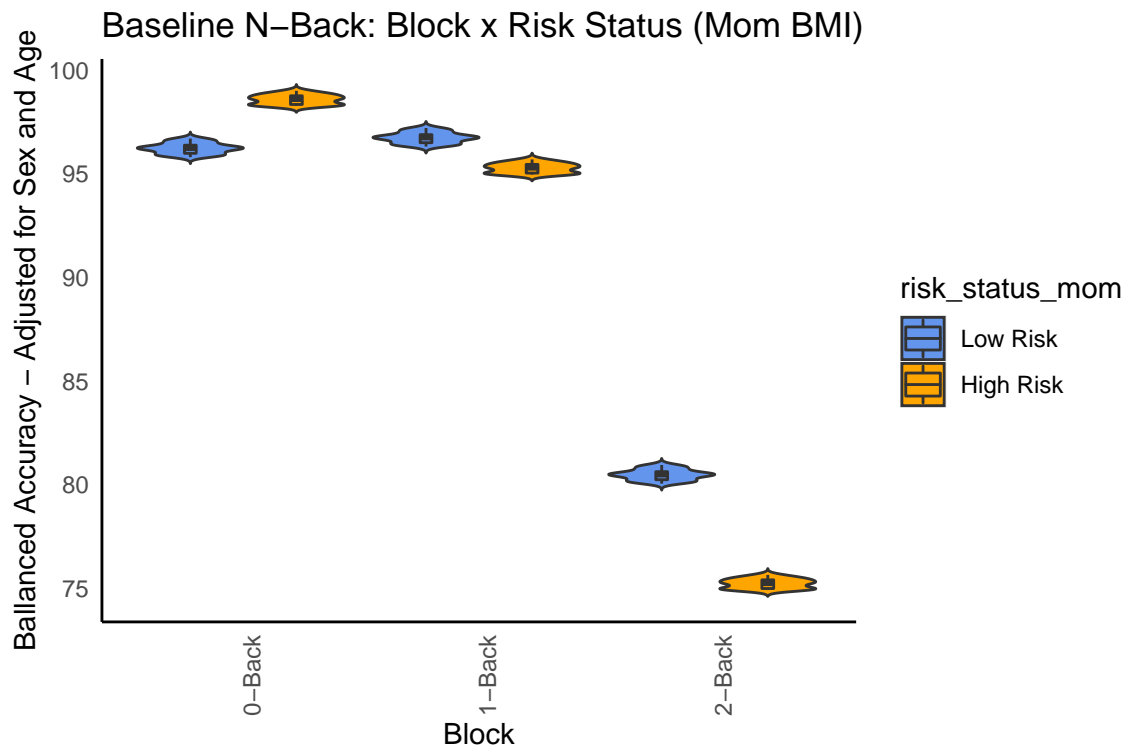
1.3 Stop-Signal Task

Table 9: Stop-Signal Task Performance Summary: Risk Status by Energy Density Condition

Characteristic	High ED		Low ED	
	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 10: Stop-Signal Task Performance Summary: Risk Status by Portion Size Condition

Characteristic	Large PS		Small PS	
	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)

1.3.1 Stop Signal Delay: Mom Risk Status

Table 11: Stop-Signal Task SSD - Risk Status

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	118.977	119.275	0.998	0.322
sexFemale	48.119	19.600	2.455	0.017
age_yr	21.615	15.216	1.421	0.160
risk_status_momHigh Risk	-50.379	20.179	-2.497	0.015
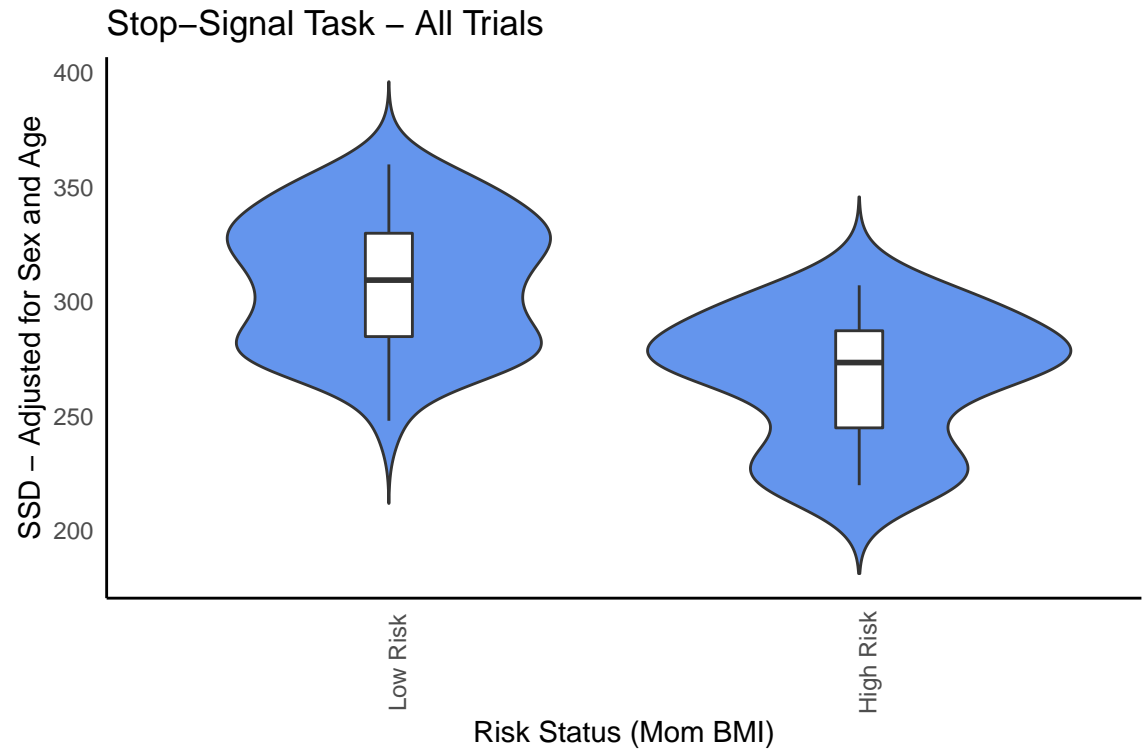
1.3.1.1 All Trials

Table 12: Stop-Signal Task SSD (integration) - Risk Status x ED

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	190.506	155.250	46.112	1.227	0.226
sexFemale	72.081	26.501	46.000	2.720	0.009
age_yr	17.502	19.453	46.000	0.900	0.373
orderhED_lED_hED_lED	-47.536	53.727	46.000	-0.885	0.381
orderhED_lED_lED_hED	-55.471	38.079	46.000	-1.457	0.152
orderlED_hED_hED_lED	-41.144	41.503	46.000	-0.991	0.327
orderlED_hED_lED_hED	-54.752	70.389	46.000	-0.778	0.441
orderlED_lED_hED_hED	-20.759	34.002	46.000	-0.611	0.545
EDHigh ED	-1.996	10.836	53.000	-0.184	0.855
risk_status_momHigh Risk	-59.161	25.408	56.193	-2.328	0.024
EDHigh ED:risk_status_momHigh Risk	-15.219	16.073	53.000	-0.947	0.348

1.3.1.2 Energy Density Trials

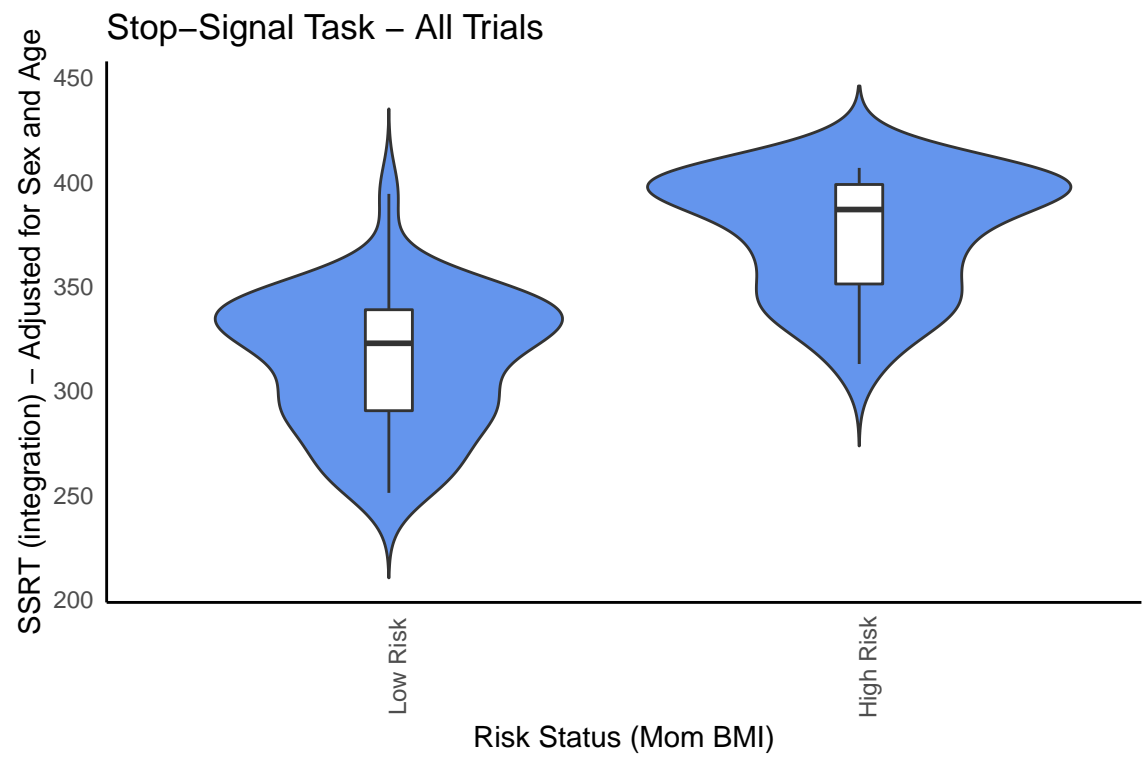Table 13: Stop-Signal Task SSD (integration) - Risk Status x PS

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	173.143	138.617	54.153	1.249	0.217
sexFemale	52.091	22.957	54.000	2.269	0.027
age_yr	14.239	17.614	54.000	0.808	0.422
PSLarge PS	17.945	10.440	56.000	1.719	0.091
risk_status_momHigh Risk	-45.928	24.510	66.561	-1.874	0.065
PSLarge PS:risk_status_momHigh Risk	-2.468	15.902	56.000	-0.155	0.877

1.3.1.3 Portion Size Trials

1.3.2 Stop Signal Reaction Time: Mom Risk Status

Table 14: Stop-Signal Task SSRT (integration) - Risk Status

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	677.616	140.825	4.812	0.000
sexFemale	14.742	23.141	0.637	0.526
age_yr	-47.452	17.965	-2.641	0.010
risk_status_momHigh Risk	54.646	23.825	2.294	0.025

Stop–Signal Task – All Trials

SSRT (integration) – Adjusted for Sex and Age

Risk Status (Mom BMI)

Low Risk

High Risk

1.3.2.1 All Trials

Table 15: Stop-Signal Task SSRT (integration) - Risk Status x ED

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	600.910	154.343	51.439	3.893	0.000
sexFemale	2.973	25.320	51.000	0.117	0.907
age_yr	-39.319	20.047	51.000	-1.961	0.055
EDHigh ED	-4.563	20.205	53.000	-0.226	0.822
risk_status_momHigh Risk	68.217	29.179	83.740	2.338	0.022
EDHigh ED:risk_status_momHigh Risk	10.114	29.970	53.000	0.337	0.737

1.3.2.2 Energy Density Trials

Table 16: Stop-Signal Task SSRT (integration) - Risk Status x PS

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	513.918	124.959	54.560	4.113	0.000
sexFemale	18.684	20.656	54.000	0.905	0.370
age_yr	-27.129	15.849	54.000	-1.712	0.093
PSLarge PS	-2.578	17.941	56.000	-0.144	0.886
risk_status_momHigh Risk	58.282	24.937	93.651	2.337	0.022
PSLarge PS:risk_status_momHigh Risk	-27.220	27.327	56.000	-0.996	0.324

1.3.2.3 Portion Size Trials