Portion Size Effect for Children at High and Low Familial Risk for Obesity (Food and Brain Study)

Contents

1 Demographics

Table 1: Demographics

Characteristic	Risk Groups		Overall
	Low Risk, N = 50	High Risk, N = 36	N = 86
Sex			
Male	29 (58%)	16 (44%)	45 (52%)
Female	21 (42%)	20 (56%)	41 (48%)
Age, yr	7.8 (0.7)	7.7 (0.5)	7.8 (0.6)
Ethnicity			
Not Hispanic/Lantinx	50 (100%)	36 (100%)	86 (100%)
Race			
0	47 (94%)	36 (100%)	83 (97%)
2	3 (6.0%)	0 (0%)	3 (3.5%)
Income			
< $51,000	4 (8.2%)	7 (21%)	11 (13%)
>$100,000	23 (47%)	7 (21%)	30 (36%)
$51,000 - $100,000	22 (45%)	20 (59%)	42 (51%)
Unknown	1	2	3
BMI %tile	41.2 (24.4)	56.1 (24.3)	47.4 (25.3)
Fat Mass, g	6,786.4 (1,445.9)	8,123.4 (1,773.0)	7,346.1 (1,714.6)
Body Fat, %	27.0 (3.8)	30.8 (4.4)	28.6 (4.4)
Fat Mass Index (fat, kg/height, m2)	4.1 (0.8)	4.9 (1.0)	4.5 (0.9)
Satiety Responsiveness	2.8 (0.6)	3.1 (0.6)	2.9 (0.6)
Mother's Education			
> Bachelor Degree	21 (43%)	5 (14%)	26 (31%)
AA/Technical Degree	3 (6.1%)	6 (17%)	9 (11%)
Bachelor Degree	22 (45%)	19 (53%)	41 (48%)
High School/GED	3 (6.1%)	6 (17%)	9 (11%)
Unknown	1	0	1
Father's Education			
> Bachelor Degree	27 (54%)	3 (9.4%)	30 (37%)
AA/Technical Degree	3 (6.0%)	11 (34%)	14 (17%)
Bachelor Degree	14 (28%)	12 (38%)	26 (32%)
High School/GED	6 (12%)	5 (16%)	11 (13%)
Other/NA	0 (0%)	1 (3.1%)	1 (1.2%)
Unknown	0	4	4

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

Age - t-test

```
    Welch Two Sample t-test

data:  age_yr by risk_status_mom
t = 0.50681, df = 82.343, p-value = 0.6136
alternative hypothesis: true difference in means between group Low Risk and group High Risk is not equal
95 percent confidence interval:
 -0.1939215  0.3265215
sample estimates:
 mean in group Low Risk mean in group High Risk
                 7.8138                  7.7475
```

BMI Percentile - t-test

```
    Welch Two Sample t-test

data:  bmi_percentile by risk_status_mom
t = -2.8105, df = 75.711, p-value = 0.006292
alternative hypothesis: true difference in means between group Low Risk and group High Risk is not equal
95 percent confidence interval:
 -25.551839  -4.356339
sample estimates:
 mean in group Low Risk mean in group High Risk
              41.15980               56.11389

 Low Risk High Risk
 24.38858  24.30838
```

FMI - t-test

```
    Welch Two Sample t-test

data:  fmi by risk_status_mom
t = -4.1967, df = 65.514, p-value = 8.326e-05
alternative hypothesis: true difference in means between group Low Risk and group High Risk is not equal
95 percent confidence interval:
 -1.2051372 -0.4280523
sample estimates:
 mean in group Low Risk mean in group High Risk
              4.131468               4.948062

 Low Risk High Risk
0.7800754 0.9616947
```

1.1 CEBQ SR - t-test

```
    Welch Two Sample t-test

data:  cebq_sr by risk_status_mom
t = -1.7358, df = 76.432, p-value = 0.08663
alternative hypothesis: true difference in means between group Low Risk and group High Risk is not equal
95 percent confidence interval:
 -0.51726301  0.03548524
sample estimates:
 mean in group Low Risk mean in group High Risk
              2.848000               3.088889
```

```
 Low Risk High Risk
0.6421393 0.6296383
```

Sex - χ^2

```
    Pearson's Chi-squared test with Yates' continuity correction

data:  r01_intake$sex and r01_intake$risk_status_mom
X-squared = 1.0462, df = 1, p-value = 0.3064
```

Income - χ^2

```
    Pearson's Chi-squared test

data:  r01_intake$income and r01_intake$risk_status_mom
X-squared = 6.9633, df = 2, p-value = 0.03076
```

Mom Education - Fisher test

```
    Fisher's Exact Test for Count Data

data:  r01_intake$mom_ed and r01_intake$risk_status_mom
p-value = 0.01375
alternative hypothesis: two.sided
```

2 CEBQ - SR

```
Reliability analysis
Call: alpha(x = r01_intake[c("cebq3_rev", "cebq17", "cebq21", "cebq26",
    "cebq30")])

  raw_alpha std.alpha G6(smc) average_r S/N   ase mean   sd median_r
       0.8       0.8     0.8      0.45 4.1 0.035  2.9 0.64     0.39

 lower alpha upper     95% confidence boundaries
0.73 0.8 0.87

 Reliability if an item is dropped:
          raw_alpha std.alpha G6(smc) average_r S/N alpha se  var.r med.r
cebq3_rev      0.79      0.80    0.79      0.50 4.0    0.038 0.0284  0.44
cebq17         0.72      0.73    0.68      0.40 2.7    0.049 0.0077  0.37
cebq21         0.72      0.72    0.66      0.39 2.6    0.049 0.0018  0.38
cebq26         0.76      0.76    0.76      0.45 3.3    0.044 0.0317  0.39
cebq30         0.79      0.80    0.79      0.49 3.9    0.038 0.0312  0.44

 Item statistics
           n raw.r std.r r.cor r.drop mean   sd
cebq3_rev 86  0.67  0.66  0.52   0.47  2.9 0.88
cebq17    86  0.81  0.82  0.82   0.68  3.2 0.87
cebq21    86  0.82  0.83  0.84   0.71  3.1 0.76
cebq26    86  0.75  0.75  0.65   0.58  2.9 0.90
cebq30    86  0.69  0.67  0.52   0.48  2.7 0.92

Non missing response frequency for each item
              1    2    3    4    5 miss
cebq3_rev 0.06 0.27 0.45 0.20 0.02    0
cebq17    0.01 0.22 0.40 0.33 0.05    0
cebq21    0.00 0.21 0.49 0.28 0.02    0
cebq26    0.07 0.23 0.47 0.21 0.02    0
cebq30    0.08 0.34 0.40 0.16 0.02    0
```

3 Meal Liking

Table 2: Meal Liking

Group	Characteristic	PS-1, N = 86	PS-2, N = 86	PS-3, N = 86	PS-4, N = 86
Overall	avg_vas	3.8 (0.6)	3.8 (0.6)	3.8 (0.6)	3.9 (0.6)
	mac_vas	3.9 (0.9)	3.8 (1.0)	3.8 (1.1)	3.8 (1.0)
	chnug_vas	4.2 (0.9)	4.3 (0.8)	4.2 (0.9)	4.2 (0.9)
	broc_vas	3.1 (1.4)	3.0 (1.3)	3.0 (1.3)	3.2 (1.4)
	grape_vas	4.2 (0.9)	4.3 (0.9)	4.2 (1.0)	4.2 (1.0)
High-Risk	avg_vas	3.9 (0.6)	3.8 (0.7)	3.8 (0.7)	3.9 (0.6)
	mac_vas	4.2 (0.8)	3.9 (1.1)	3.9 (1.1)	4.0 (1.0)
	chnug_vas	4.3 (1.0)	4.2 (1.0)	4.1 (1.2)	4.3 (0.9)
	broc_vas	2.9 (1.7)	2.8 (1.5)	2.8 (1.5)	2.9 (1.6)
	grape_vas	4.2 (0.8)	4.4 (0.9)	4.4 (0.9)	4.4 (0.8)
Low-Risk	avg_vas	3.8 (0.6)	3.8 (0.6)	3.8 (0.6)	3.8 (0.7)
	mac_vas	3.6 (1.0)	3.7 (1.0)	3.8 (1.1)	3.7 (1.0)
	chnug_vas	4.1 (0.9)	4.3 (0.7)	4.2 (0.7)	4.2 (0.9)
	broc_vas	3.2 (1.2)	3.1 (1.1)	3.2 (1.2)	3.3 (1.3)
	grape_vas	4.2 (0.9)	4.2 (1.0)	4.1 (1.1)	4.1 (1.0)

[1] Mean (SD)

3.1 Overall

Table 3: Regression Table: Portion Size for Liking

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	3.493	0.456	82.640	7.666	0.000
preFF	-0.002	0.001	307.991	-2.331	0.020
fmi	0.026	0.078	80.564	0.333	0.740
sexFemale	0.107	0.134	80.603	0.801	0.426
cebq_sr	0.061	0.101	80.499	0.604	0.547
meal_order	0.018	0.014	254.729	1.276	0.203
risk_status_momHigh Risk	0.010	0.145	80.904	0.066	0.948
g_served	0.000	0.000	254.760	0.521	0.603

3.2 Chicken Nuggets - Liking

Table 4: Regression Table: Portion Size for Liking of Chicken Nuggets

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	3.913	0.612	83.604	6.389	0.000
preFF	-0.002	0.001	321.752	-1.542	0.124
fmi	-0.037	0.105	80.752	-0.356	0.723
sexFemale	-0.142	0.179	80.803	-0.794	0.430
cebq_sr	0.152	0.136	80.670	1.118	0.267
meal_order	0.037	0.023	254.979	1.638	0.103
risk_status_momHigh Risk	0.105	0.195	81.190	0.537	0.593
g_served	0.000	0.000	255.018	0.420	0.674

3.3 Mac and Cheese - Liking

Table 5: Regression Table: Portion Size for Liking of Mac and Cheese

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	3.131	0.704	84.111	4.447	0.000
preFF	-0.002	0.001	325.306	-1.395	0.164
fmi	0.168	0.120	80.999	1.397	0.166
sexFemale	0.140	0.206	81.054	0.681	0.498
cebq_sr	-0.032	0.156	80.911	-0.203	0.840
meal_order	0.006	0.027	255.246	0.218	0.828
risk_status_momHigh Risk	0.117	0.224	81.466	0.521	0.604
g_served	0.000	0.000	255.288	-0.323	0.747

3.4 Grapes - Liking

Table 6: Regression Table: Portion Size for Liking of Grapes

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	3.293	0.640	83.974	5.145	0.000
preFF	-0.001	0.001	326.883	-1.062	0.289
fmi	0.017	0.109	80.739	0.158	0.875
sexFemale	0.170	0.187	80.795	0.911	0.365
cebq_sr	0.265	0.142	80.648	1.873	0.065
meal_order	0.009	0.026	254.996	0.336	0.737
risk_status_momHigh Risk	0.106	0.203	81.219	0.521	0.603
g_served	0.000	0.000	255.039	-0.056	0.955

3.5 Broccoli - Liking

Table 7: Regression Table: Portion Size for Liking of Broccoli

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	3.647	1.020	81.600	3.575	0.001
preFF	-0.002	0.001	293.472	-1.511	0.132
fmi	-0.044	0.175	80.163	-0.254	0.800
sexFemale	0.258	0.300	80.191	0.863	0.391
cebq_sr	-0.140	0.227	80.116	-0.618	0.538
meal_order	0.022	0.027	254.273	0.809	0.419
risk_status_momHigh Risk	-0.287	0.326	80.411	-0.879	0.382
g_served	0.000	0.000	254.296	1.147	0.252

4 Meal Ranking

4.1 Rank - Portion Size 1

```
    Friedman rank sum test

data:  rank and food and sub
Friedman chi-squared = 35.988, df = 3, p-value = 7.531e-08
```

```
           mac_rank chnug_rank grape_rank
chnug_rank 0.0673   -          -
grape_rank 0.8694   0.3303     -
broc_rank  0.0041   3.3e-08    0.0002
```

```
    Wilcoxon rank sum test with continuity correction

data:  mac_rank by risk_status_mom
W = 383, p-value = 0.1812
alternative hypothesis: true location shift is not equal to 0
```

```
    Wilcoxon rank sum test with continuity correction

data:  chnug_rank by risk_status_mom
W = 319.5, p-value = 0.9345
alternative hypothesis: true location shift is not equal to 0
```

```
    Wilcoxon rank sum test with continuity correction

data:  grape_rank by risk_status_mom
W = 313.5, p-value = 0.984
alternative hypothesis: true location shift is not equal to 0
```

```
    Wilcoxon rank sum test with continuity correction

data:  broc_rank by risk_status_mom
W = 241.5, p-value = 0.117
alternative hypothesis: true location shift is not equal to 0
```

4.2 Rank - Portion Size 2

```
    Friedman rank sum test
```

```
data:  rank and food and sub
Friedman chi-squared = 25.753, df = 3, p-value = 1.074e-05

           mac_rank chnug_rank grape_rank
chnug_rank 0.19013  -          -
grape_rank 0.11668  0.99571    -
broc_rank  0.11668  0.00014    5.1e-05
```

```
    Wilcoxon rank sum test with continuity correction

data:  mac_rank by risk_status_mom
W = 345, p-value = 0.5591
alternative hypothesis: true location shift is not equal to 0
```

```
    Wilcoxon rank sum test with continuity correction

data:  chnug_rank by risk_status_mom
W = 280.5, p-value = 0.4964
alternative hypothesis: true location shift is not equal to 0
```

```
    Wilcoxon rank sum test with continuity correction

data:  grape_rank by risk_status_mom
W = 354.5, p-value = 0.4322
alternative hypothesis: true location shift is not equal to 0
```

```
    Wilcoxon rank sum test with continuity correction

data:  broc_rank by risk_status_mom
W = 257, p-value = 0.2337
alternative hypothesis: true location shift is not equal to 0
```

4.3 Rank - Portion Size 3

```
    Friedman rank sum test

data:  rank and food and sub
Friedman chi-squared = 33.941, df = 3, p-value = 2.039e-07

           mac_rank chnug_rank grape_rank
chnug_rank 0.33034  -          -
```

```
grape_rank 0.90086  0.75109    -
broc_rank  0.00098  3.1e-07    5.1e-05
```

```
    Wilcoxon rank sum test with continuity correction

data:  mac_rank by risk_status_mom
W = 310.5, p-value = 0.9367
alternative hypothesis: true location shift is not equal to 0
```

```
    Wilcoxon rank sum test with continuity correction

data:  chnug_rank by risk_status_mom
W = 267.5, p-value = 0.3408
alternative hypothesis: true location shift is not equal to 0
```

```
    Wilcoxon rank sum test with continuity correction

data:  grape_rank by risk_status_mom
W = 361.5, p-value = 0.357
alternative hypothesis: true location shift is not equal to 0
```

```
    Wilcoxon rank sum test with continuity correction

data:  broc_rank by risk_status_mom
W = 328, p-value = 0.7864
alternative hypothesis: true location shift is not equal to 0
```

4.4 Rank - Portion Size 4

```
    Friedman rank sum test

data:  rank and food and sub
Friedman chi-squared = 29.776, df = 3, p-value = 1.538e-06
```

```
           mac_rank chnug_rank grape_rank
chnug_rank 0.09779  -          -
grape_rank 0.70559  0.60953    -
broc_rank  0.01869  1.1e-06    0.00039
```

```
    Wilcoxon rank sum test with continuity correction

data:  mac_rank by risk_status_mom
W = 390.5, p-value = 0.1629
alternative hypothesis: true location shift is not equal to 0


    Wilcoxon rank sum test with continuity correction

data:  chnug_rank by risk_status_mom
W = 278.5, p-value = 0.4183
alternative hypothesis: true location shift is not equal to 0


    Wilcoxon rank sum test with continuity correction

data:  grape_rank by risk_status_mom
W = 310, p-value = 0.8663
alternative hypothesis: true location shift is not equal to 0


    Wilcoxon rank sum test with continuity correction

data:  broc_rank by risk_status_mom
W = 288, p-value = 0.524
alternative hypothesis: true location shift is not equal to 0
```

Table 8: Meal Ranking

Group	Characteristic	PS-1, N = 86	PS-2, N = 86	PS-3, N = 86	PS-4, N = 86
Overall	mac_rank				
	1	11 (22%)	11 (22%)	15 (29%)	13 (25%)
	2	16 (31%)	11 (22%)	10 (20%)	11 (22%)
	3	12 (24%)	15 (29%)	16 (31%)	14 (27%)
	4	12 (24%)	14 (27%)	10 (20%)	13 (25%)
	chnug_rank				
	1	24 (47%)	19 (37%)	20 (39%)	23 (45%)
	2	15 (29%)	14 (27%)	18 (35%)	13 (25%)
	3	7 (14%)	11 (22%)	7 (14%)	10 (20%)
	4	5 (9.8%)	7 (14%)	6 (12%)	5 (9.8%)
	grape_rank				
	1	13 (25%)	17 (33%)	13 (25%)	14 (27%)
	2	15 (29%)	19 (37%)	18 (35%)	16 (31%)
	3	18 (35%)	10 (20%)	15 (29%)	15 (29%)
	4	5 (9.8%)	5 (9.8%)	5 (9.8%)	6 (12%)
	broc_rank				
	1	3 (5.9%)	4 (7.8%)	3 (5.9%)	1 (2.0%)
	2	5 (9.8%)	7 (14%)	5 (9.8%)	11 (22%)
	3	14 (27%)	15 (29%)	13 (25%)	12 (24%)
	4	29 (57%)	25 (49%)	30 (59%)	27 (53%)
High-Risk	mac_rank				
	1	5 (24%)	5 (24%)	6 (29%)	7 (32%)
	2	8 (38%)	4 (19%)	4 (19%)	6 (27%)
	3	6 (29%)	8 (38%)	7 (33%)	5 (23%)
	4	2 (9.5%)	4 (19%)	4 (19%)	4 (18%)
	chnug_rank				
	1	11 (52%)	7 (33%)	7 (33%)	9 (41%)
	2	4 (19%)	5 (24%)	7 (33%)	5 (23%)
	3	3 (14%)	6 (29%)	4 (19%)	5 (23%)
	4	3 (14%)	3 (14%)	3 (14%)	3 (14%)
	grape_rank				
	1	5 (24%)	7 (33%)	7 (33%)	6 (27%)
	2	6 (29%)	10 (48%)	7 (33%)	6 (27%)
	3	9 (43%)	3 (14%)	5 (24%)	8 (36%)
	4	1 (4.8%)	1 (4.8%)	2 (9.5%)	2 (9.1%)
	broc_rank				
	1	0 (0%)	2 (9.5%)	1 (4.8%)	0 (0%)
	2	3 (14%)	2 (9.5%)	3 (14%)	5 (23%)
	3	3 (14%)	4 (19%)	5 (24%)	4 (18%)
	4	15 (71%)	13 (62%)	12 (57%)	13 (59%)
Low-Risk	mac_rank				
	1	6 (20%)	6 (20%)	9 (30%)	6 (21%)
	2	8 (27%)	7 (23%)	6 (20%)	5 (17%)
	3	6 (20%)	7 (23%)	9 (30%)	9 (31%)
	4	10 (33%)	10 (33%)	6 (20%)	9 (31%)
	chnug_rank				
	1	13 (43%)	12 (40%)	13 (43%)	14 (48%)
	2	11 (37%)	9 (30%)	11 (37%)	8 (28%)
	3	4 (13%)	5 (17%)	3 (10%)	5 (17%)
	4	2 (6.7%)	4 (13%)	3 (10%)	2 (6.9%)
	grape_rank				
	1	8 (27%)	10 (33%)	6 (20%)	8 (28%)
	2	9 (30%)	9 (30%)	11 (37%)	10 (34%)
	3	9 (30%)	7 (23%)	10 (33%)	7 (24%)
	4	4 (13%)	4 (13%)	3 (10%)	4 (14%)
	broc_rank				
	1	3 (10%)	2 (6.7%)	2 (6.7%)	1 (3.4%)
	2	2 (6.7%)	5 (17%)	2 (6.7%)	6 (21%)
	3	11 (37%)	11 (37%)	8 (27%)	8 (28%)
	4	14 (47%)	12 (40%)	18 (60%)	14 (48%)

[1] n (%)

4.5 Frequency of Intake

Table 9: Child Report - Typical Portion Selection and Intake

	Risk Groups		Overall
Characteristic	Low Risk, N = 50	High Risk, N = 36	N = 86
Broccoli, eat			
N	31 (62%)	21 (66%)	52 (63%)
Y	19 (38%)	11 (34%)	30 (37%)
Broccoli, amount	58.3 (31.5)	60.0 (38.7)	58.9 (33.7)
Broccoli, like	66.6 (37.0)	59.9 (43.5)	64.1 (38.9)
Chicken Nugget, eat			
N	4 (8.0%)	1 (3.1%)	5 (6.1%)
Y	46 (92%)	31 (97%)	77 (94%)
Chicken Nugget, amount	39.9 (22.9)	47.3 (25.0)	42.9 (23.9)
Chicken Nugget, like	63.4 (28.2)	77.5 (28.7)	69.1 (29.1)
Grapes, eat			
N	6 (12%)	3 (9.4%)	9 (11%)
Y	44 (88%)	29 (91%)	73 (89%)
Grapes, amount	47.0 (21.0)	54.4 (29.7)	49.9 (24.9)
Grapes, like	72.4 (25.8)	68.7 (26.2)	71.0 (25.8)
Mac + Cheese, eat			
N	3 (6.0%)	3 (9.4%)	6 (7.3%)
Y	47 (94%)	29 (91%)	76 (93%)
Mac + Cheese, amount	49.7 (22.2)	64.0 (25.2)	55.1 (24.3)
Mac + Cheese, like	72.1 (24.2)	78.8 (23.0)	74.7 (23.8)

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

Broccoli - χ^2

```
    Pearson's Chi-squared test with Yates' continuity correction

data:  xtabs(~pss_broccoli_eat + risk_status_mom, data = r01_intake)
X-squared = 0.0094944, df = 1, p-value = 0.9224
```

Grapes - Fisher

```
    Fisher's Exact Test for Count Data

data:  xtabs(~pss_grapes_eat + risk_status_mom, data = r01_intake)
p-value = 1
alternative hypothesis: true odds ratio is not equal to 1
95 percent confidence interval:
 0.2557472 8.7593598
sample estimates:
odds ratio
  1.313864
```

Mac and Cheese - Fisher

```
    Fisher's Exact Test for Count Data

data:  xtabs(~pss_mac_cheese_eat + risk_status_mom, data = r01_intake)
p-value = 0.6738
alternative hypothesis: true odds ratio is not equal to 1
95 percent confidence interval:
 0.07782524 4.95038679
sample estimates:
odds ratio
 0.6208164
```

Chicken Nuggets - Fisher

```
    Fisher's Exact Test for Count Data

data:  xtabs(~pss_chkn_nug_eat + risk_status_mom, data = r01_intake)
p-value = 0.6437
alternative hypothesis: true odds ratio is not equal to 1
95 percent confidence interval:
   0.2483595 136.8733876
sample estimates:
odds ratio
  2.667579
```

Table 10: Parent Report - Typical Portion Selection and Intake

	Risk Groups		Overall
Characteristic	Low Risk, N = 50	High Risk, N = 36	N = 86
Broccoli, eat			
N	14 (28%)	16 (44%)	30 (35%)
Y	36 (72%)	20 (56%)	56 (65%)
Broccoli, freq			
Never - 1/month	6 (17%)	3 (15%)	9 (16%)
2-3/month	9 (25%)	6 (30%)	15 (27%)
1-2/week	16 (44%)	9 (45%)	25 (45%)
3-4/week	5 (14%)	2 (10%)	7 (12%)
Broccoli, amount	42.1 (17.1)	49.4 (23.1)	44.7 (19.6)
Broccoli, like	58.3 (26.5)	59.4 (32.7)	58.7 (28.6)
Broccoli, portion	61.9 (28.7)	50.8 (36.6)	57.9 (31.9)
Broccoli, health	87.0 (12.0)	83.6 (12.3)	85.8 (12.1)
Chicken Nugget, eat			
N	5 (10%)	1 (2.8%)	6 (7.0%)
Y	45 (90%)	35 (97%)	80 (93%)
Chicken Nugget, freq			
Never - 1/month	15 (33%)	8 (23%)	23 (29%)
2-3/month	19 (42%)	11 (31%)	30 (38%)
1-2/week	8 (18%)	13 (37%)	21 (26%)
3-4/week	3 (6.7%)	3 (8.6%)	6 (7.5%)
Chicken Nugget, amount	28.3 (12.7)	32.0 (11.1)	29.9 (12.1)
Chicken Nugget, like	76.2 (23.2)	81.3 (16.1)	78.4 (20.5)
Chicken Nugget, portion	67.4 (28.0)	63.8 (28.4)	65.8 (28.1)
Chicken Nugget, health	44.4 (18.5)	31.9 (19.8)	38.9 (19.9)
Grapes, eat			
N	6 (12%)	1 (2.8%)	7 (8.1%)
Y	44 (88%)	35 (97%)	79 (92%)
Grapes, freq			
Never - 1/month	8 (18%)	3 (8.6%)	11 (14%)
2-3/month	14 (32%)	15 (43%)	29 (37%)
1-2/week	16 (36%)	15 (43%)	31 (39%)
3-4/week	4 (9.1%)	1 (2.9%)	5 (6.3%)
5-6/week	2 (4.5%)	1 (2.9%)	3 (3.8%)
Grapes, amount	42.1 (16.2)	43.9 (16.8)	42.9 (16.4)
Grapes, like	73.2 (22.8)	79.6 (15.2)	76.0 (20.0)
Grapes, poriton	50.1 (30.0)	47.9 (35.5)	49.1 (32.3)
Grapes, health	83.1 (18.8)	86.3 (14.3)	84.5 (16.9)
Mac + Cheese, eat			
N	8 (16%)	2 (5.6%)	10 (12%)
Y	42 (84%)	34 (94%)	76 (88%)
Mac + Cheese, freq			
Never - 1/month	6 (14%)	5 (15%)	11 (14%)
2-3/month	23 (55%)	18 (53%)	41 (54%)
1-2/week	12 (29%)	9 (26%)	21 (28%)
3-4/week	1 (2.4%)	2 (5.9%)	3 (3.9%)
1/day	0 (0%)	0 (0%)	0 (0%)
Mac + Cheese, amount	35.5 (10.3)	34.3 (14.0)	35.0 (12.0)
Mac + Cheese, like	76.9 (19.2)	76.4 (25.8)	76.7 (22.2)
Mac + Cheese, poriton	65.2 (26.5)	65.1 (33.0)	65.1 (29.4)
Mac + Cheese, nutrition	36.9 (18.1)	28.0 (22.9)	32.9 (20.7)

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

Broccoli - χ^2

```
    Pearson's Chi-squared test with Yates' continuity correction

data:  xtabs(~p_pss_broccoli_eat + risk_status_mom, data = r01_intake)
X-squared = 1.8204, df = 1, p-value = 0.1773
```

```
    Fisher's Exact Test for Count Data

data:  xtabs(~p_pss_broccoli_freq + risk_status_mom, data = r01_intake)
p-value = 1
alternative hypothesis: two.sided
```

Grapes - Fisher

```
    Fisher's Exact Test for Count Data

data:  xtabs(~p_pss_grapes_eat + risk_status_mom, data = r01_intake)
p-value = 0.2307
alternative hypothesis: true odds ratio is not equal to 1
95 percent confidence interval:
   0.5321588 225.4437121
sample estimates:
odds ratio
  4.703046
```

```
    Fisher's Exact Test for Count Data

data:  xtabs(~p_pss_grapes_freq + risk_status_mom, data = r01_intake)
p-value = 0.5283
alternative hypothesis: two.sided
```

Mac and Cheese - Fisher

```
    Fisher's Exact Test for Count Data

data:  xtabs(~p_pss_mac_cheese_eat + risk_status_mom, data = r01_intake)
p-value = 0.182
alternative hypothesis: true odds ratio is not equal to 1
95 percent confidence interval:
  0.5841448 32.8789599
sample estimates:
odds ratio
  3.199433
```

```
    Fisher's Exact Test for Count Data

data:  xtabs(~p_pss_mac_cheese_freq + risk_status_mom, data = r01_intake)
p-value = 0.9375
alternative hypothesis: two.sided
```

Chicken Nuggets - Fisher

```
    Fisher's Exact Test for Count Data

data:  xtabs(~p_pss_chkn_nug_eat + risk_status_mom, data = r01_intake)
p-value = 0.3937
alternative hypothesis: true odds ratio is not equal to 1
95 percent confidence interval:
   0.4028961 188.9209316
sample estimates:
odds ratio
  3.837976
```

```
    Fisher's Exact Test for Count Data

data:  xtabs(~p_pss_chkn_nug_freq + risk_status_mom, data = r01_intake)
p-value = 0.2423
alternative hypothesis: two.sided
```

5 Portion Size Effect

Note - Portion Size was coded in ps_prop as the proportion increase in amount served: Portion Size 1 = 0, Portion Size 2 = 0.33, Portion Size 3 = 0.66, and Portion Size 4 = 0.99. This means that a 1 unit increase is equal to a 100% increase in amount served – the difference between Portion Size 1 and Portion Size 4.

5.1 Total Intake

Table 11: Intake by Portion Size

	Risk Groups		Overall
Characteristic	Low Risk, N = 50	High Risk, N = 36	N = 86
ps1_total_g	406.6 (170.2)	408.9 (165.6)	407.5 (167.3)
ps1_total_kcal	469.7 (201.2)	493.7 (197.2)	479.8 (198.7)
ps1_avg_vas	3.8 (0.6)	3.9 (0.6)	3.8 (0.6)
ps2_total_g	466.7 (174.3)	393.4 (160.9)	436.0 (171.8)
ps2_total_kcal	535.6 (208.9)	485.4 (217.3)	514.6 (212.7)
ps2_avg_vas	3.8 (0.6)	3.8 (0.7)	3.8 (0.6)
ps3_total_g	484.8 (191.5)	432.7 (189.3)	463.0 (191.2)
ps3_total_kcal	581.9 (239.1)	530.2 (287.2)	560.3 (260.0)
ps3_avg_vas	3.8 (0.6)	3.8 (0.7)	3.8 (0.6)
ps4_total_g	496.4 (192.8)	425.3 (168.4)	466.6 (185.4)
ps4_total_kcal	616.7 (249.1)	568.9 (253.5)	596.7 (250.6)
ps4_avg_vas	3.8 (0.7)	3.9 (0.6)	3.9 (0.6)

[1] Mean (SD)

5.2 Intake by Food

Table 12: High Risk: Intake by Portion Size

Characteristic	PS-1, N = 36	PS-2, N = 36	PS-3, N = 36	PS-4, N = 36
chnug_grams	64.8 (45.8)	64.3 (54.0)	77.1 (62.2)	85.6 (65.3)
chnug_kcal	162.1 (114.6)	160.7 (134.9)	192.7 (155.6)	214.1 (163.2)
mac_grams	133.0 (106.3)	132.8 (112.4)	136.1 (132.4)	142.5 (125.3)
mac_kcal	226.1 (180.8)	225.7 (191.1)	231.4 (225.1)	242.2 (213.1)
grape_grams	84.1 (65.6)	93.4 (76.2)	96.3 (88.7)	104.5 (91.4)
grape_kcal	58.4 (45.6)	64.9 (53.0)	66.9 (61.7)	72.6 (63.5)
broc_grams	32.7 (53.7)	23.1 (29.3)	24.6 (38.1)	23.9 (37.6)
broc_kcal	32.8 (53.9)	23.1 (29.4)	24.7 (38.2)	24.0 (37.7)
mac_vas	4.2 (0.8)	3.9 (1.1)	3.9 (1.1)	4.0 (1.0)
chnug_vas	4.3 (1.0)	4.2 (1.0)	4.1 (1.2)	4.3 (0.9)
broc_vas	2.9 (1.7)	2.8 (1.5)	2.8 (1.5)	2.9 (1.6)
grape_vas	4.2 (0.8)	4.4 (0.9)	4.4 (0.9)	4.4 (0.8)

[1] Mean (SD)

Table 13: Low Risk: Intake by Portion Size

Characteristic	PS-1, N = 50	PS-2, N = 50	PS-3, N = 50	PS-4, N = 50
chnug_grams	68.1 (42.0)	80.3 (49.0)	91.4 (59.9)	104.0 (67.9)
chnug_kcal	170.3 (104.9)	200.8 (122.6)	228.5 (149.8)	260.0 (169.7)
mac_grams	115.2 (91.8)	129.7 (103.8)	139.8 (116.9)	133.3 (108.7)
mac_kcal	195.8 (156.1)	220.5 (176.5)	237.7 (198.7)	226.6 (184.7)
grape_grams	95.9 (82.5)	105.5 (87.4)	105.8 (93.5)	117.9 (105.2)
grape_kcal	66.7 (57.3)	73.3 (60.7)	73.5 (65.0)	81.9 (73.1)
broc_grams	27.2 (41.3)	29.9 (55.2)	30.0 (55.4)	36.2 (66.6)
broc_kcal	27.3 (41.4)	30.0 (55.4)	30.1 (55.6)	36.3 (66.8)
mac_vas	3.6 (1.0)	3.7 (1.0)	3.8 (1.1)	3.7 (1.0)
chnug_vas	4.1 (0.9)	4.3 (0.7)	4.2 (0.7)	4.2 (0.9)
broc_vas	3.2 (1.2)	3.1 (1.1)	3.2 (1.2)	3.3 (1.3)
grape_vas	4.2 (0.9)	4.2 (1.0)	4.1 (1.1)	4.1 (1.0)

[1] Mean (SD)

5.3 Base Model - Test Quadratic Effect

All intake models are currently controlling for: pre-meal Freddy Fullness, child BMI, average VAS liking rating for the meal foods conducted at each meal, and meal order.

5.3.1 Grams

```
Data: intake_long
Models:
grams_ps_mod: grams ~ preFF + fmi + sex + age_yr + cebq_sr + avg_vas + meal_order + g_served + (1 | sub
grams_psquad_mod: grams ~ preFF + fmi + sex + age_yr + cebq_sr + avg_vas + meal_order + g_served + g_se
                 npar    AIC    BIC  logLik deviance  Chisq Df Pr(>Chisq)
grams_ps_mod       11 4257.9 4300.2 -2117.9   4235.9
grams_psquad_mod   12 4256.9 4303.0 -2116.5   4232.9 2.9582  1    0.08545 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Table 14: Regression Table: Portion Size for Grams

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	610.538	243.366	84.190	2.509	0.014
preFF	-0.342	0.215	323.045	-1.587	0.113
fmi	28.280	17.427	78.116	1.623	0.109
sexFemale	-25.793	33.160	78.518	-0.778	0.439
age_yr	-17.505	25.802	78.104	-0.678	0.500
cebq_sr	-97.546	24.479	78.288	-3.985	0.000
avg_vas	36.599	15.013	328.020	2.438	0.015
meal_order	-5.970	4.136	252.664	-1.443	0.150
g_served	0.080	0.017	252.061	4.733	0.000

5.3.2 kcal

```
Data: intake_long
Models:
```

```
kcal_ps_mod: kcal ~ preFF + fmi + sex + age_yr + cebq_sr + avg_vas + meal_order + kcal_served + (1 | su
kcal_psquad_mod: kcal ~ preFF + fmi + sex + age_yr + cebq_sr + avg_vas + meal_order + kcal_served + kca
                npar    AIC    BIC  logLik deviance  Chisq Df Pr(>Chisq)
kcal_ps_mod       11 4456.9 4499.2 -2217.5   4434.9
kcal_psquad_mod   12 4458.9 4505.0 -2217.5   4434.9 0.0241  1     0.8767
```

Table 15: Regression Table: Portion Size for kcal

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	841.643	297.094	85.106	2.833	0.006
preFF	-0.898	0.290	331.211	-3.096	0.002
fmi	43.937	21.172	78.424	2.075	0.041
sexFemale	-40.363	40.299	78.890	-1.002	0.320
age_yr	-46.778	31.347	78.415	-1.492	0.140
cebq_sr	-124.846	29.744	78.616	-4.197	0.000
avg_vas	56.425	19.851	311.118	2.842	0.005
meal_order	3.511	5.700	253.226	0.616	0.538
kcal_served	0.118	0.017	252.581	6.843	0.000

5.4 Risk Status x Portion Size (linear effect)

5.4.1 Grams

Adding an interaction between Risk Status and Portion Size significantly improved model fit.

```
Data: intake_long
Models:
grams_ps_mod: grams ~ preFF + fmi + sex + age_yr + cebq_sr + avg_vas + meal_order + g_served + (1 | sub
grams_psxrisk_mod: grams ~ preFF + fmi + sex + age_yr + cebq_sr + avg_vas + meal_order + risk_status_mo
                  npar    AIC    BIC  logLik deviance  Chisq Df Pr(>Chisq)
grams_ps_mod        11 4257.9 4300.2 -2117.9   4235.9
grams_psxrisk_mod   13 4253.1 4303.0 -2113.6   4227.1 8.8066  2    0.01224 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Table 16: Regression Table: Risk x Portion Size for Grams

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	548.952	243.127	83.360	2.258	0.027
preFF	-0.355	0.214	320.876	-1.656	0.099
fmi	41.214	19.011	77.444	2.168	0.033
sexFemale	-26.320	32.829	77.764	-0.802	0.425
age_yr	-18.253	25.549	77.364	-0.714	0.477
cebq_sr	-89.274	24.749	77.468	-3.607	0.001
avg_vas	35.732	14.872	325.594	2.403	0.017
meal_order	-5.801	4.097	251.936	-1.416	0.158
risk_status_momHigh Risk	-26.863	37.520	98.277	-0.716	0.476
g_served	0.115	0.022	251.441	5.225	0.000
risk_status_momHigh Risk:g_served	-0.083	0.034	251.633	-2.441	0.015

Figure 1: Grams Consumed: Risk Status x Portion Size

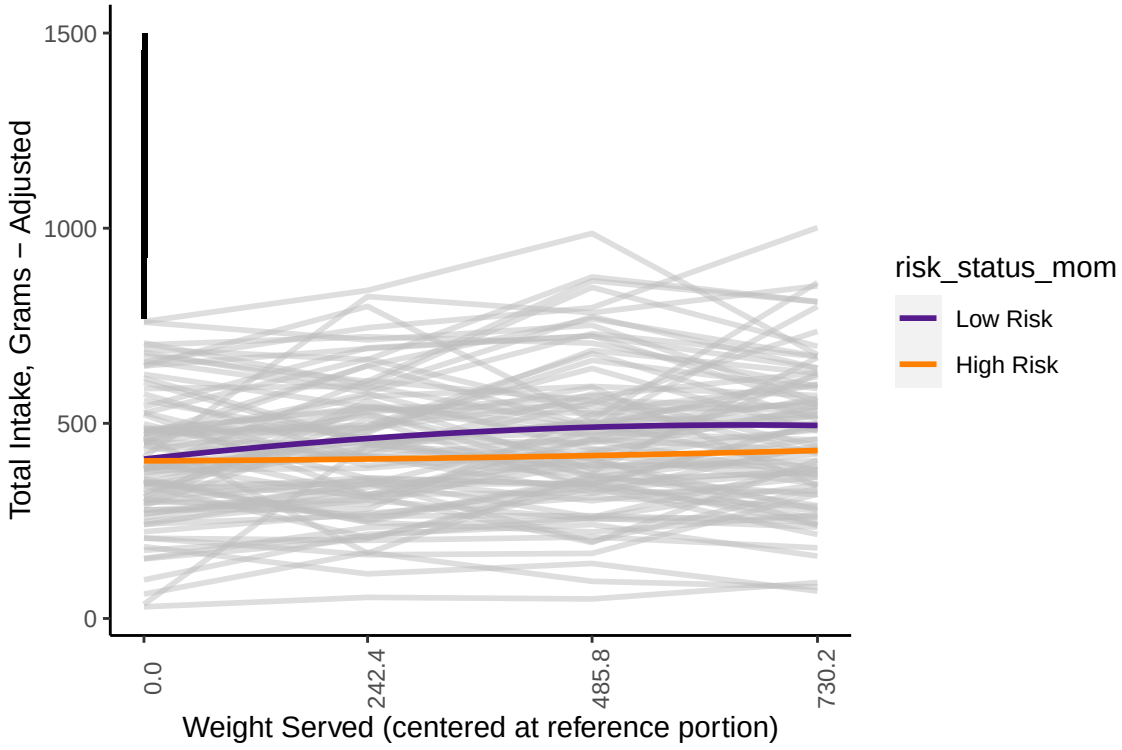


Table 17: Estimated Simple Slopes: Risk Status x Linear Portion Size for Grams

risk_status_mom	g_served.trend	SE	df	t.ratio	p.value
Low Risk	0.115	0.022	253.385	5.225	0.000
High Risk	0.032	0.026	253.454	1.234	0.218

Table 18: Estimated Marginal Means: Risk Status x Portion Size for Grams

	Low Risk	High Risk
0	421.420	403.317
242.4	448.356	410.773
485.8	476.945	414.579
730.2	507.692	431.542

```
    Welch Two Sample t-test

data:  grams_pred_rxps by risk_status_mom
t = 0.55089, df = 78.669, p-value = 0.5833
alternative hypothesis: true difference in means between group Low Risk and group High Risk is not equal
95 percent confidence interval:
 -47.30916  83.51479
sample estimates:
```

```
 mean in group Low Risk mean in group High Risk
              421.4203                403.3175


    Welch Two Sample t-test

data:  grams_pred_rxps by risk_status_mom
t = 1.1378, df = 77.531, p-value = 0.2587
alternative hypothesis: true difference in means between group Low Risk and group High Risk is not equal
95 percent confidence interval:
 -28.18194 103.34859
sample estimates:
 mean in group Low Risk mean in group High Risk
              448.3562                410.7728


    Welch Two Sample t-test

data:  grams_pred_rxps by risk_status_mom
t = 1.8701, df = 76.98, p-value = 0.06528
alternative hypothesis: true difference in means between group Low Risk and group High Risk is not equal
95 percent confidence interval:
  -4.042121 128.774554
sample estimates:
 mean in group Low Risk mean in group High Risk
              476.9452                414.5790


    Welch Two Sample t-test

data:  grams_pred_rxps by risk_status_mom
t = 2.34, df = 79.636, p-value = 0.02179
alternative hypothesis: true difference in means between group Low Risk and group High Risk is not equal
95 percent confidence interval:
  11.38357 140.91629
sample estimates:
 mean in group Low Risk mean in group High Risk
              507.6917                431.5418
```

5.4.1.1 No Plate Cleaners

Table 19: Regression Table: No Plate Cleaners - Risk x Portion Size for grams

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	450.615	249.506	80.741	1.806	0.075
preFF	-0.333	0.212	312.292	-1.570	0.117
fmi	38.422	19.043	75.372	2.018	0.047
sexFemale	-17.616	33.017	75.759	-0.534	0.595
age_yr	-8.789	25.996	75.299	-0.338	0.736
cebq_sr	-75.867	25.823	75.423	-2.938	0.004
avg_vas	33.164	14.863	317.264	2.231	0.026
meal_order	-6.464	4.090	245.829	-1.580	0.115
risk_status_momHigh Risk	-31.755	37.803	95.247	-0.840	0.403
g_served	0.118	0.022	245.487	5.382	0.000
risk_status_momHigh Risk:g_served	-0.079	0.034	245.697	-2.333	0.020

5.4.2 kcal

Adding an interaction between Risk Status and Portion Size (linear effect) significantly improved model fit.

```
Data: intake_long
Models:
kcal_ps_mod: kcal ~ preFF + fmi + sex + age_yr + cebq_sr + avg_vas + meal_order + kcal_served + (1 | su
kcal_psxrisk_mod: kcal ~ preFF + fmi + sex + age_yr + cebq_sr + avg_vas + meal_order + risk_status_mom
                 npar    AIC    BIC  logLik deviance  Chisq Df Pr(>Chisq)
kcal_ps_mod        11 4456.9 4499.2 -2217.5   4434.9
kcal_psxrisk_mod   13 4455.9 4505.8 -2214.9   4429.9 5.0904  2    0.07846 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Table 20: Regression Table: Risk x Portion Size for kcal

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	795.876	300.061	84.191	2.652	0.010
preFF	-0.915	0.290	328.606	-3.155	0.002
fmi	52.682	23.358	77.722	2.255	0.027
sexFemale	-40.696	40.347	78.083	-1.009	0.316
age_yr	-47.276	31.389	77.629	-1.506	0.136
cebq_sr	-119.207	30.409	77.736	-3.920	0.000
avg_vas	55.276	19.786	309.778	2.794	0.006
meal_order	3.710	5.666	252.432	0.655	0.513
risk_status_momHigh Risk	-3.450	46.795	104.316	-0.074	0.941
kcal_served	0.148	0.022	251.899	6.577	0.000
risk_status_momHigh Risk:kcal_served	-0.071	0.035	252.128	-2.046	0.042

Figure 2: kCal Consumed: Risk Status x Portion Size

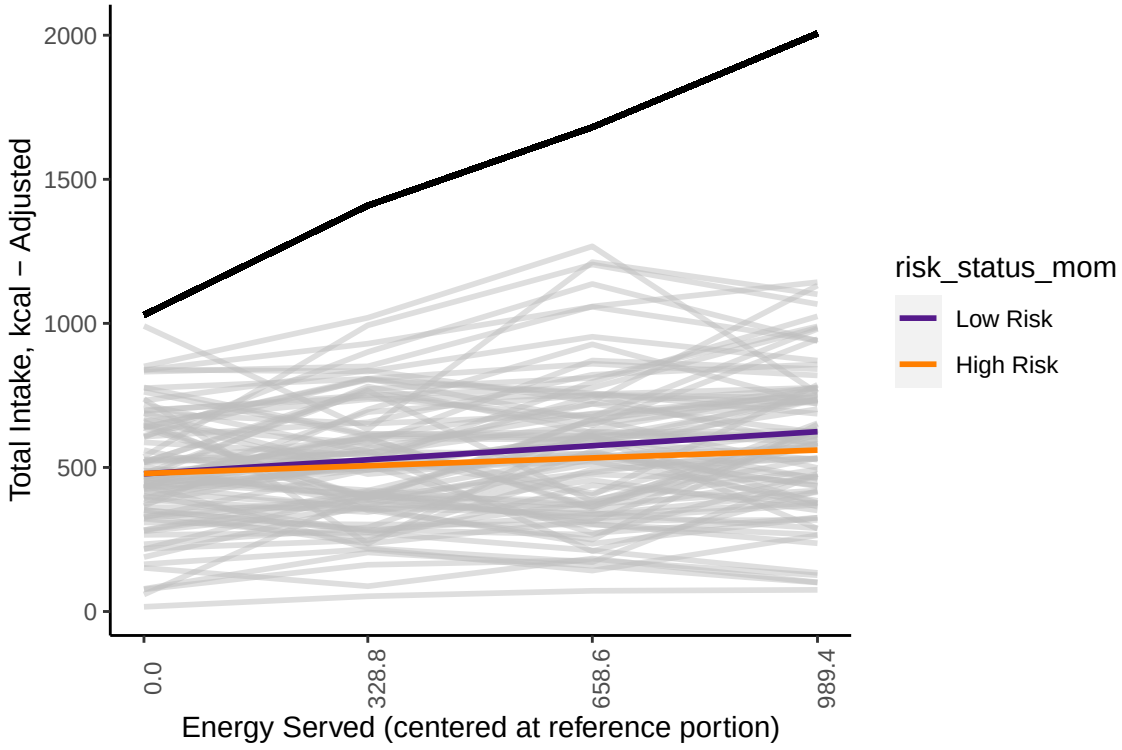


Table 21: Estimated Simple Slopes: Risk Status x Linear Portion Size for kcal

risk_status_mom	kcal_served.trend	SE	df	t.ratio	p.value
Low Risk	0.148	0.022	253.453	6.577	0.000
High Risk	0.077	0.027	253.556	2.899	0.004

Table 22: Estimated Marginal Means: Risk Status x Portion Size for kcal

	Low Risk	High Risk
0	477.859	481.352
328.8	525.858	506.562
658.6	577.043	524.942
989.4	623.169	565.408

```
    Welch Two Sample t-test

data:  kcal_pred_rxps by risk_status_mom
t = -0.081698, df = 73.102, p-value = 0.9351
alternative hypothesis: true difference in means between group Low Risk and group High Risk is not equal
95 percent confidence interval:
 -88.69351  81.70816
sample estimates:
```

```
 mean in group Low Risk mean in group High Risk
              477.8590                481.3516


    Welch Two Sample t-test

data:  kcal_pred_rxps by risk_status_mom
t = 0.4628, df = 73.864, p-value = 0.6449
alternative hypothesis: true difference in means between group Low Risk and group High Risk is not equal
95 percent confidence interval:
 -63.78518 102.37781
sample estimates:
 mean in group Low Risk mean in group High Risk
              525.8583                506.5620


    Welch Two Sample t-test

data:  kcal_pred_rxps by risk_status_mom
t = 1.1831, df = 70.856, p-value = 0.2407
alternative hypothesis: true difference in means between group Low Risk and group High Risk is not equal
95 percent confidence interval:
 -35.71301 139.91525
sample estimates:
 mean in group Low Risk mean in group High Risk
              577.0433                524.9422


    Welch Two Sample t-test

data:  kcal_pred_rxps by risk_status_mom
t = 1.3646, df = 75.687, p-value = 0.1764
alternative hypothesis: true difference in means between group Low Risk and group High Risk is not equal
95 percent confidence interval:
 -26.54999 142.07215
sample estimates:
 mean in group Low Risk mean in group High Risk
              623.1687                565.4076
```

5.4.2.1 No Plate Cleaners

Table 23: Regression Table: No Plate Cleaners - Risk x Portion Size for kcal

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	708.654	309.664	81.498	2.288	0.025
preFF	-0.911	0.288	319.895	-3.158	0.002
fmi	50.283	23.539	75.641	2.136	0.036
sexFemale	-32.145	40.824	76.081	-0.787	0.433
age_yr	-38.120	32.132	75.557	-1.186	0.239
cebq_sr	-106.486	31.921	75.689	-3.336	0.001
avg_vas	51.707	19.849	301.954	2.605	0.010
meal_order	1.655	5.672	246.312	0.292	0.771
risk_status_momHigh Risk	-6.669	47.400	100.851	-0.141	0.888
kcal_served	0.150	0.022	245.946	6.697	0.000
risk_status_momHigh Risk:kcal_served	-0.074	0.035	246.197	-2.128	0.034

6 Exploratory Analyses: Individual Foods

6.1 Chicken Nuggets

6.1.1 Grams

6.1.1.1 Base Model The difference between models with and without quadratic effect was not significant indicating the added model parameters/complexity did not improve model fit. Should only model chicken nugget gram intake with linear effect.

```
Data: intake_long
Models:
grams_chnug_ps_mod: chnug_grams ~ preFF + fmi + sex + age_yr + cebq_sr + chnug_vas + meal_order + g_serv
grams_chnug_ps_psquad_mod: chnug_grams ~ preFF + fmi + sex + age_yr + cebq_sr + chnug_vas + meal_order +
                          npar    AIC    BIC  logLik deviance  Chisq Df
grams_chnug_ps_mod          11 3510.5 3552.7 -1744.2   3488.5
grams_chnug_ps_psquad_mod   12 3512.2 3558.3 -1744.1   3488.2 0.2618  1
                          Pr(>Chisq)
grams_chnug_ps_mod
grams_chnug_ps_psquad_mod     0.6089
```

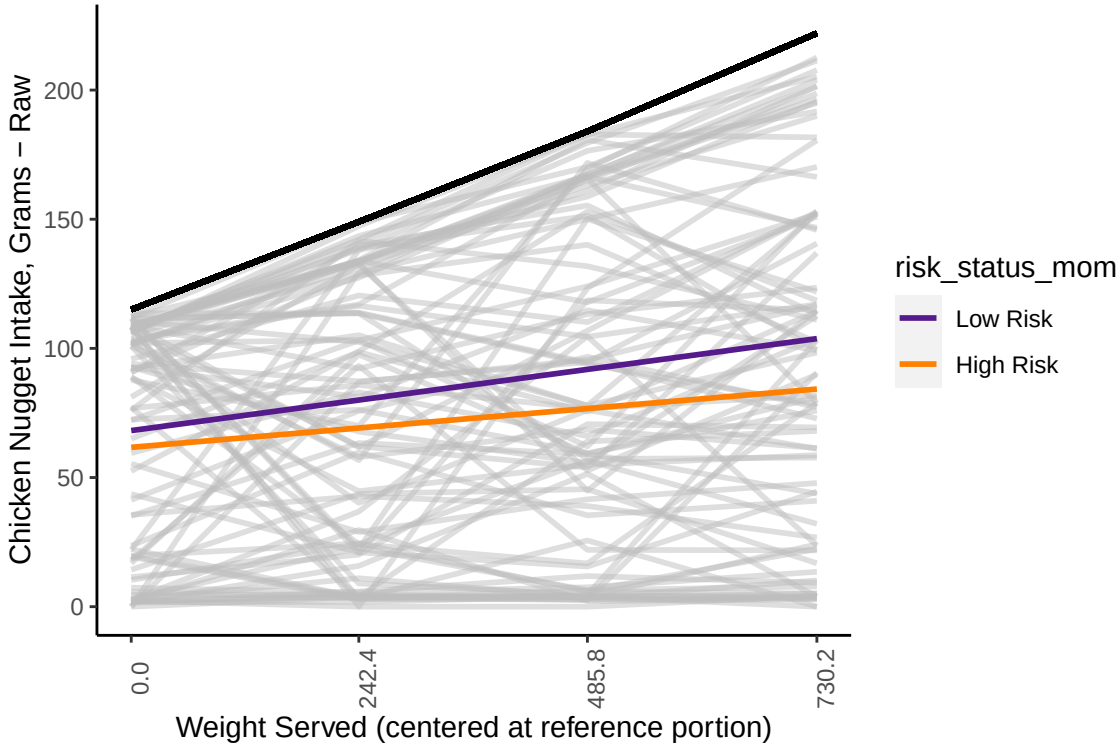
Table 24: Chicken Nugget - Portion Size for Grams

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	86.586	68.301	77.414	1.268	0.209
preFF	-0.218	0.074	334.458	-2.965	0.003
fmi	1.178	4.850	70.177	0.243	0.809
sexFemale	-13.638	9.229	70.549	-1.478	0.144
age_yr	-7.273	7.203	70.758	-1.010	0.316
cebq_sr	-11.770	6.829	70.821	-1.724	0.089
chnug_vas	18.123	3.315	315.856	5.468	0.000
meal_order	1.308	1.490	244.590	0.878	0.381
g_served	0.041	0.006	243.494	6.637	0.000

6.1.1.2 Risk x Portion Size

Table 25: Chicken Nugget - Risk x Portion Size for Grams

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	72.688	68.790	76.467	1.057	0.294
preFF	-0.218	0.074	332.273	-2.957	0.003
fmi	3.897	5.331	69.241	0.731	0.467
sexFemale	-13.755	9.201	69.431	-1.495	0.139
age_yr	-7.432	7.182	69.638	-1.035	0.304
cebq_sr	-10.047	6.948	69.496	-1.446	0.153
chnug_vas	18.129	3.309	313.445	5.479	0.000
meal_order	1.342	1.487	243.443	0.903	0.368
g_served	0.048	0.008	242.373	6.063	0.000
risk_status_momHigh Risk	-5.177	10.920	102.428	-0.474	0.636
g_served:risk_status_momHigh Risk	-0.019	0.012	242.677	-1.525	0.128



6.1.2 kcal

6.1.2.1 Base Model The difference between models with and without quadratic effect was not significant indicating the added model parameters/complexity did not improve model fit. Should only model chicken nugget kcal intake with linear effect.

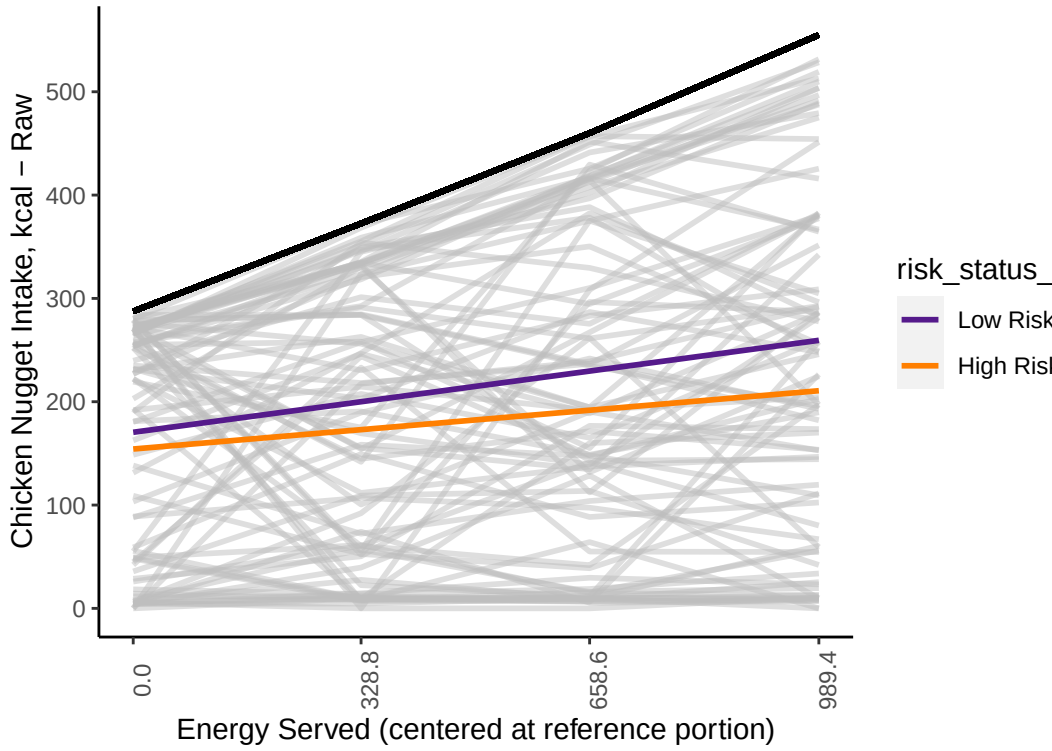
```
Data: intake_long
Models:
kcal_chnug_ps_mod: chnug_kcal ~ preFF + fmi + sex + age_yr + cebq_sr + chnug_vas + meal_order + kcal_se
kcal_chnug_ps_psquad_mod: chnug_kcal ~ preFF + fmi + sex + age_yr + cebq_sr + chnug_vas + meal_order + k
                         npar    AIC    BIC  logLik deviance  Chisq Df
kcal_chnug_ps_mod          11 4140.9 4183.2 -2059.5   4118.9
kcal_chnug_ps_psquad_mod   12 4142.6 4188.7 -2059.3   4118.6 0.2657  1
                         Pr(>Chisq)
kcal_chnug_ps_mod
kcal_chnug_ps_psquad_mod     0.6062
```

Table 26: Chicken - Nugget Portion Size for kcal

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	216.453	170.753	77.415	1.268	0.209
preFF	-0.546	0.184	334.458	-2.965	0.003
fmi	2.945	12.125	70.178	0.243	0.809
sexFemale	-34.095	23.073	70.550	-1.478	0.144
age_yr	-18.182	18.008	70.758	-1.010	0.316
cebq_sr	-29.424	17.072	70.821	-1.724	0.089
chnug_vas	45.309	8.286	315.854	5.468	0.000
meal_order	3.269	3.726	244.590	0.877	0.381
kcal_served	0.075	0.011	243.494	6.637	0.000

Table 27: Chicken - Nugget Risk x Portion Size for kcal

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	181.709	171.976	76.467	1.057	0.294
preFF	-0.546	0.185	332.273	-2.957	0.003
fmi	9.742	13.327	69.241	0.731	0.467
sexFemale	-34.388	23.004	69.431	-1.495	0.139
age_yr	-18.580	17.956	69.638	-1.035	0.304
cebq_sr	-25.118	17.370	69.496	-1.446	0.153
chnug_vas	45.324	8.272	313.444	5.479	0.000
meal_order	3.353	3.717	243.443	0.902	0.368
kcal_served	0.089	0.015	242.373	6.063	0.000
risk_status_momHigh Risk	-12.936	27.303	102.453	-0.474	0.637
kcal_served:risk_status_momHigh Risk	-0.035	0.023	242.677	-1.525	0.128



6.1.2.2 Risk x Portion Size

6.2 Mac and Cheese

6.2.1 Grams

6.2.1.1 Base Model The difference between models with and without quadratic effect was not significant indicating the added model parameters/complexity did not improve model fit. Should only model chicken nugget gram intake with linear effect.

```
Data: intake_long
Models:
grams_mac_ps_mod: mac_grams ~ preFF + fmi + sex + age_yr + cebq_sr + mac_vas + meal_order + g_served +
grams_mac_ps_psquad_mod: mac_grams ~ preFF + fmi + sex + age_yr + cebq_sr + mac_vas + meal_order + g_se
                        npar    AIC    BIC  logLik deviance Chisq Df Pr(>Chisq)
grams_mac_ps_mod          11 3844.9 3887.1 -1911.5   3822.9
grams_mac_ps_psquad_mod   12 3845.9 3892.0 -1911.0   3821.9 0.998  1     0.3178
```

Table 28: Mac and Cheese - Portion Size for Grams

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	266.161	138.494	77.812	1.922	0.058
preFF	-0.127	0.117	313.857	-1.085	0.279
fmi	30.598	10.149	76.899	3.015	0.003
sexFemale	-4.959	19.231	76.268	-0.258	0.797
age_yr	-26.733	14.975	76.017	-1.785	0.078
cebq_sr	-51.617	14.197	76.054	-3.636	0.001
mac_vas	21.601	4.540	330.911	4.757	0.000
meal_order	2.287	2.222	249.471	1.029	0.304
g_served	0.022	0.009	249.530	2.393	0.017

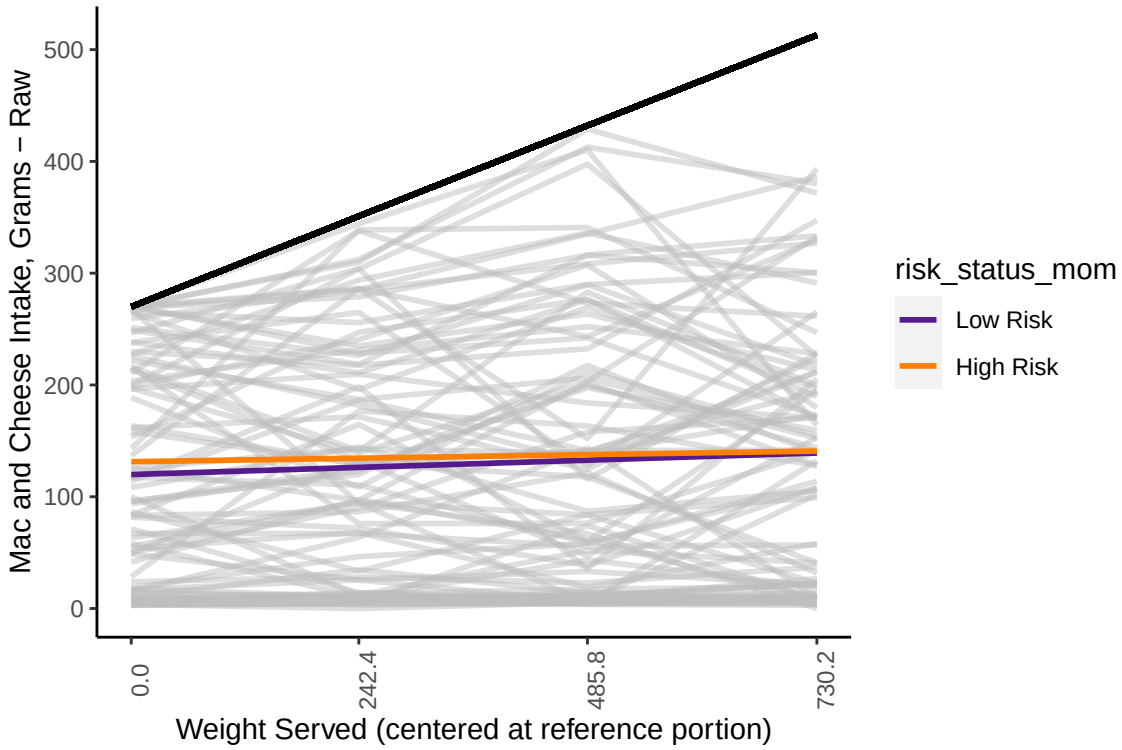
Table 29: Mac and Cheese - Risk x Portion Size for Grams

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	252.211	140.333	76.752	1.797	0.076
preFF	-0.125	0.117	311.416	-1.061	0.289
fmi	33.924	11.208	75.475	3.027	0.003
sexFemale	-5.074	19.301	75.122	-0.263	0.793
age_yr	-26.935	15.032	74.882	-1.792	0.077
cebq_sr	-49.529	14.553	74.866	-3.403	0.001
mac_vas	21.491	4.575	329.351	4.698	0.000
meal_order	2.298	2.226	248.322	1.032	0.303
g_served	0.025	0.012	248.591	2.047	0.042
risk_status_momHigh Risk	-12.268	21.927	92.817	-0.560	0.577
g_served:risk_status_momHigh Risk	-0.006	0.019	249.696	-0.348	0.728

6.2.1.2 Risk x Portion Size The interaction between Risk Status and Portion Size was not significant so it was removed from the model.

Table 30: Mac and Cheese - Risk x Portion Size for Grams

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	252.662	140.234	76.831	1.802	0.076
preFF	-0.122	0.117	312.203	-1.041	0.299
fmi	33.905	11.201	75.569	3.027	0.003
sexFemale	-5.082	19.289	75.219	-0.263	0.793
age_yr	-26.936	15.022	74.979	-1.793	0.077
cebq_sr	-49.528	14.543	74.963	-3.406	0.001
mac_vas	21.641	4.545	330.042	4.762	0.000
meal_order	2.285	2.223	249.412	1.028	0.305
g_served	0.022	0.009	249.469	2.394	0.017
risk_status_momHigh Risk	-14.677	20.791	75.456	-0.706	0.482



6.2.2 kcal

6.2.2.1 Base Model The difference between models with and without quadratic effect was not significant indicating the added model parameters/complexity did not improve model fit. Should only model chicken nugget kcal intake with linear effect.

```
Data: intake_long
Models:
kcal_mac_ps_mod: mac_kcal ~ preFF + fmi + sex + age_yr + mac_vas + cebq_sr + meal_order + kcal_served +
kcal_mac_ps_psquad_mod: mac_kcal ~ preFF + fmi + sex + age_yr + cebq_sr + mac_vas + meal_order + kcal_s
                        npar  AIC    BIC  logLik deviance  Chisq Df Pr(>Chisq)
kcal_mac_ps_mod           11 4210 4252.2 -2094.0     4188
kcal_mac_ps_psquad_mod    12 4211 4257.1 -2093.5     4187 0.9954  1     0.3184
```

Table 31: Mac and Cheese - Portion Size for kcal

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	452.468	235.439	77.812	1.922	0.058
preFF	-0.215	0.198	313.857	-1.085	0.279
fmi	52.017	17.254	76.899	3.015	0.003
sexFemale	-8.430	32.693	76.268	-0.258	0.797
age_yr	-45.446	25.458	76.017	-1.785	0.078
mac_vas	36.721	7.719	330.910	4.757	0.000
cebq_sr	-87.748	24.135	76.054	-3.636	0.001
meal_order	3.887	3.778	249.471	1.029	0.305
kcal_served	0.027	0.011	249.530	2.393	0.017

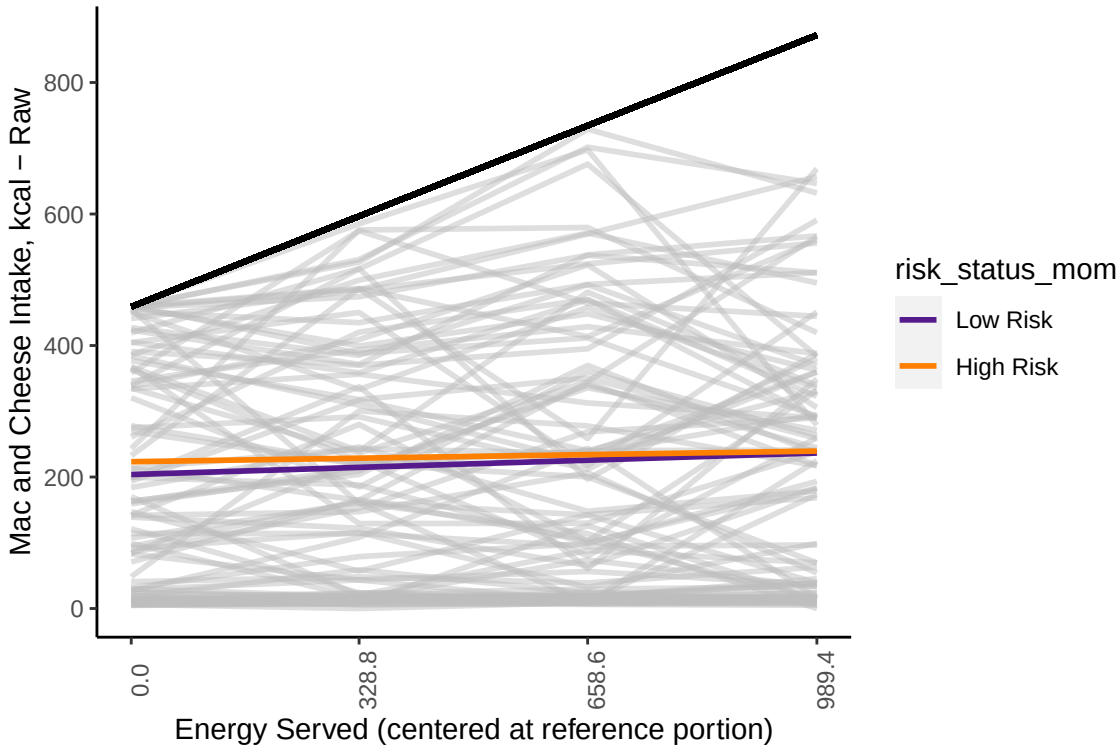
Table 32: Mac and Cheese - Risk x Portion Size for kcal

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	428.752	238.566	76.752	1.797	0.076
preFF	-0.212	0.200	311.415	-1.061	0.289
fmi	57.671	19.054	75.475	3.027	0.003
sexFemale	-8.626	32.813	75.122	-0.263	0.793
age_yr	-45.790	25.555	74.882	-1.792	0.077
cebq_sr	-84.200	24.740	74.866	-3.403	0.001
mac_vas	36.534	7.777	329.351	4.698	0.000
meal_order	3.907	3.785	248.322	1.032	0.303
kcal_served	0.031	0.015	248.591	2.048	0.042
risk_status_momHigh Risk	-20.851	37.277	92.830	-0.559	0.577
kcal_served:risk_status_momHigh Risk	-0.008	0.023	249.697	-0.348	0.728

6.2.2.2 Risk x Portion Size The interaction between Risk Status and Portion Size was not significant so it was removed from the model.

Table 33: Mac and Cheese - Risk x Portion Size for kcal

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	429.519	238.398	76.831	1.802	0.076
preFF	-0.207	0.199	312.203	-1.041	0.299
fmi	57.639	19.041	75.569	3.027	0.003
sexFemale	-8.639	32.791	75.219	-0.263	0.793
age_yr	-45.792	25.538	74.979	-1.793	0.077
cebq_sr	-84.198	24.724	74.963	-3.406	0.001
mac_vas	36.790	7.726	330.041	4.762	0.000
meal_order	3.884	3.778	249.412	1.028	0.305
kcal_served	0.027	0.011	249.469	2.394	0.017
risk_status_momHigh Risk	-24.951	35.345	75.456	-0.706	0.482



6.3 Grapes

6.3.1 Grams

6.3.1.1 Base Model The difference between models with and without quadratic effect was not significant indicating the added model parameters/complexity did not improve model fit. Should only model chicken nugget gram intake with linear effect.

```
Data: intake_long
Models:
grams_grape_ps_mod: grape_grams ~ preFF + fmi + sex + age_yr + cebq_sr + grape_vas + meal_order + g_serv
grams_grape_ps_psquad_mod: grape_grams ~ preFF + fmi + sex + age_yr + cebq_sr + grape_vas + meal_order +
                          npar    AIC    BIC  logLik deviance  Chisq Df
grams_grape_ps_mod          11 3739.1 3781.3 -1858.5   3717.1
grams_grape_ps_psquad_mod   12 3741.1 3787.2 -1858.5   3717.1 0.0108  1
                          Pr(>Chisq)
grams_grape_ps_mod
grams_grape_ps_psquad_mod     0.9171
```

Table 34: Grapes - Portion Size for Grams

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	6.518	126.242	76.715	0.052	0.959
preFF	-0.052	0.099	306.576	-0.529	0.597
fmi	-14.144	9.238	75.411	-1.531	0.130
sexFemale	-2.797	17.566	75.676	-0.159	0.874
age_yr	20.048	13.679	75.430	1.466	0.147
cebq_sr	-11.169	13.022	76.519	-0.858	0.394
grape_vas	9.860	4.183	323.480	2.357	0.019
meal_order	-5.168	1.866	248.719	-2.769	0.006
g_served	0.025	0.008	248.715	3.304	0.001

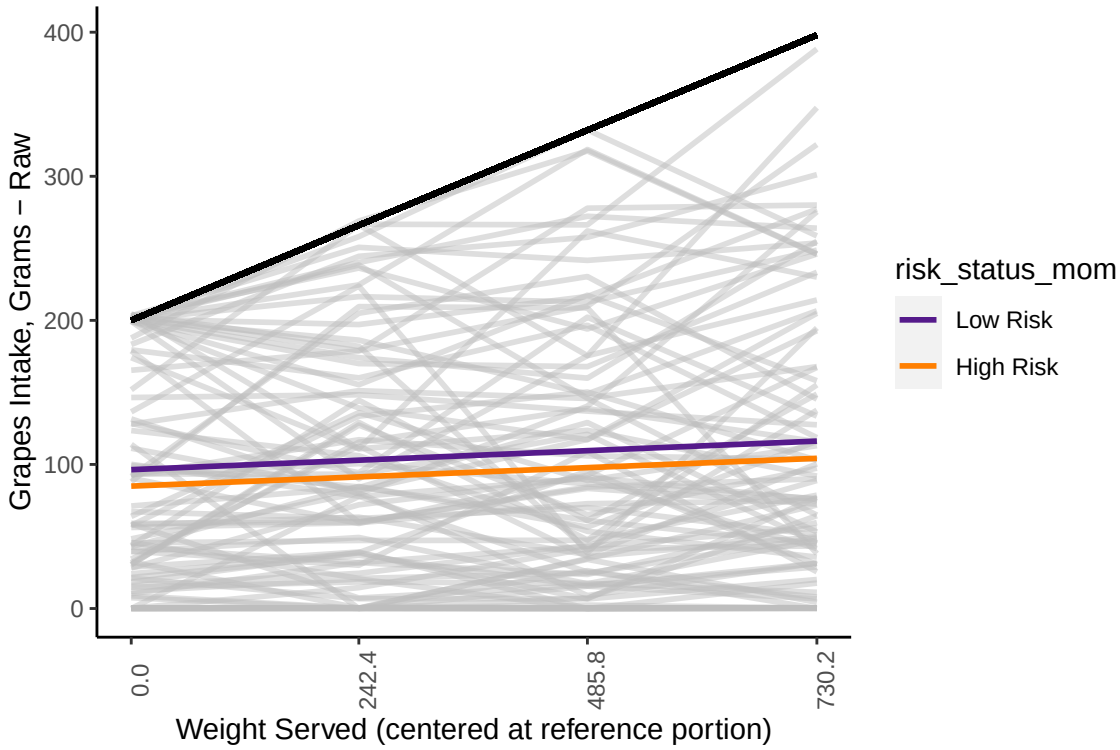
Table 35: Grapes - Risk x Portion Size for Grams

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	8.860	128.210	75.931	0.069	0.945
preFF	-0.055	0.100	303.903	-0.552	0.581
fmi	-14.943	10.234	74.490	-1.460	0.148
sexFemale	-2.786	17.666	74.730	-0.158	0.875
age_yr	20.097	13.759	74.493	1.461	0.148
cebq_sr	-11.684	13.367	75.362	-0.874	0.385
grape_vas	9.921	4.218	321.972	2.352	0.019
meal_order	-5.159	1.870	247.767	-2.759	0.006
g_served	0.027	0.010	248.136	2.701	0.007
risk_status_momHigh Risk	5.217	19.877	89.111	0.262	0.794
g_served:risk_status_momHigh Risk	-0.005	0.016	248.780	-0.296	0.768

6.3.1.2 Risk x Portion Size The interaction between Risk Status and Portion Size was not significiant so it was removed from the model.

Table 36: Grapes - Risk x Portion Size for Grams

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	10.013	128.270	75.889	0.078	0.938
preFF	-0.053	0.099	304.786	-0.535	0.593
fmi	-14.935	10.243	74.559	-1.458	0.149
sexFemale	-2.748	17.681	74.794	-0.155	0.877
age_yr	20.103	13.771	74.562	1.460	0.149
cebq_sr	-11.641	13.378	75.422	-0.870	0.387
grape_vas	9.752	4.188	322.458	2.328	0.021
meal_order	-5.167	1.866	248.839	-2.769	0.006
g_served	0.025	0.008	248.834	3.304	0.001
risk_status_momHigh Risk	3.526	19.052	74.945	0.185	0.854



6.3.2 kcal

6.3.2.1 Base Model The difference between models with and without quadratic effect was not significant indicating the added model parameters/complexity did not improve model fit. Should only model chicken nugget kcal intake with linear effect.

```
Data: intake_long
Models:
kcal_grape_ps_mod: grape_kcal ~ preFF + fmi + sex + age_yr + cebq_sr + grape_vas + meal_order + kcal_se
kcal_grape_ps_psquad_mod: grape_kcal ~ preFF + fmi + sex + age_yr + cebq_sr + grape_vas + meal_order + k
                          npar    AIC    BIC  logLik deviance  Chisq Df
kcal_grape_ps_mod           11 3488.8 3531.0 -1733.4   3466.8
kcal_grape_ps_psquad_mod    12 3490.8 3536.9 -1733.4   3466.8 0.0106  1
                          Pr(>Chisq)
kcal_grape_ps_mod
kcal_grape_ps_psquad_mod      0.918
```

Table 37: Grapes - Portion Size for kcal

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	4.529	87.739	76.715	0.052	0.959
preFF	-0.036	0.069	306.576	-0.529	0.597
fmi	-9.830	6.420	75.411	-1.531	0.130
sexFemale	-1.944	12.208	75.676	-0.159	0.874
age_yr	13.934	9.507	75.430	1.466	0.147
cebq_sr	-7.762	9.050	76.519	-0.858	0.394
grape_vas	6.853	2.907	323.479	2.357	0.019
meal_order	-3.592	1.297	248.719	-2.770	0.006
kcal_served	0.013	0.004	248.715	3.304	0.001

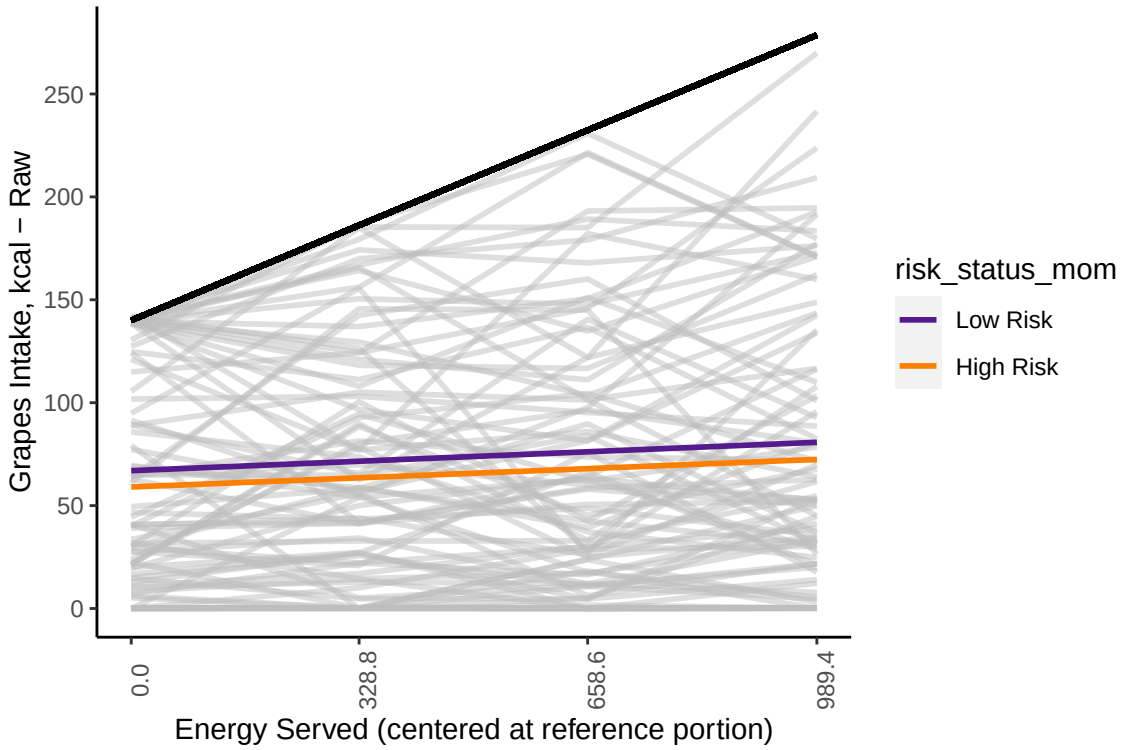
Table 38: Grapes - Risk x Portion Size for kcal

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	6.156	89.106	75.931	0.069	0.945
preFF	-0.038	0.069	303.903	-0.552	0.581
fmi	-10.386	7.113	74.490	-1.460	0.148
sexFemale	-1.936	12.278	74.729	-0.158	0.875
age_yr	13.967	9.562	74.492	1.461	0.148
cebq_sr	-8.120	9.290	75.362	-0.874	0.385
grape_vas	6.895	2.931	321.972	2.352	0.019
meal_order	-3.586	1.300	247.767	-2.759	0.006
kcal_served	0.014	0.005	248.136	2.701	0.007
risk_status_momHigh Risk	3.626	13.815	89.121	0.262	0.794
kcal_served:risk_status_momHigh Risk	-0.002	0.008	248.780	-0.296	0.768

6.3.2.2 Risk x Portion Size The interaction between Risk Status and Portion Size was not significant so it was removed from the model.

Table 39: Grapes - Risk x Portion Size for kcal

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	6.958	89.148	75.889	0.078	0.938
preFF	-0.037	0.069	304.786	-0.536	0.593
fmi	-10.380	7.119	74.559	-1.458	0.149
sexFemale	-1.910	12.288	74.794	-0.155	0.877
age_yr	13.971	9.571	74.562	1.460	0.149
cebq_sr	-8.090	9.297	75.422	-0.870	0.387
grape_vas	6.777	2.911	322.458	2.328	0.021
meal_order	-3.591	1.297	248.839	-2.769	0.006
kcal_served	0.013	0.004	248.834	3.304	0.001
risk_status_momHigh Risk	2.451	13.241	74.945	0.185	0.854



6.4 Broccoli

6.4.1 Grams

6.4.1.1 Base Model The difference between models with and without quadratic effect was not significant indicating the added model parameters/complexity did not improve model fit. Should only model chicken nugget gram intake with linear effect.

```
Data: intake_long
Models:
grams_broc_ps_mod: broc_grams ~ preFF + fmi + sex + age_yr + cebq_sr + broc_vas + meal_order + g_served
grams_broc_ps_psquad_mod: broc_grams ~ preFF + fmi + sex + age_yr + cebq_sr + broc_vas + meal_order + g_
                          npar    AIC    BIC  logLik deviance Chisq Df
grams_broc_ps_mod           11 3443.2 3485.5 -1710.6   3421.2
grams_broc_ps_psquad_mod    12 3444.5 3490.6 -1710.2   3420.5 0.771  1
                          Pr(>Chisq)
grams_broc_ps_mod
grams_broc_ps_psquad_mod     0.3799
```

Table 40: Broccoli - Portion Size for Grams

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	-50.805	71.254	71.851	-0.713	0.478
preFF	0.009	0.066	322.980	0.133	0.894
fmi	-6.030	5.208	70.632	-1.158	0.251
sexFemale	12.860	9.906	70.947	1.298	0.198
age_yr	13.101	7.706	70.524	1.700	0.094
cebq_sr	-1.238	7.316	70.829	-0.169	0.866
broc_vas	1.288	2.310	285.344	0.558	0.577
meal_order	-1.106	1.274	244.042	-0.868	0.386
g_served	0.002	0.005	244.316	0.330	0.742

Table 41: brocs - Risk x Portion Size for Grams

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	-53.112	72.536	70.574	-0.732	0.466
preFF	0.000	0.066	319.246	0.006	0.995
fmi	-6.056	5.787	69.385	-1.046	0.299
sexFemale	12.887	9.999	69.773	1.289	0.202
age_yr	13.139	7.780	69.370	1.689	0.096
cebq_sr	-1.262	7.537	69.471	-0.168	0.867
broc_vas	1.007	2.315	287.623	0.435	0.664
meal_order	-1.059	1.266	242.816	-0.837	0.404
g_served	0.011	0.007	243.262	1.553	0.122
risk_status_momHigh Risk	7.686	11.459	89.845	0.671	0.504
g_served:risk_status_momHigh Risk	-0.021	0.011	242.964	-2.005	0.046

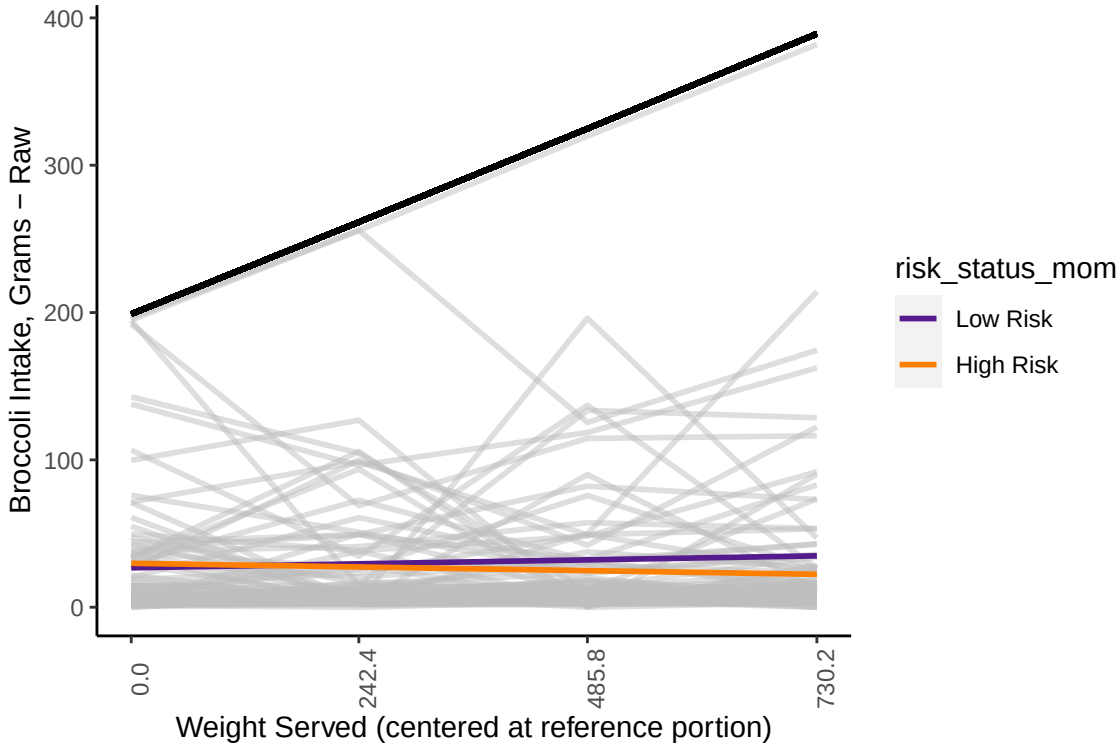
6.4.1.2 Risk x Portion Size Unlike other models, none of the control variables were associated with broccoli intake.

There was a significant interaction between Risk Status and Portion Size.

Table 42: Estimated Simple Slopes: Risk Status x Portion Size for Broccoli grams

risk_status_mom	g_served.trend	SE	df	t.ratio	p.value
Low Risk	0.011	0.007	253.974	1.553	0.122
High Risk	-0.011	0.008	253.518	-1.309	0.192

contrast	estimate	SE	df	t.ratio	p.value
Low Risk - High Risk	0.021	0.011	253.7	2.005	0.046



6.4.2 kcal

6.4.2.1 Base Model The difference between models with and without quadratic effect was not significant indicating the added model parameters/complexity did not improve model fit. Should only model chicken nugget kcal intake with linear effect.

```
Data: intake_long
Models:
kcal_broc_ps_mod: broc_kcal ~ preFF + fmi + sex + cebq_sr + broc_vas + age_yr + meal_order + kcal_serve
kcal_broc_ps_psquad_mod: broc_kcal ~ preFF + fmi + sex + age_yr + cebq_sr + broc_vas + meal_order + kca
                        npar    AIC    BIC  logLik deviance  Chisq Df
kcal_broc_ps_mod          11 3445.3 3487.6 -1711.7   3423.3
kcal_broc_ps_psquad_mod   12 3446.5 3492.6 -1711.3   3422.5 0.7714  1
                        Pr(>Chisq)
kcal_broc_ps_mod
kcal_broc_ps_psquad_mod     0.3798
```

Table 43: Broccoli - Portion Size for kcal

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	-50.957	71.468	71.851	-0.713	0.478
preFF	0.009	0.066	322.981	0.133	0.894
fmi	-6.048	5.223	70.632	-1.158	0.251
sexFemale	12.898	9.936	70.947	1.298	0.198
cebq_sr	-1.242	7.338	70.829	-0.169	0.866
broc_vas	1.292	2.317	285.345	0.558	0.577
age_yr	13.140	7.729	70.524	1.700	0.094
meal_order	-1.109	1.278	244.042	-0.868	0.386
kcal_served	0.001	0.004	244.315	0.329	0.742

Table 44: brocs - Risk x Portion Size for kcal

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	-53.273	72.753	70.574	-0.732	0.466
preFF	0.000	0.066	319.246	0.006	0.995
fmi	-6.074	5.805	69.385	-1.046	0.299
sexFemale	12.925	10.029	69.773	1.289	0.202
age_yr	13.179	7.804	69.370	1.689	0.096
cebq_sr	-1.266	7.559	69.471	-0.168	0.867
broc_vas	1.010	2.322	287.624	0.435	0.664
meal_order	-1.062	1.270	242.816	-0.837	0.404
kcal_served	0.008	0.005	243.261	1.553	0.122
risk_status_momHigh Risk	7.713	11.493	89.860	0.671	0.504
kcal_served:risk_status_momHigh Risk	-0.016	0.008	242.964	-2.005	0.046

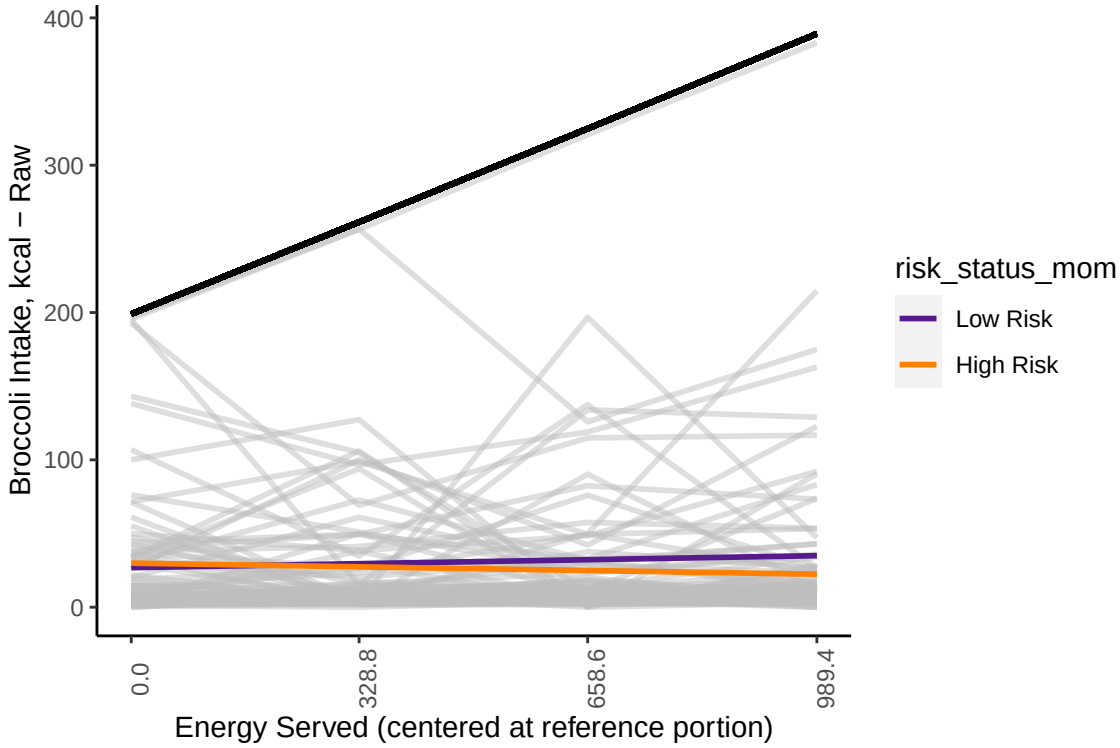
6.4.2.2 Risk x Portion Size Unlike other models, none of the control variables were associated with broccoli intake.

There was a significant interaction between Risk Status and Portion Size.

Table 45: Estimated Simple Slopes: Risk Status x Portion Size for Broccoli kcal

risk_status_mom	kcal_served.trend	SE	df	t.ratio	p.value
Low Risk	0.008	0.005	253.973	1.553	0.122
High Risk	-0.008	0.006	253.518	-1.310	0.191

contrast	estimate	SE	df	t.ratio	p.value
Low Risk - High Risk	0.016	0.008	253.7	2.005	0.046



7 Exploratory Analyses: Mediated Moderation

Since broccoli was the only food showing a Risk Status x Portion Size interaction, I tested whether broccoli intake mediates the overall Risk x Potion Size interaction using a mediated moderation model.

7.1 Grams

```
lavaan 0.6-9 ended normally after 223 iterations

  Estimator                                         ML
  Optimization method                           NLMINB
  Number of model parameters                        26

  Number of observations                           344
  Number of clusters [sub]                          86

Model Test User Model:
                                              Standard      Robust
  Test Statistic                                10.013       4.657
  Degrees of freedom                                 3           3
  P-value (Chi-square)                           0.018       0.199
  Scaling correction factor                                  2.150
       Yuan-Bentler correction (Mplus variant)

Parameter Estimates:

  Standard errors                           Robust.cluster
  Information                                     Observed
  Observed information based on                    Hessian

Regressions:
                   Estimate   Std.Err  z-value  P(>|z|)
  grams ~
    sub              -0.397    0.323   -1.228    0.220
    preFF            -1.030    0.306   -3.372    0.001
    fmi              45.774   15.409    2.971    0.003
    sex             -60.630   28.488   -2.128    0.033
    age_yr          -37.981   20.214   -1.879    0.060
    cebq_sr         -85.051   20.574   -4.134    0.000
    avg_vas          57.960   23.145    2.504    0.012
    meal_order       -4.634    4.362   -1.062    0.288
    rsk_stts_m      -23.863   32.743   -0.729    0.466
    g_served          0.102    0.020    5.044    0.000
    psxrsk_nt_ (c)   -0.062    0.033   -1.871    0.061
  broc_grams ~
    preFF            -0.083    0.069   -1.197    0.231
    fmi              -5.858    4.482   -1.307    0.191
    sex               9.623    9.647    0.998    0.318
    age_yr           12.519    8.008    1.563    0.118
    cebq_sr           0.364    3.666    0.099    0.921
    broc_vas         11.975    2.847    4.207    0.000
    meal_order       -1.258    1.467   -0.857    0.391
```

```
    rsk_stts_m        11.828    8.601    1.375    0.169
    g_served           0.009    0.008    1.134    0.257
    psxrsk_nt_ (a)    -0.021    0.010   -2.055    0.040
  grams ~
    broc_grams (b)     1.265    0.178    7.092    0.000

Intercepts:
                   Estimate   Std.Err  z-value  P(>|z|)
   .grams            699.008  210.271    3.324    0.001
   .broc_grams      -105.036   62.996   -1.667    0.095

Variances:
                   Estimate   Std.Err  z-value  P(>|z|)
   .grams          19368.496 1965.059    9.856    0.000
   .broc_grams      2033.384  694.228    2.929    0.003

Defined Parameters:
                   Estimate   Std.Err  z-value  P(>|z|)
    ab                -0.026    0.013   -1.978    0.048
    total             -0.088    0.036   -2.442    0.015
```

There was a significant level indirect effect (p = 0.036) indicating that broccoli intake mediated the interaction between risk status and portion size for gram intake.

7.2 kcal

```
lavaan 0.6-9 ended normally after 214 iterations

  Estimator                                         ML
  Optimization method                           NLMINB
  Number of model parameters                        26

  Number of observations                           344
  Number of clusters [sub]                          86

Model Test User Model:
                                              Standard      Robust
  Test Statistic                                18.154       8.740
  Degrees of freedom                                 3           3
  P-value (Chi-square)                           0.000       0.033
  Scaling correction factor                                  2.077
       Yuan-Bentler correction (Mplus variant)

Parameter Estimates:

  Standard errors                         Robust.cluster
  Information                                   Observed
  Observed information based on                 Hessian

Regressions:
                   Estimate    Std.Err  z-value  P(>|z|)
  kcal ~
```

```
    sub                -0.228    0.453   -0.504    0.614
    preFF              -1.637    0.351   -4.662    0.000
    fmi                58.124   21.146    2.749    0.006
    sex               -71.368   35.820   -1.992    0.046
    age_yr            -65.990   28.517   -2.314    0.021
    cebq_sr          -115.867   24.223   -4.783    0.000
    avg_vas            76.010   26.394    2.880    0.004
    meal_order          5.010    5.920    0.846    0.397
    rsk_stts_m         -1.780   39.686   -0.045    0.964
    kcal_servd          0.137    0.022    6.225    0.000
    psxrsk_nt_ (c)     -0.055    0.037   -1.481    0.139
  broc_kcal ~
    preFF              -0.083    0.070   -1.197    0.231
    fmi                -5.875    4.496   -1.307    0.191
    sex                 9.652    9.676    0.998    0.318
    age_yr             12.557    8.032    1.563    0.118
    cebq_sr             0.365    3.677    0.099    0.921
    broc_vas           12.011    2.855    4.207    0.000
    meal_order         -1.262    1.471   -0.858    0.391
    rsk_stts_m         11.867    8.628    1.375    0.169
    kcal_servd          0.007    0.006    1.134    0.257
    psxrsk_nt_ (a)     -0.015    0.008   -2.055    0.040
  kcal ~
    broc_kcal  (b)      1.348    0.288    4.685    0.000

Intercepts:
                   Estimate    Std.Err  z-value  P(>|z|)
   .kcal              916.768  307.247    2.984    0.003
   .broc_kcal        -105.355   63.185   -1.667    0.095

Variances:
                   Estimate    Std.Err  z-value  P(>|z|)
   .kcal            33277.547 3557.147    9.355    0.000
   .broc_kcal        2045.600  698.399    2.929    0.003

Defined Parameters:
                   Estimate    Std.Err  z-value  P(>|z|)
    ab                -0.021    0.011   -1.934    0.053
    total             -0.075    0.038   -1.971    0.049
```

There was a significant level indirect effect (p = 0.048) indicating that broccoli intake mediated the interaction between risk status and portion size for kcal intake.