

## Supplementary Material

### *Analysis of the Effects of Oxytocin on Calorie Consumption, By Eating Disorder Status and Oestrous Phase*

*24-hour calorie consumption.* Fifteen women completed the study in the follicular phase of the oestrous cycle, thirteen women completed the study in the luteal phase, and twenty-two women were taking hormonal contraception at the time of the study. In order to account for the possible moderating effect of varying oestrous phase on the effect of oxytocin on eating, we first conducted a preliminary negative binomial regression with the predictors Oestrous Phase and Drug Condition. This analysis revealed a main effect of oestrous phase (Wald Chi-Square = 6.88,  $df = 2$ ,  $p = .032$ ), such that women consumed significantly more calories over a 24-hour period when in the luteal phase, as opposed to the follicular phase or when taking hormonal contraception. However, there was not a significant interaction between oestrous phase and drug condition on food consumption reported in the 24-hour food diary (full results of the negative binomial regression are reported in the **Supplementary Table 1**). We therefore proceeded with the main analysis without including oestrous phase as a predictor.

*Taste test calorie consumption.* We first conducted a negative binomial regression to determine whether oestrous phase and food type interacted with oxytocin to impact caloric consumption in the taste test. There was a significant effect of food type, such that participants consumed significantly fewer calories in grapes, as opposed to crisps or chocolate. This binomial regression did not reveal either a significant main effect of oestrous phase, a significant interaction between oestrous phase and drug condition, or a significant interaction between food type and drug condition on caloric consumption in the taste test. (full results of this negative binomial regression are reported in the **Supplementary Table 2**).

### Supplementary Table 1

*Results from the preliminary negative binomial regression testing the effect of oestrous phase and oxytocin on calorie consumption in the 24-hour food diaries*

	Wald Chi-Square	df	p
Drug Condition	0.16	1	.692
Oestrous Phase	6.88*	2	.032
Drug Condition*Oestrous Phase	3.65	2	.161

\*  $p < .05$

### Supplementary Table 2

*Results from the preliminary negative binomial regression testing the effect of oestrous phase and oxytocin on calorie consumption in the taste test*

	Wald Chi-Square	df	p
Drug Condition	0.58	1	.448
Oestrous Phase	2.64	2	.267
Food Type	31.05***	2	< .001
Drug Condition*Oestrous Phase	1.30	2	.522
Drug Condition*Food Type	0.33	2	.847

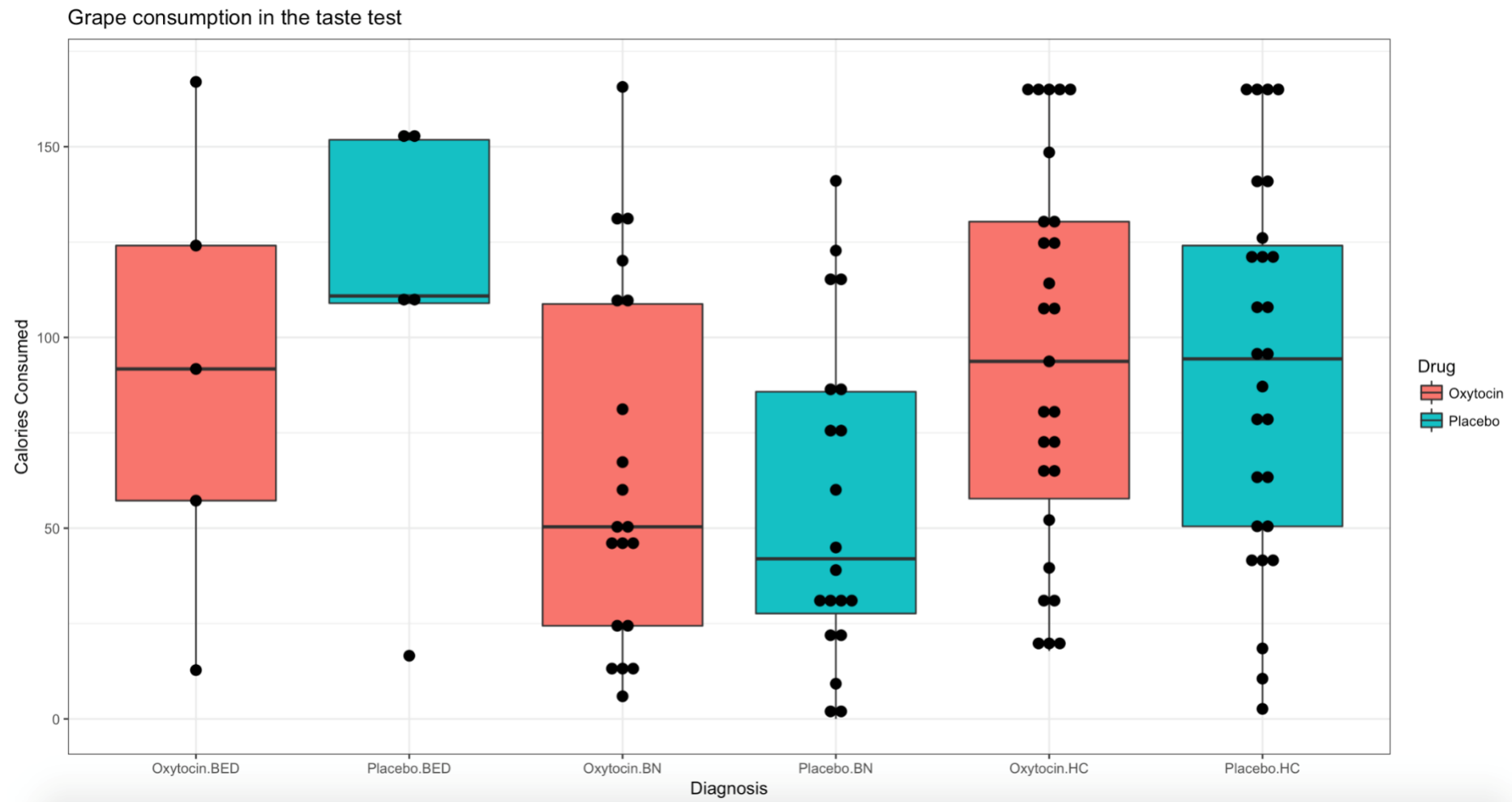
\*  $p < .001$

### Supplementary Table 3

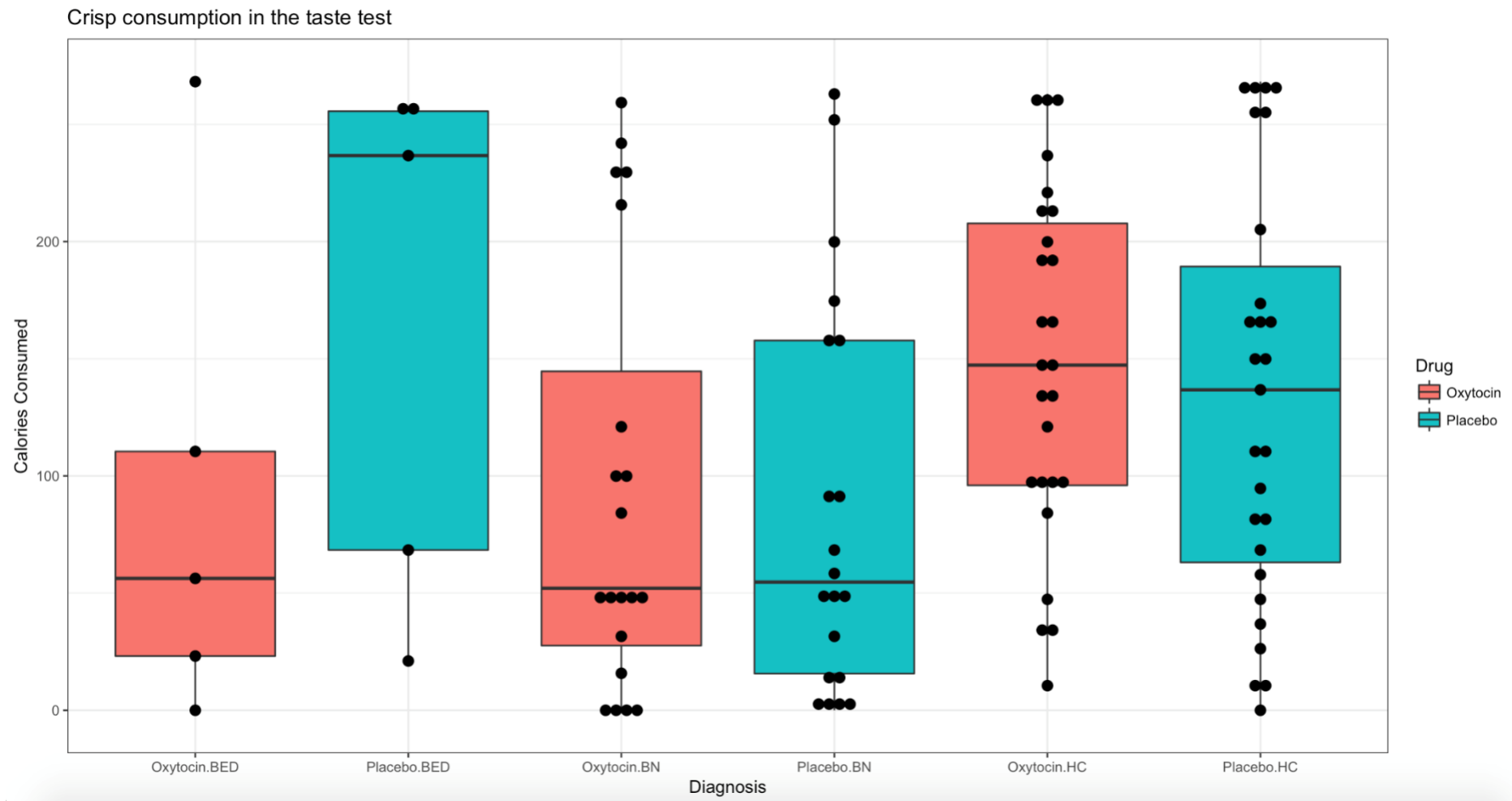
*Results of the linear mixed effects analysis testing the moderating effect of follicular phase on the effects of oxytocin on salivary cortisol*

<b>Fixed Effects</b>	Estimate	<i>SE</i>	<i>df</i>	<i>t</i>	<i>p</i>
Intercept	0.48***	0.05	80.96	8.71	3.03E-13
Follicular Phase	-0.03	0.02	80.36	-1.11	.272
Drug Condition	3.63E-5	0.05	235.7	0.001	.999
Follicular Phase*Drug Condition	-2.69E-3	0.02	235.7	-0.121	.904
<b>Random Effects</b>	Variance				
Individual Participant	0.01				
Residuals	0.03				

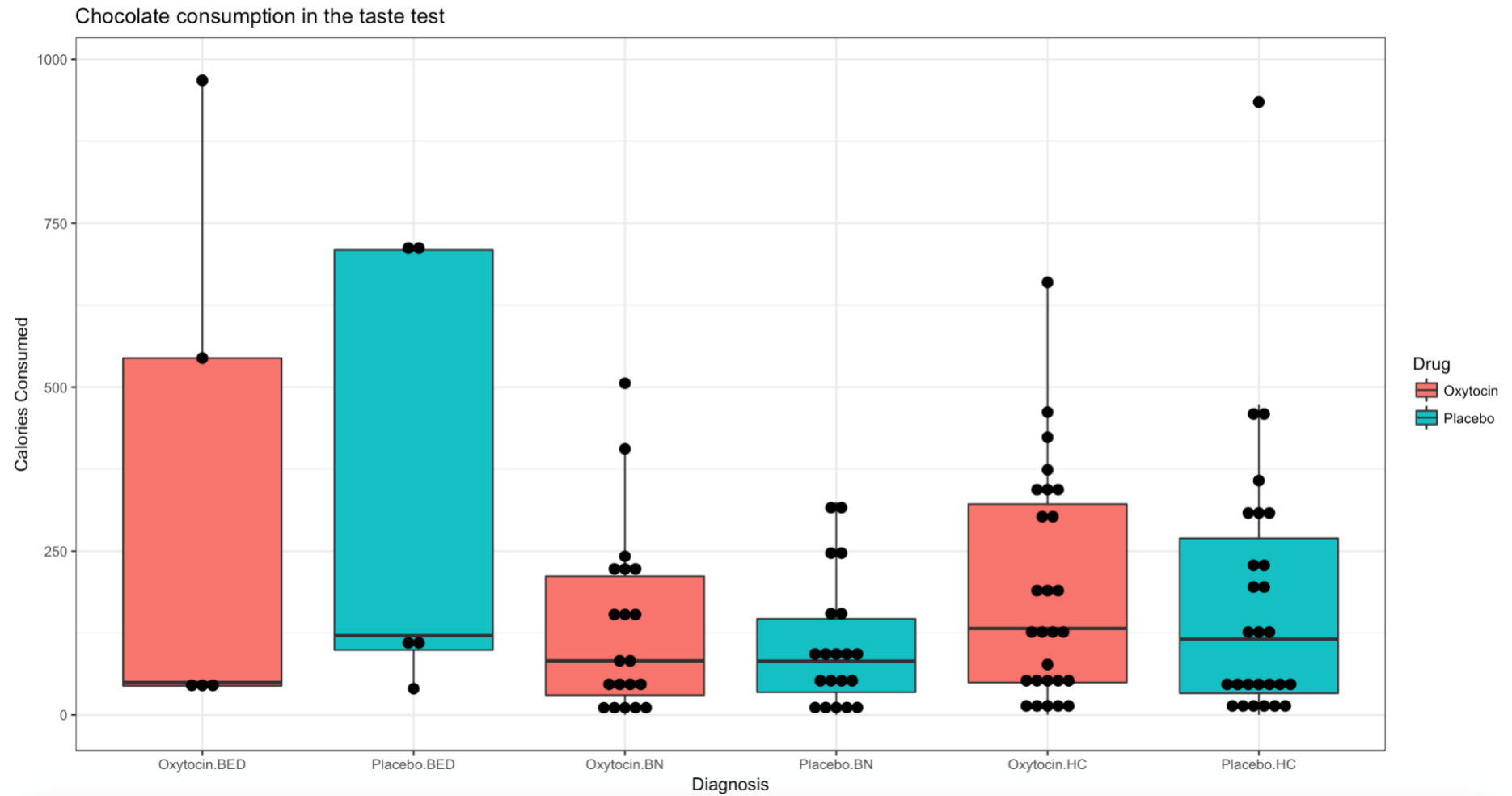
\*\*\*  $p < .001$



*Supplementary Figure 1.* Grape consumption in the taste test by participant diagnosis and drug condition. Note: BED = binge eating disorder, BN = bulimia nervosa; HC = healthy control.



*Supplementary Figure 2.* Crisp consumption in the taste test by participant diagnosis and drug condition. Note: BED = binge eating disorder, BN = bulimia nervosa; HC = healthy control.



*Supplementary Figure 3.* Chocolate consumption in the taste test by participant diagnosis and drug condition. Note: BED = binge eating disorder, BN = bulimia nervosa; HC = healthy control.