Differential Viral Dynamics by Sex and Body Mass Index During Acute SARS-CoV-2 Infection: Results from a Longitudinal Cohort Study
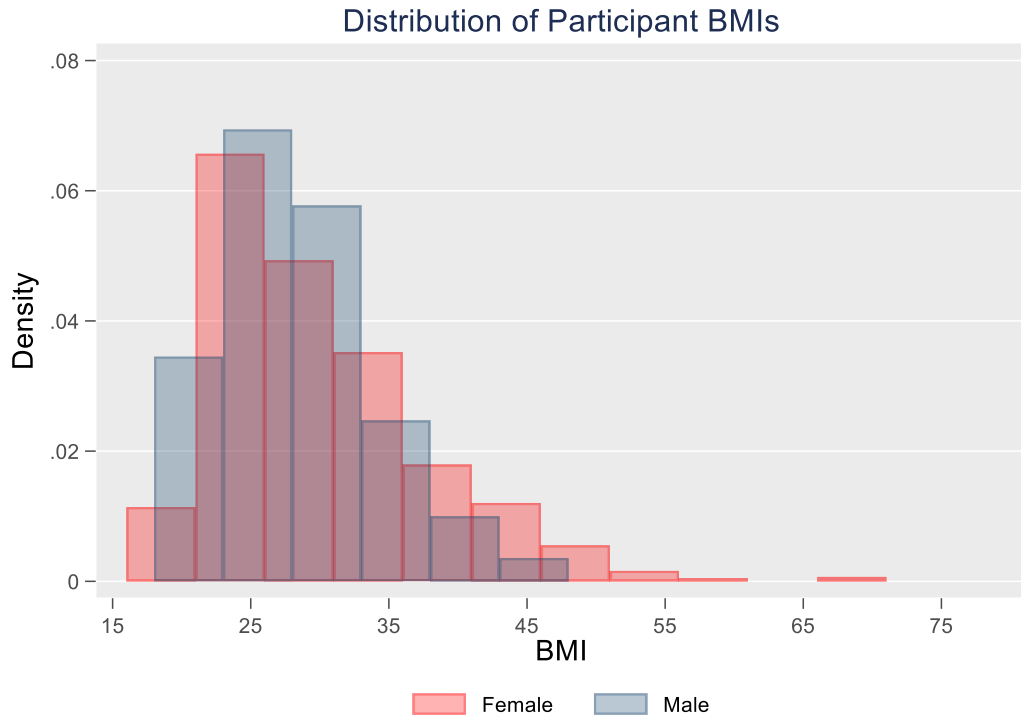
Supplemental Tables and Figures

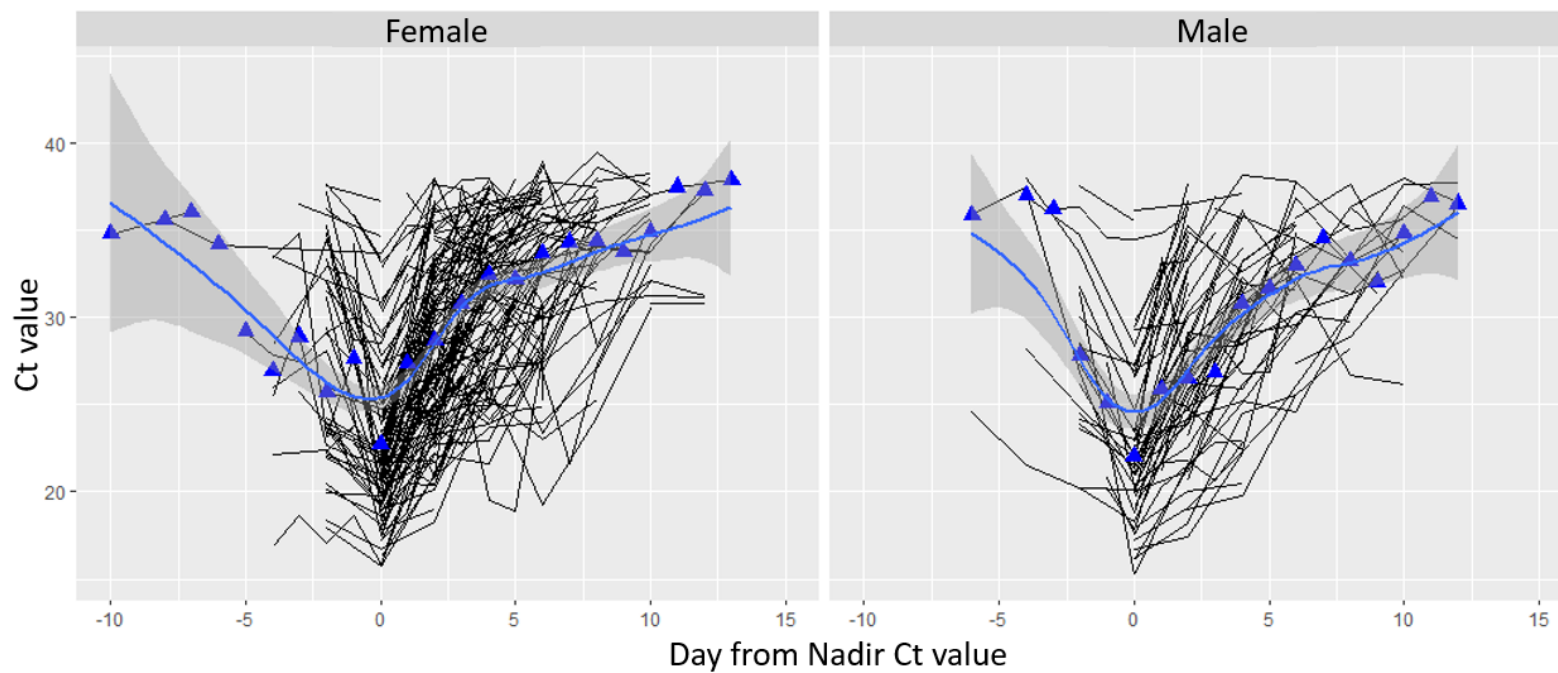**Contents**

Supplemental Figures

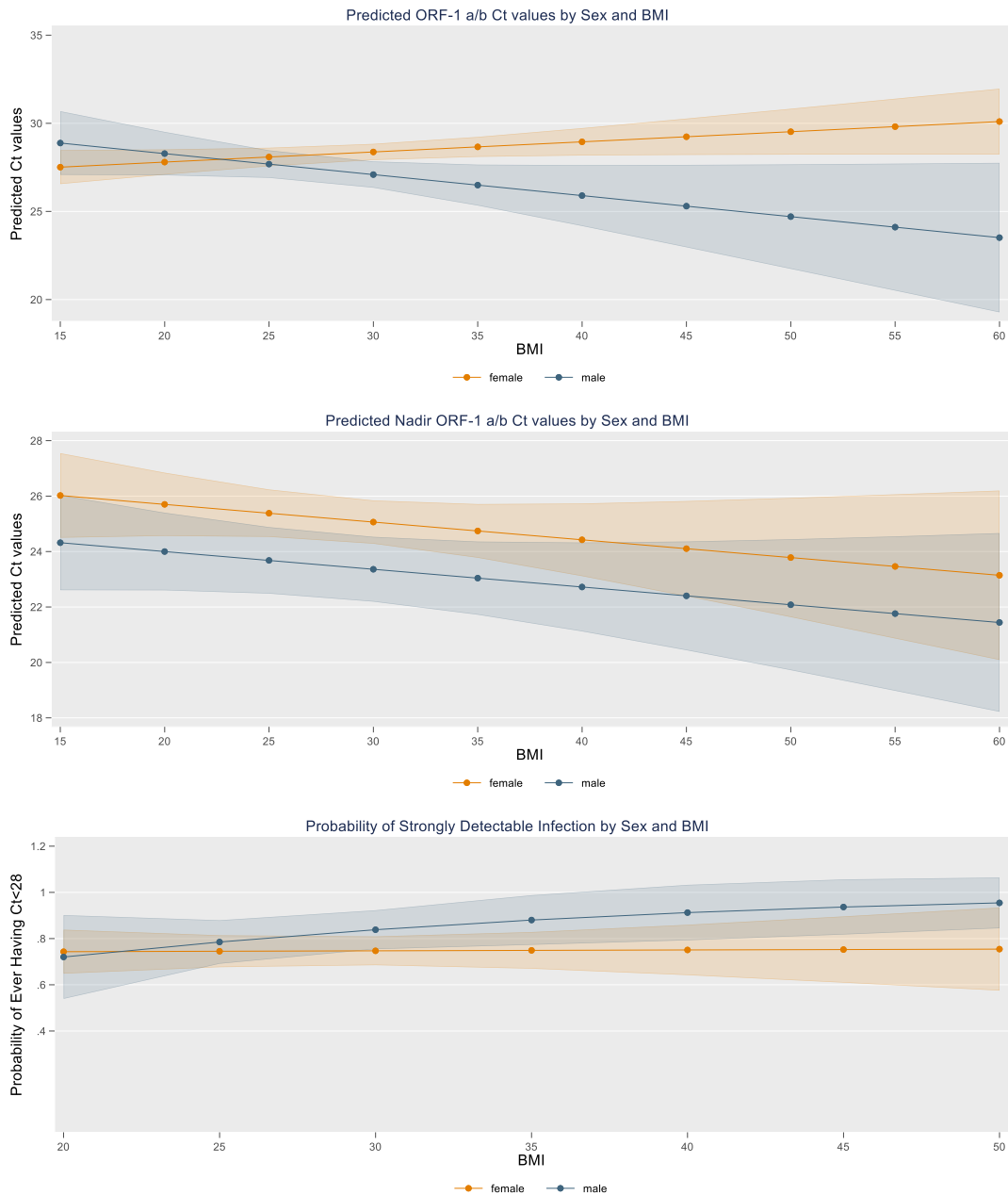**Supplemental Figure 1: Distribution of Participant Body Mass Indices by Sex**

Supplemental Figure 2: Correlation of Covariates by Sex

Supplemental Figure 3: Ct Values throughout SARS-CoV-2 Infection among Males and Females

Supplemental Figure 4: Predicted ORF-1 a/b Ct values, Nadir Ct Values, and Strongly Detectable Infections by Sex and BMI

Males are shown in dark blue, and females are shown in orange. The shaded error bar represents the 95% confidence interval. Supplemental Figure 2a shows predicted cycle threshold (Ct) values for the ORF-1 a/b gene among males and females by body mass index (BMI). Figure 2b shows predicted nadir cycle threshold (Ct) values for the ORF-1 a/b gene among males and females by body mass index (BMI). Figure 2c shows probability of a strongly detected infection among males and females by body mass index (BMI). Strongly detected infection is defined as at least one ORF-1 a/b cycle threshold value below or equal to 28.

Supplemental Figure 5: Actual vs Predicted Ct Values for Model 1 by Sex and BMI
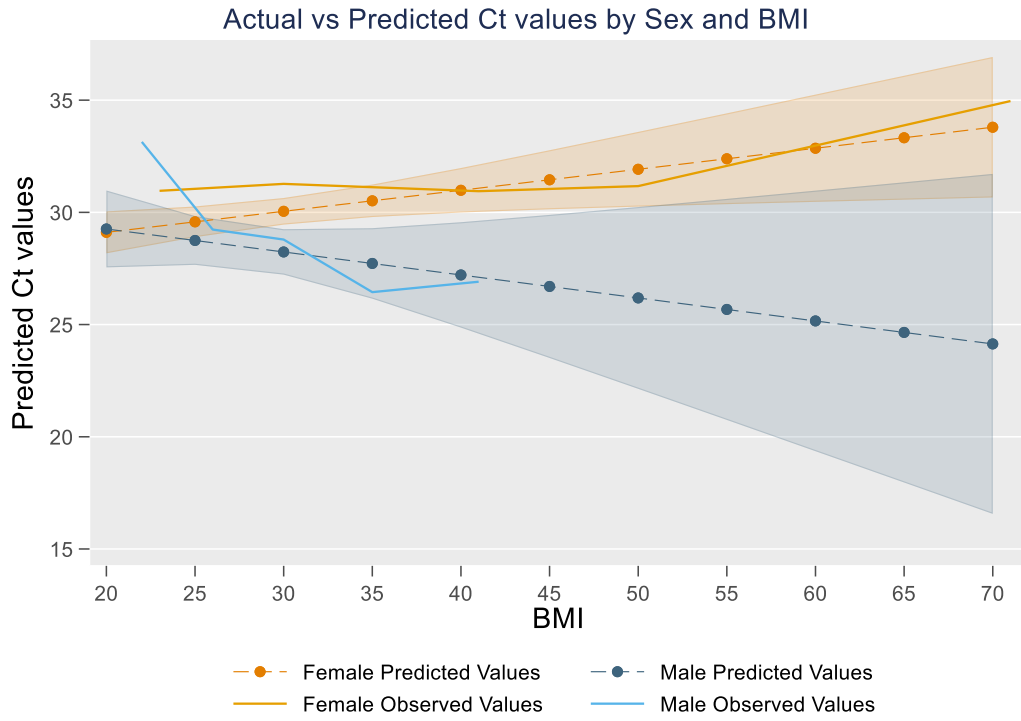
*Observed values plotted as mean values

Supplemental Tables

Supplemental Table 1: Estimated Coefficients for Sex and BMI in Bivariate Models

	Model 1: Ct Values by Sex and BMI		Model 2: Nadir Ct Values by Sex and BMI		Model 3: Odds of Highly Detectable Infection by Sex and BMI[1]	
	Estimate	95% Confidence Interval	Estimate	95% Confidence Interval	Estimate	95% Confidence Interval
BMI	-0.02	(-0.08 to 0.04)	-0.12	(-0.24 to -0.01)	1.02	(0.99 to 1.05)
Male Sex	-1.15	(-2.15 to -0.16)	-1.86	(-3.65 to -0.06)	1.72	(1.05 to 2.81)

[1]Estimates from model 3 are exponentiated.

Supplemental Table 2: Estimated Coefficients for All Variables in Adjusted Models

	Model 1: Ct Values by Sex and BMI[2]		Model 2: Nadir Ct Values by Sex and BMI[3]		Model 3: Odds of Highly Detectable Infection by Sex and BMI[1,3]	
	Estimate	95% Confidence Interval	Estimate	95% Confidence Interval	Estimate	95% Confidence Interval
Fixed Effects:						
Male sex	-1.49	-2.5 to -0.49	-2.65	-4.2 to -1.05	2.39	1.3 to 4.4
BMI	0.04	-0.02 to 0.10	-0.04	-0.14 to 0.07	1.00	0.96 to 1.04
Symptoms	-1.10	-1.3 to -0.91	-1.98	-2.4 to -1.6	2.17	1.8 to 2.7
Age Category						
45-64 years	-0.75	-1.8 to 0.34	-0.32	-2.0 to 1.4	0.82	0.42 to 1.6
65+ years	-1.14	-3.3 to 1.0	0.58	-2.7 to 3.9	0.78	0.24 to 2.6
Omicron variant	0.01	-1.2 to 1.2	-1.61	-3.5 to 0.27	2.96	1.4 to 6.4
Vaccinated	-0.38	-1.4 to 0.66	1.90	0.23 to 3.6	0.67	0.35 to 1.3
(Days from Nadir)^2	0.08	0.07 to 0.09	---	---		
Prior infection	0.96	-0.59 to 2.5	1.09	-1.5 to 3.7	0.55	0.22 to 1.4
Comorbidities						
1 comorbidity	-0.86	-2.0 to 0.24	-1.59	-3.4 to 0.22	1.14	0.59 to 2.2
2+ comorbidities	-0.38	-1.8 to 1.0	-1.84	-4.2 to 0.54	2.30	0.87 to 6.1
Constant	30.84	28.5 to 33.1	31.94	28.2 to 35.7	0.21	0.05 to 0.93
Random effects						
Study ID	13.85	11.1 to 17.3	---	---	---	---

[1]Estimates from model 3 are exponentiated.
[2]Model adjusted for sex, BMI, vaccination status, previous infections, number of symptoms, comorbidities, age, variant, and (day from nadir)^2

Supplemental Table 3: Estimated Coefficients for all Covariates in Adjusted Models with Interaction Terms

	Model 1: Ct Values by Sex and BMI[2]		Model 2: Nadir Ct Values by Sex and BMI[3]		Model 3: Odds of Highly Detectable Infection by Sex and BMI[1,3]	
	Estimate	**95% Confidence Interval**	**Estimate**	**95% Confidence Interval**	**Estimate**	**95% Confidence Interval**
Fixed Effects:						
Male sex	3.45	-1.4 to 8.3	1.45	-6.2 to 9.1	0.34	0.02 to 7.2
BMI	0.07	0.00 to 0.14	-0.01	-0.13 to 0.11	0.98	0.94 to 1.0
Sex*BMI	-0.18	-0.35 to -0.01	-0.15	-0.41 to 0.12	1.07	0.96 to 1.2
Symptoms	-1.11	-1.3 to -0.92	-1.99	-2.4 to -1.6	2.20	1.8 to 2.7
Age Category						
45-64 years	-0.73	-1.8 to 0.36	-0.27	-2.0 to 1.4	0.81	0.42 to 1.6
65+ years	-0.89	-3.1 to 1.3	0.74	-2.6 to 4.0	0.75	0.22 to 2.5
Omicron variant	0.09	-1.1 to 1.3	-1.56	-3.4 to 0.32	2.86	1.3 to 6.2
Vaccinated	-0.29	-1.3 to 0.74	1.95	0.28 to 3.6	0.64	0.33 to 1.2
(Days from Nadir)[2]	0.08	0.07 to 0.09				
Prior infection	0.85	-0.7 to 2.4	0.94	-1.7 to 3.6	0.59	0.23 to 1.5
Comorbidities						
1	-0.83	-1.9 to 0.27	-1.57	-3.4 to 0.23	1.11	0.56 to 2.2
2+	-0.32	-1.7 to 1.07	-1.69	-4.1 to 0.70	2.07	0.77 to 5.5
Constant	29.87	27.4 to 32.33	31.05	27.0 to 35.1	0.32	0.06 to 1.7
Random effects						
Study ID	13.64	10.9 to 17.1	---	---	---	---