**ANALYSIS: PD+PA vs. PD-PA vs. Controls**

**MINUTE VOLUME**

**Log-Linear Regression**

**Repeated Measures ANOVA**

| **Within Subjects Effects** | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Sphericity Correction** | | **Sum of Squares** | | **df** | | **Mean Square** | | **F** | | **p** | |
| Time |  | Greenhouse-Geisser |  | 80.703 | ᵃ | 4.790 | ᵃ | 16.850 | ᵃ | 2.609 | ᵃ | 0.028 | ᵃ |
| Time ✻ GroupF |  | Greenhouse-Geisser |  | 276.075 | ᵃ | 9.579 | ᵃ | 28.821 | ᵃ | 4.463 | ᵃ | < .001 | ᵃ |
| Residual |  | Greenhouse-Geisser |  | 1113.431 |  | 172.424 |  | 6.458 |  |  |  |  |  |
|  | | | | | | | | | | | | | |
| Note.  Type III Sum of Squares | | | | | | | | | | | | | |
| ᵃ Mauchly's test of sphericity indicates that the assumption of sphericity is violated (p < .05). | | | | | | | | | | | | | |

| **Between Subjects Effects** | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Sum of Squares** | | **df** | | **Mean Square** | | **F** | | **p** | |
| GroupF |  | 818.1 |  | 2 |  | 409.06 |  | 5.832 |  | 0.006 |  |
| Residual |  | 2525.0 |  | 36 |  | 70.14 |  |  |  |  |  |
|  | | | | | | | | | | | |
| *Note.*  Type III Sum of Squares | | | | | | | | | | | |

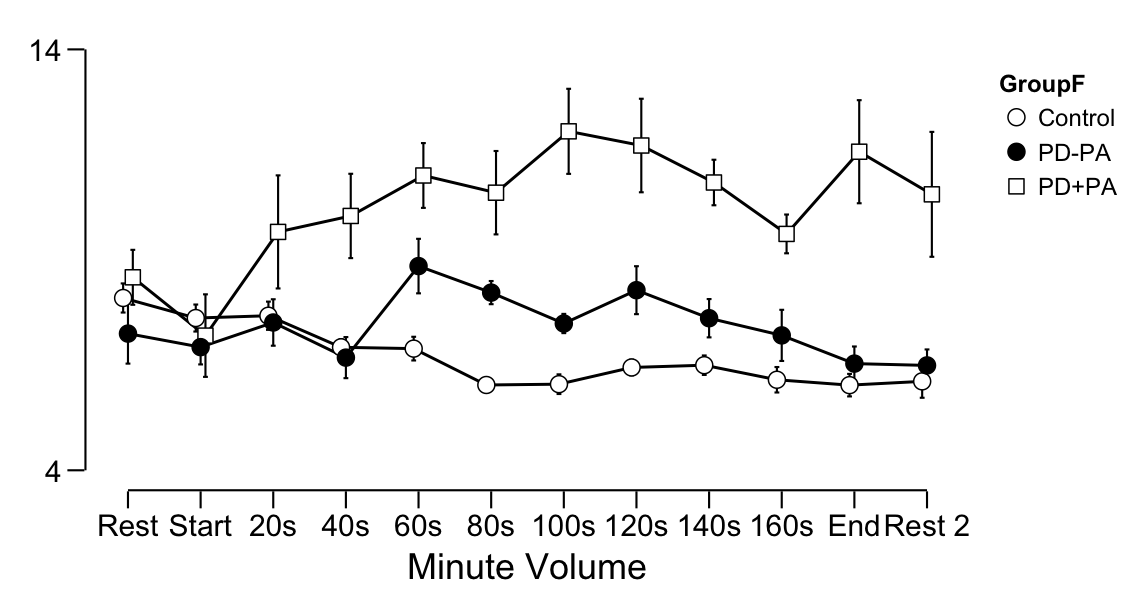
**Assumption Checks**

| **Test of Sphericity** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Mauchly's W** | | **p** | | **Greenhouse-Geisser ε** | | **Huynh-Feldt ε** | |
| Minute Volume |  | 0.004 |  | < .001 |  | 0.435 |  | 0.510 |  |
|  | | | | | | | | | |

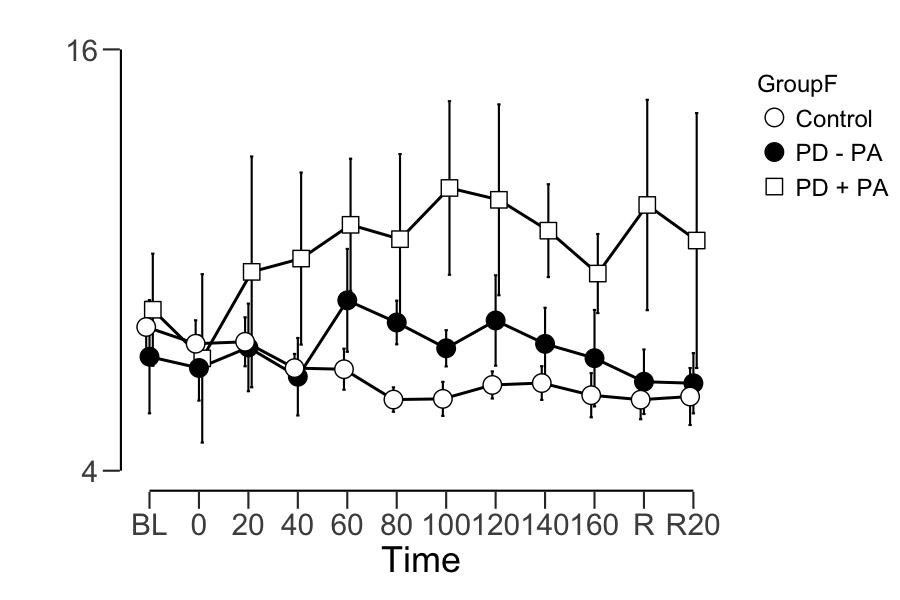
**Post Hoc Tests**

| **Post Hoc Comparisons - GroupF** | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | | **Mean Difference** | | **SE** | | **t** | | **p holm** | |
| Control |  | PD-PA |  | -0.713 |  | 0.922 |  | -0.773 |  | 0.445 |  |
|  |  | PD+PA |  | -3.579 |  | 1.049 |  | -3.411 |  | 0.005 |  |
| PD-PA |  | PD+PA |  | -2.866 |  | 1.191 |  | -2.406 |  | 0.043 |  |
|  | | | | | | | | | | | |

**Descriptives Plot (SE)**



**Descriptives Plot (95% CI)**



**RESPIRATORY RATE**

**Results**

**Repeated Measures ANOVA**

| **Within Subjects Effects** | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Sphericity Correction** | | **Sum of Squares** | | **df** | | **Mean Square** | | **F** | | **p** | |
| Time |  | Greenhouse-Geisser |  | 493.839 | ᵃ | 5.337 | ᵃ | 92.524 | ᵃ | 3.468 | ᵃ | 0.004 | ᵃ |
| Time ✻ GroupF |  | Greenhouse-Geisser |  | 673.234 | ᵃ | 10.675 | ᵃ | 63.067 | ᵃ | 2.364 | ᵃ | 0.010 | ᵃ |
| Residual |  | Greenhouse-Geisser |  | 5126.741 |  | 192.147 |  | 26.681 |  |  |  |  |  |
|  | | | | | | | | | | | | | |
| Note.  Type III Sum of Squares | | | | | | | | | | | | | |
| ᵃ Mauchly's test of sphericity indicates that the assumption of sphericity is violated (p < .05). | | | | | | | | | | | | | |

| **Between Subjects Effects** | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Sum of Squares** | | **df** | | **Mean Square** | | **F** | | **p** | |
| GroupF |  | 1716 |  | 2 |  | 857.9 |  | 2.716 |  | 0.080 |  |
| Residual |  | 11371 |  | 36 |  | 315.9 |  |  |  |  |  |
|  | | | | | | | | | | | |
| *Note.*  Type III Sum of Squares | | | | | | | | | | | |

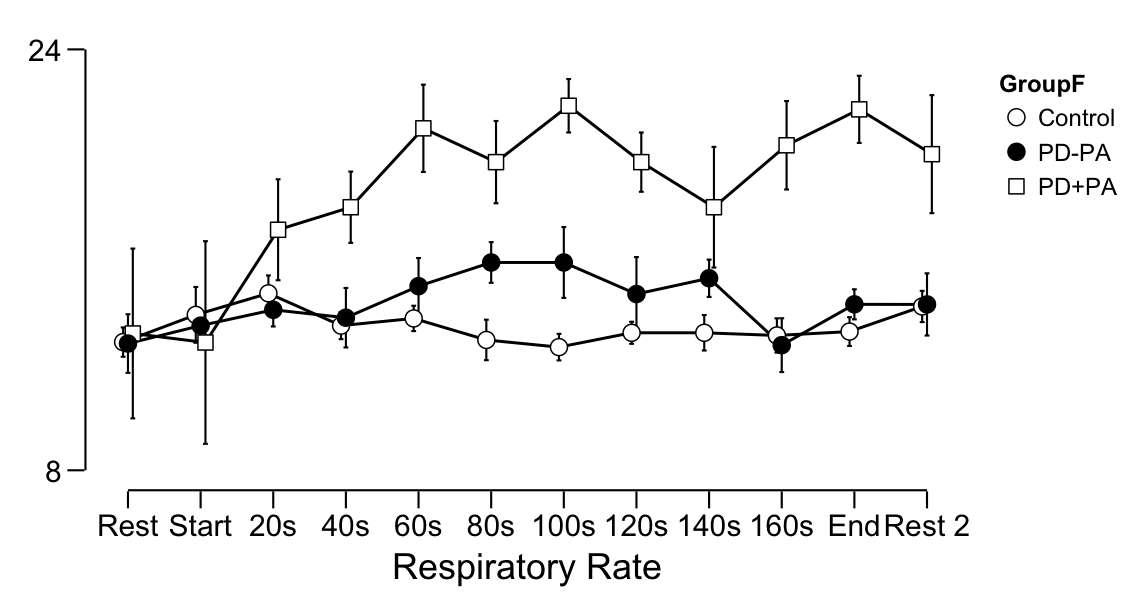
**Assumption Checks**

| **Test of Sphericity** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Mauchly's W** | | **p** | | **Greenhouse-Geisser ε** | | **Huynh-Feldt ε** | |
| Respiratory Rate |  | 0.014 |  | < .001 |  | 0.485 |  | 0.580 |  |
|  | | | | | | | | | |

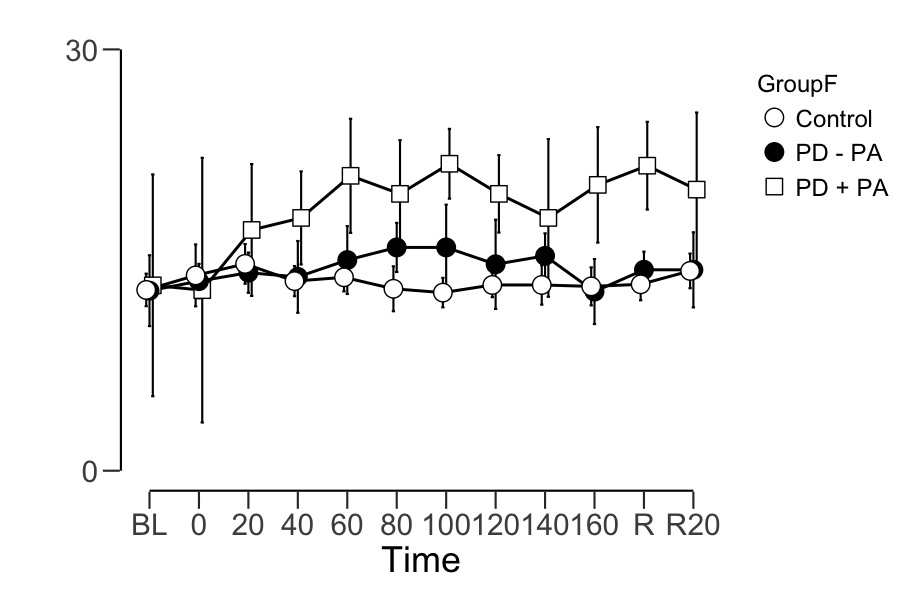
**Post Hoc Tests**

| **Post Hoc Comparisons - GroupF** | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | | **Mean Difference** | | **SE** | | **t** | | **p holm** | |
| Control |  | PD-PA |  | -0.907 |  | 1.957 |  | -0.464 |  | 0.646 |  |
|  |  | PD+PA |  | -5.173 |  | 2.226 |  | -2.324 |  | 0.078 |  |
| PD-PA |  | PD+PA |  | -4.266 |  | 2.528 |  | -1.687 |  | 0.200 |  |
|  | | | | | | | | | | | |

**Descriptives Plot (SE)**



**Descriptives Plot (95% CI)**



**TIDAL VOLUME**

**Repeated Measures ANOVA**

| **Within Subjects Effects** | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Sphericity Correction** | | **Sum of Squares** | | **df** | | **Mean Square** | | **F** | | **p** | |
| Time |  | Greenhouse-Geisser |  | 0.433 | ᵃ | 6.215 | ᵃ | 0.070 | ᵃ | 1.652 | ᵃ | 0.131 | ᵃ |
| Time ✻ GroupF |  | Greenhouse-Geisser |  | 0.471 | ᵃ | 12.430 | ᵃ | 0.038 | ᵃ | 0.898 | ᵃ | 0.552 | ᵃ |
| Residual |  | Greenhouse-Geisser |  | 9.442 |  | 223.742 |  | 0.042 |  |  |  |  |  |
|  | | | | | | | | | | | | | |
| Note.  Type III Sum of Squares | | | | | | | | | | | | | |
| ᵃ Mauchly's test of sphericity indicates that the assumption of sphericity is violated (p < .05). | | | | | | | | | | | | | |

| **Between Subjects Effects** | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Sum of Squares** | | **df** | | **Mean Square** | | **F** | | **p** | |
| GroupF |  | 0.590 |  | 2 |  | 0.295 |  | 0.411 |  | 0.666 |  |
| Residual |  | 25.853 |  | 36 |  | 0.718 |  |  |  |  |  |
|  | | | | | | | | | | | |
| *Note.*  Type III Sum of Squares | | | | | | | | | | | |

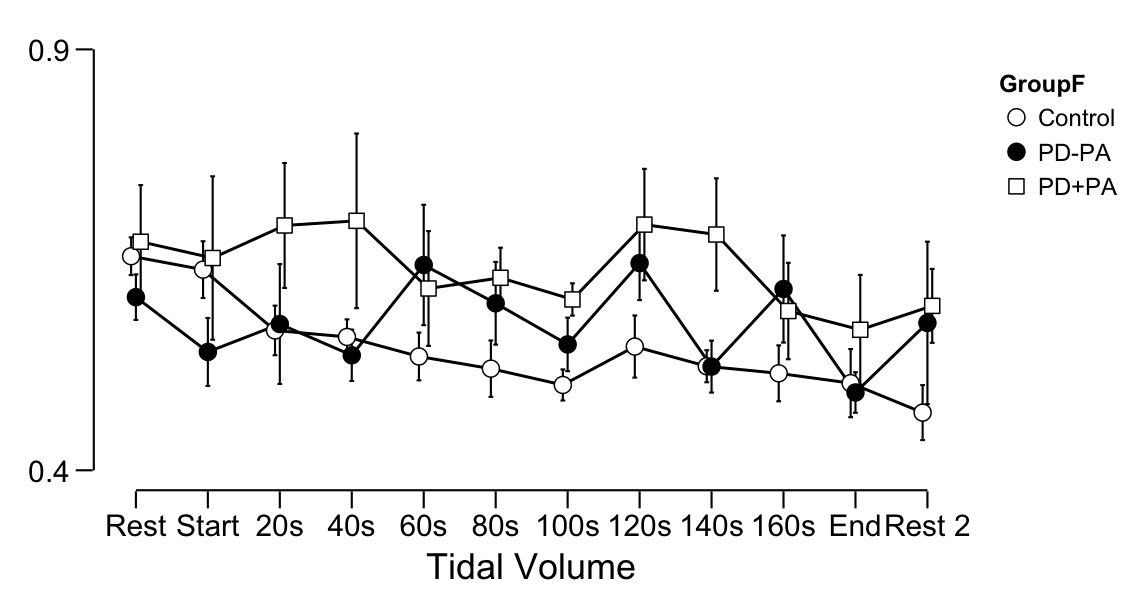
**Assumption Checks**

| **Test of Sphericity** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Mauchly's W** | | **p** | | **Greenhouse-Geisser ε** | | **Huynh-Feldt ε** | |
| Tidal Volume |  | 0.011 |  | < .001 |  | 0.565 |  | 0.696 |  |
|  | | | | | | | | | |

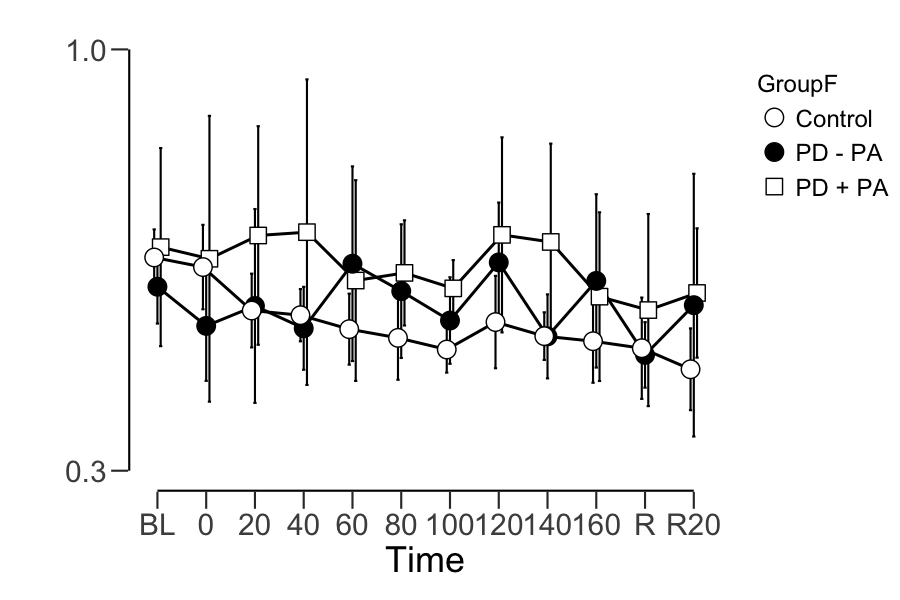
**Post Hoc Tests**

| **Post Hoc Comparisons - GroupF** | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | | **Mean Difference** | | **SE** | | **t** | | **p holm** | |
| Control |  | PD-PA |  | -0.031 |  | 0.093 |  | -0.329 |  | 1.000 |  |
|  |  | PD+PA |  | -0.096 |  | 0.106 |  | -0.902 |  | 1.000 |  |
| PD-PA |  | PD+PA |  | -0.065 |  | 0.121 |  | -0.540 |  | 1.000 |  |
|  | | | | | | | | | | | |

**Descriptives Plot (SE)**



**Descriptives Plot (95% CI)**



**RSSQ RESPIRATORY VOLUME**

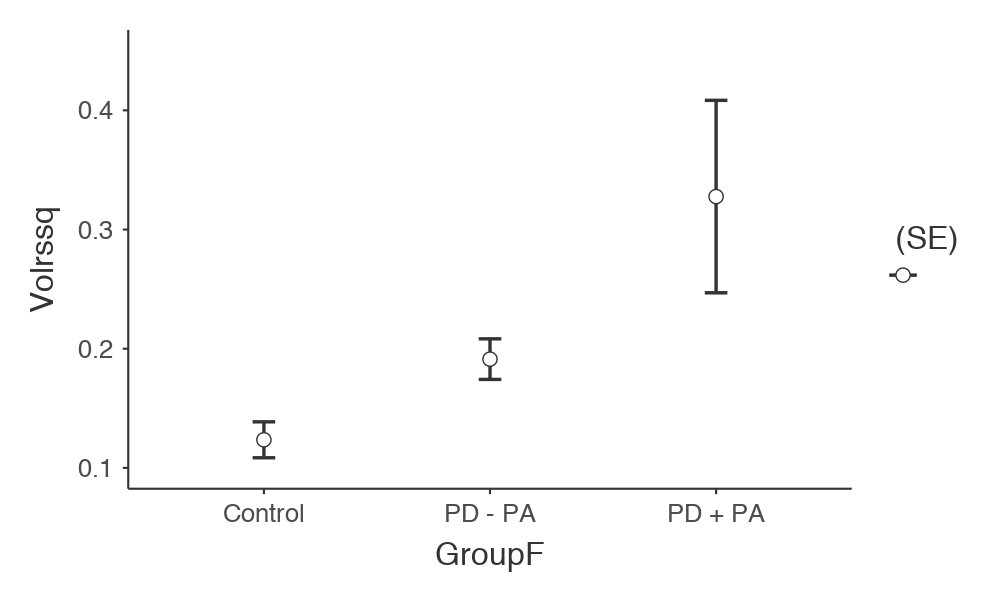
**Rssq Vol resp by group**

| **ANOVA** | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | | **Sum of Squares** | | **df** | | **Mean Square** | | **F** | | **p** | |
| GroupF |  | 0.224 |  | 2 |  | 0.1118 |  | 9.94 |  | < .001 |  |
| Residuals |  | 0.405 |  | 36 |  | 0.0112 |  |  |  |  |  |
|  | | | | | | | | | | | |

**Post Hoc Tests**

| **Post Hoc Comparisons - GroupF** | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Comparison** | | | | | |  | | | | | | | | | |
| **GroupF** | |  | | **GroupF** | | **Mean Difference** | | **SE** | | **df** | | **t** | | **ptukey** | |
| Control |  | - |  | PD - PA |  | -0.0677 |  | 0.0404 |  | 36.0 |  | -1.67 |  | 0.229 |  |
|  |  | - |  | PD + PA |  | -0.2041 |  | 0.0460 |  | 36.0 |  | -4.43 |  | < .001 |  |
| PD - PA |  | - |  | PD + PA |  | -0.1364 |  | 0.0523 |  | 36.0 |  | -2.61 |  | 0.034 |  |
|  | | | | | | | | | | | | | | | |

**Descriptive Plot (SE)**



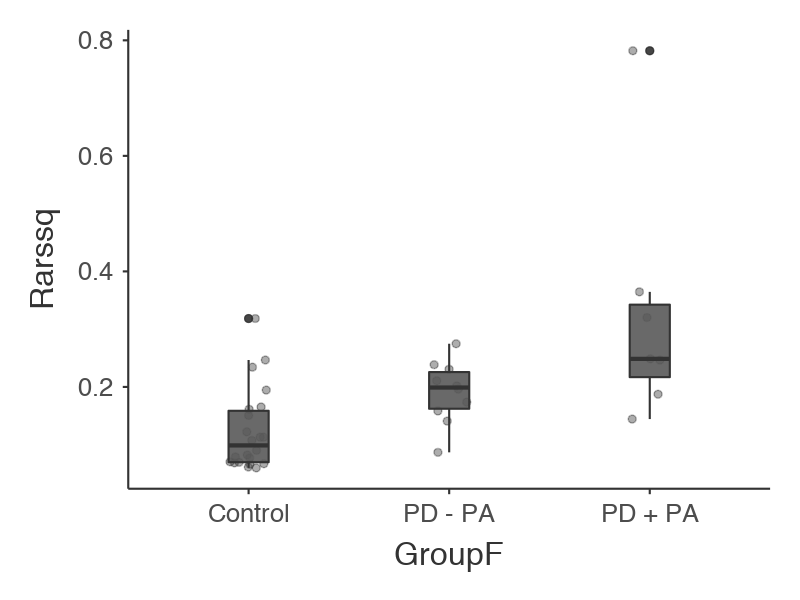
**RSSQ RESPIRATORY AMPLITUDE (RA) AND PERIOD (RP)**

| **Kruskal-Wallis** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  | | **χ²** | | **df** | | **p** | |
| RArssq |  | 14.91 |  | 2 |  | < .001 |  |
| RPrssq |  | 7.72 |  | 2 |  | 0.021 |  |
|  | | | | | | | |

## Dwass-Steel-Critchlow-Fligner pairwise comparisons

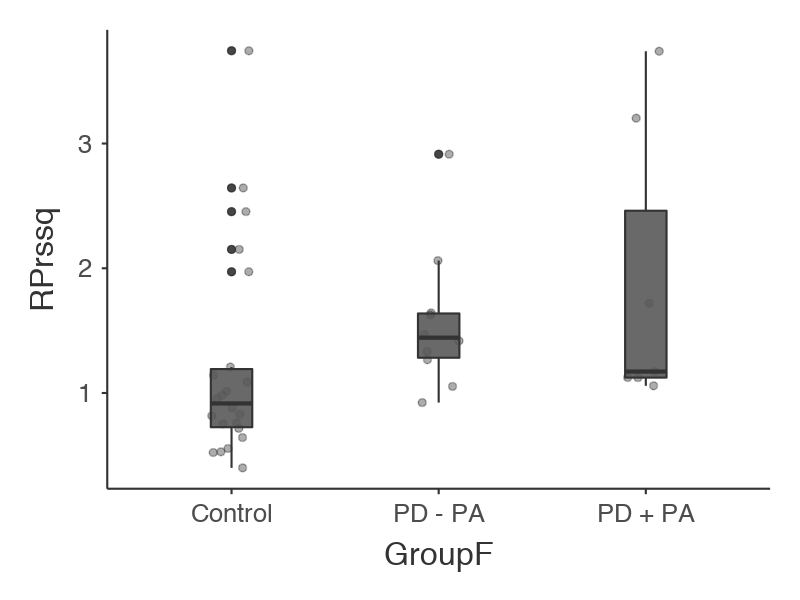
| **Pairwise comparisons - RArssq** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  | |  | | **W** | | **p** | |
| Control |  | PD - PA |  | 3.80 |  | 0.007 |  |
| Control |  | PD + PA |  | 4.54 |  | 0.001 |  |
| PD - PA |  | PD + PA |  | 2.62 |  | 0.064 |  |
|  | | | | | | | |

**PLOT**



| **Pairwise comparisons - RPrssq** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  | |  | | **W** | | **p** | |
| Control |  | PD - PA |  | 3.220 |  | 0.023 |  |
| Control |  | PD + PA |  | 3.027 |  | 0.032 |  |
| PD - PA |  | PD + PA |  | 0.138 |  | 0.922 |  |
|  | | | | | | | |

**PLOT**



**HEART RATE**

**Results**

**Repeated Measures ANOVA**

| **Within Subjects Effects** | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Sphericity Correction** | | **Sum of Squares** | | **df** | | **Mean Square** | | **F** | | **p** | |
| Time |  | Greenhouse-Geisser |  | 731.601 | ᵃ | 3.229 | ᵃ | 226.567 | ᵃ | 4.429 | ᵃ | 0.004 | ᵃ |
| Time ✻ GroupF |  | Greenhouse-Geisser |  | 414.607 | ᵃ | 6.458 | ᵃ | 64.199 | ᵃ | 1.255 | ᵃ | 0.281 | ᵃ |
| Residual |  | Greenhouse-Geisser |  | 5946.079 |  | 116.246 |  | 51.151 |  |  |  |  |  |
|  | | | | | | | | | | | | | |
| Note.  Type III Sum of Squares | | | | | | | | | | | | | |
| ᵃ Mauchly's test of sphericity indicates that the assumption of sphericity is violated (p < .05). | | | | | | | | | | | | | |

| **Between Subjects Effects** | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Sum of Squares** | | **df** | | **Mean Square** | | **F** | | **p** | |
| GroupF |  | 2103.563 |  | 2 |  | 1051.781 |  | 0.495 |  | 0.614 |  |
| Residual |  | 76465.579 |  | 36 |  | 2124.044 |  |  |  |  |  |
|  | | | | | | | | | | | |
| Note.  Type III Sum of Squares | | | | | | | | | | | |

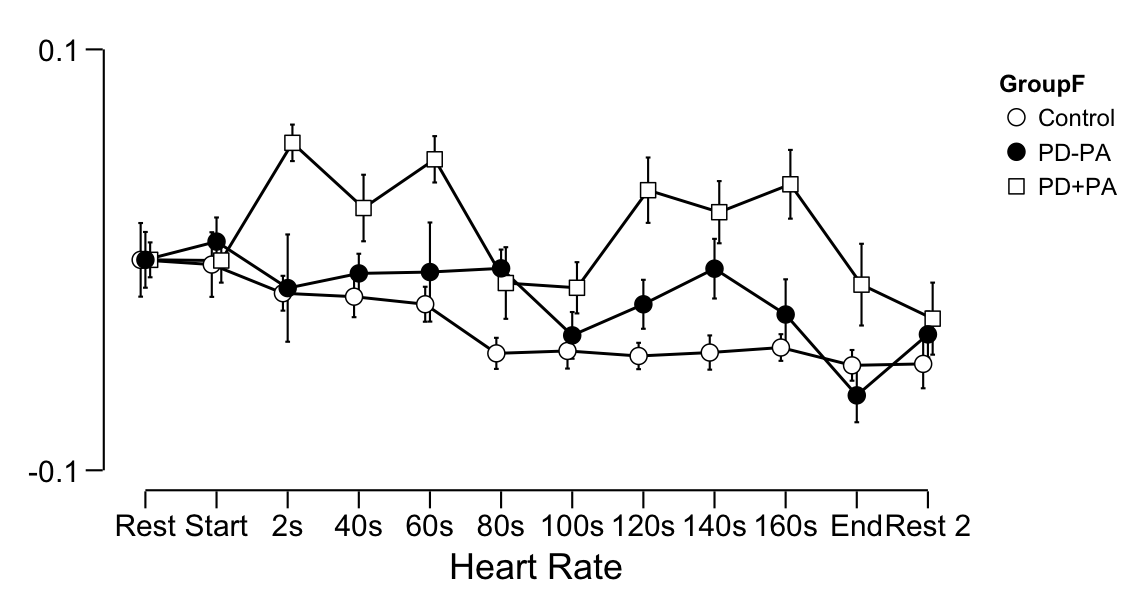
**Assumption Checks**

| **Test of Sphericity** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Mauchly's W** | | **p** | | **Greenhouse-Geisser ε** | | **Huynh-Feldt ε** | |
| Heart Rate |  | 6.550e -4 |  | < .001 |  | 0.362 |  | 0.413 |  |
|  | | | | | | | | | |

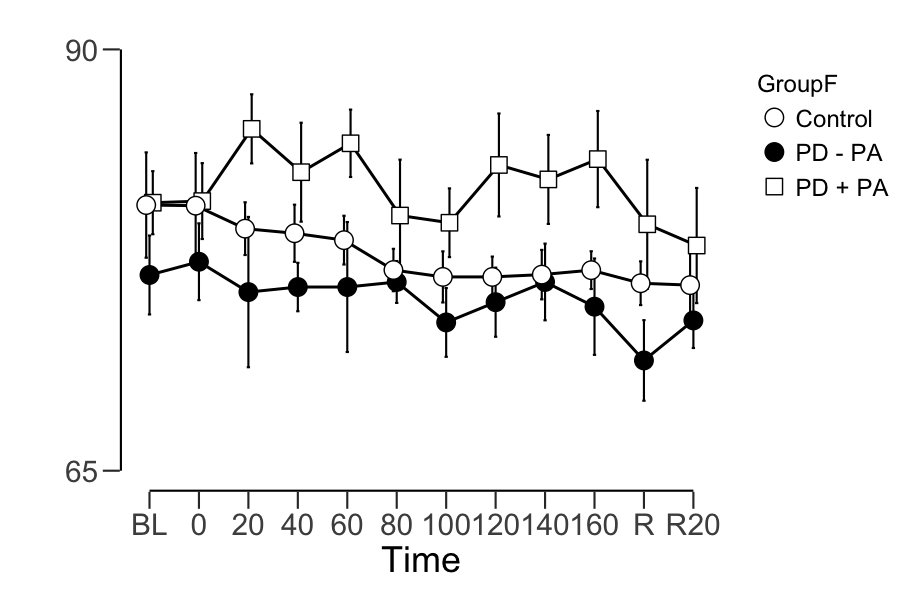
**Post Hoc Tests**

| **Post Hoc Comparisons - GroupF** | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | | **Mean Difference** | | **SE** | | **t** | | **p holm** | |
| Control |  | PD-PA |  | -0.014 |  | 0.024 |  | -0.573 |  | 0.685 |  |
|  |  | PD+PA |  | -0.044 |  | 0.028 |  | -1.596 |  | 0.357 |  |
| PD-PA |  | PD+PA |  | -0.030 |  | 0.031 |  | -0.962 |  | 0.685 |  |
|  | | | | | | | | | | | |

**Descriptives Plot (SE)**



#### Descriptives Plot (95% IC)



**ELECTRODERMAL RESPONSE MAGNITUDE (ERM)**

**Results**

**Repeated Measures ANOVA**

| **Within Subjects Effects** | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Sphericity Correction** | | **Sum of Squares** | | **df** | | **Mean Square** | | **F** | | **p** | |
| Time |  | Greenhouse-Geisser |  | 21.675 | ᵃ | 4.388 | ᵃ | 4.939 | ᵃ | 6.518 | ᵃ | < .001 | ᵃ |
| Time ✻ GroupF |  | Greenhouse-Geisser |  | 12.767 | ᵃ | 8.777 | ᵃ | 1.455 | ᵃ | 1.920 | ᵃ | 0.054 | ᵃ |
| Residual |  | Greenhouse-Geisser |  | 119.719 |  | 157.983 |  | 0.758 |  |  |  |  |  |
|  | | | | | | | | | | | | | |
| *Note.*  Type III Sum of Squares | | | | | | | | | | | | | |
| ᵃ Mauchly's test of sphericity indicates that the assumption of sphericity is violated (p < .05). | | | | | | | | | | | | | |

| **Between Subjects Effects** | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Sum of Squares** | | **df** | | **Mean Square** | | **F** | | **p** | |
| GroupF |  | 17.110 |  | 2 |  | 8.555 |  | 3.202 |  | 0.053 |  |
| Residual |  | 96.200 |  | 36 |  | 2.672 |  |  |  |  |  |
|  | | | | | | | | | | | |
| *Note.*  Type III Sum of Squares | | | | | | | | | | | |

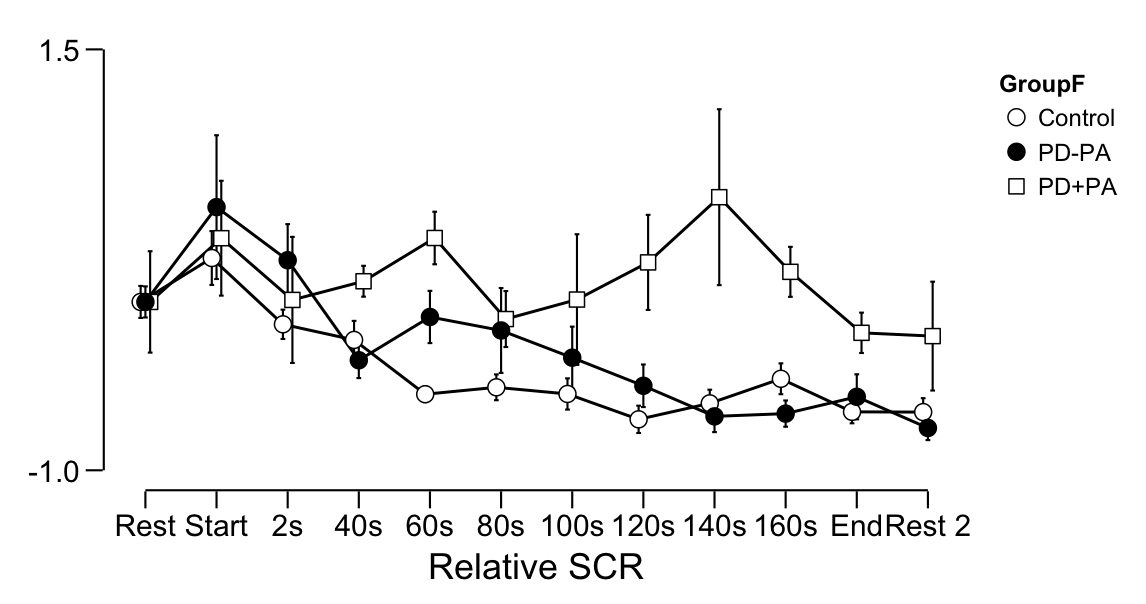
**Assumption Checks**

| **Test of Sphericity** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Mauchly's W** | | **p** | | **Greenhouse-Geisser ε** | | **Huynh-Feldt ε** | |
| Relative SCR |  | 6.355e -4 |  | < .001 |  | 0.399 |  | 0.461 |  |
|  | | | | | | | | | |

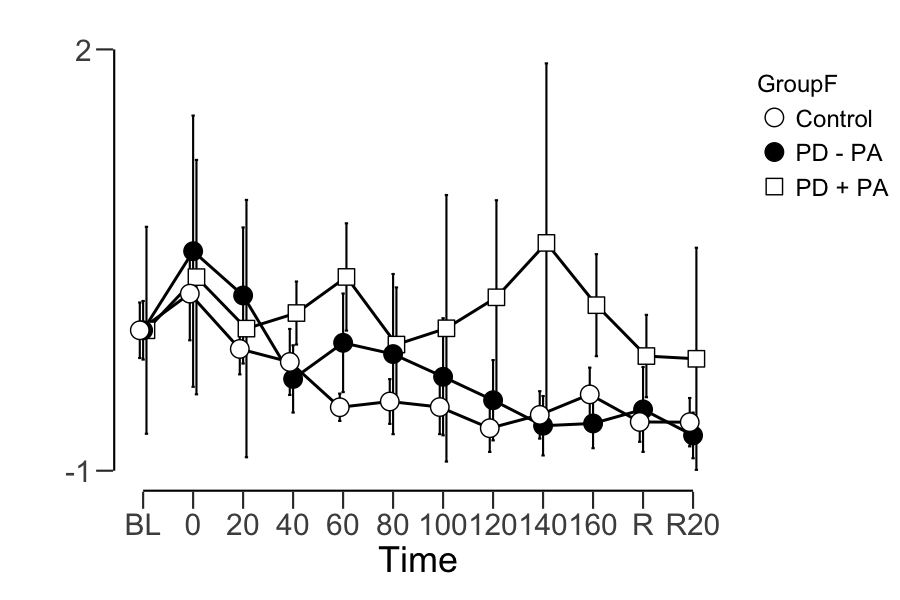
**Post Hoc Tests**

| **Post Hoc Comparisons - GroupF** | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | | **Mean Difference** | | **SE** | | **t** | | **p holm** | |
| Control |  | PD-PA |  | -0.124 |  | 0.180 |  | -0.687 |  | 0.496 |  |
|  |  | PD+PA |  | -0.518 |  | 0.205 |  | -2.530 |  | 0.048 |  |
| PD-PA |  | PD+PA |  | -0.394 |  | 0.233 |  | -1.696 |  | 0.197 |  |
|  | | | | | | | | | | | |

**Descriptives Plot (SE)**



**Descriptives Plot (95% CI)**



**SKIN CONDUCTANCE LEVEL - SCL**

**Repeated Measures ANOVA**

| **Within Subjects Effects** | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Sphericity Correction** | | **Sum of Squares** | | **df** | | **Mean Square** | | **F** | | **p** | |
| Time |  | Greenhouse-Geisser |  | 0.968 | ᵃ | 1.830 | ᵃ | 0.529 | ᵃ | 21.532 | ᵃ | < .001 | ᵃ |
| Time ✻ GroupF |  | Greenhouse-Geisser |  | 0.336 | ᵃ | 3.660 | ᵃ | 0.092 | ᵃ | 3.737 | ᵃ | 0.010 | ᵃ |
| Residual |  | Greenhouse-Geisser |  | 1.618 |  | 65.877 |  | 0.025 |  |  |  |  |  |
|  | | | | | | | | | | | | | |
| *Note.*  Type III Sum of Squares | | | | | | | | | | | | | |
| ᵃ Mauchly's test of sphericity indicates that the assumption of sphericity is violated (p < .05). | | | | | | | | | | | | | |

| **Between Subjects Effects** | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Sum of Squares** | | **df** | | **Mean Square** | | **F** | | **p** | |
| GroupF |  | 1.172 |  | 2 |  | 0.586 |  | 5.550 |  | 0.008 |  |
| Residual |  | 3.801 |  | 36 |  | 0.106 |  |  |  |  |  |
|  | | | | | | | | | | | |
| *Note.*  Type III Sum of Squares | | | | | | | | | | | |

**Assumption Checks**

| **Test of Sphericity** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Mauchly's W** | | **p** | | **Greenhouse-Geisser ε** | | **Huynh-Feldt ε** | |
| Time |  | 3.780e -12 |  | < .001 |  | 0.166 |  | 0.175 |  |
|  | | | | | | | | | |

**Descriptives Plot (95% CI)**

