Hypothesis Testing for NSF Office Stress Project - Reduced Sensor Set

Below are the test results for each of the Conditions that had n >= 7 subjects. Statistical testing can have three different possible outcomes: the data is already normal (t-test), the logarithm of the data is normal (t-test with log data), or the data is NOT normal (Wilcoxon test).

For notation, let:

WB-RB = Writing Baseline - Resting Baseline
SC-RB = Stress Condition - Resting Baseline
SC-WB = Stress Condition - Writing Baseline
DT-RB = Dual Task - Resting Baseline
DT-WB = Dual Task - Writing Baseline
DT-SC = Dual Task - Stress Condition
P-RB = Presentation - Resting Baseline
P-WB = Presentation - Writing Baseline
P-SC = Presentation - Stress Condition
P-DT = Presentation - Dual Task

For each of the graphs, let:

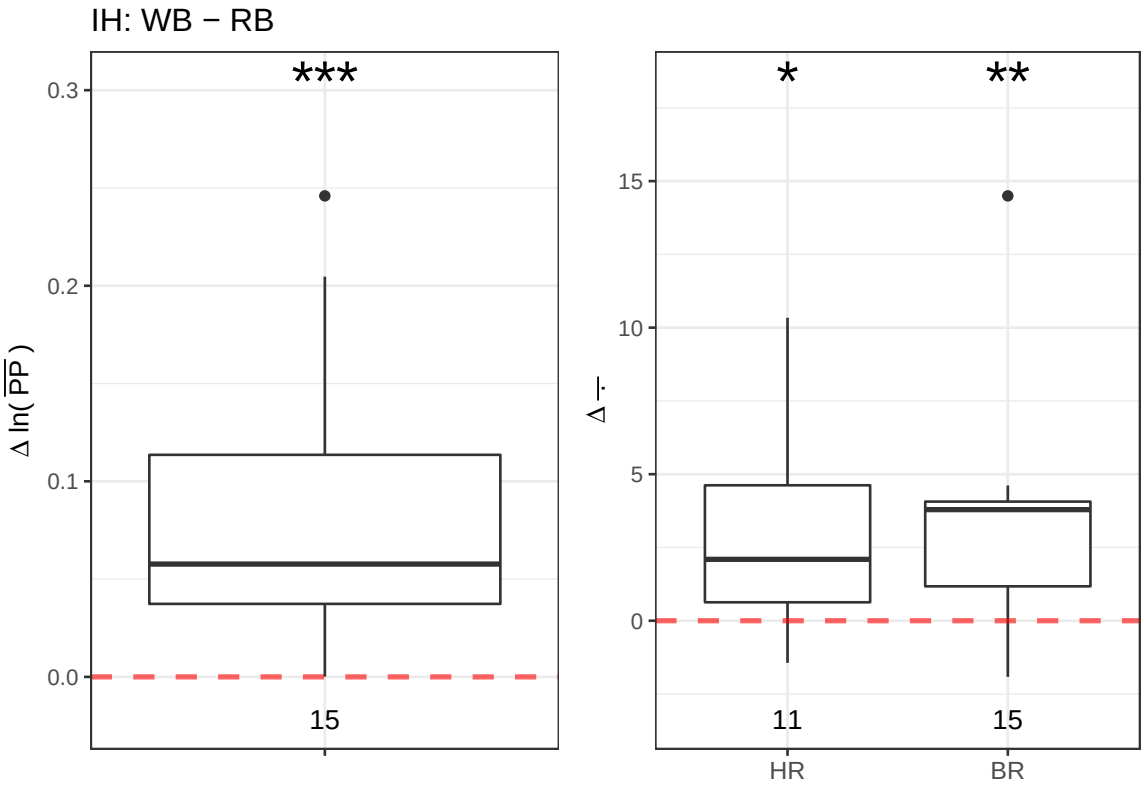
* = 0.01 < p <= 0.05
** = 0.001 < p <= 0.01
*** = p <= 0.001
? = Did not run statistical test ($n < 7$)

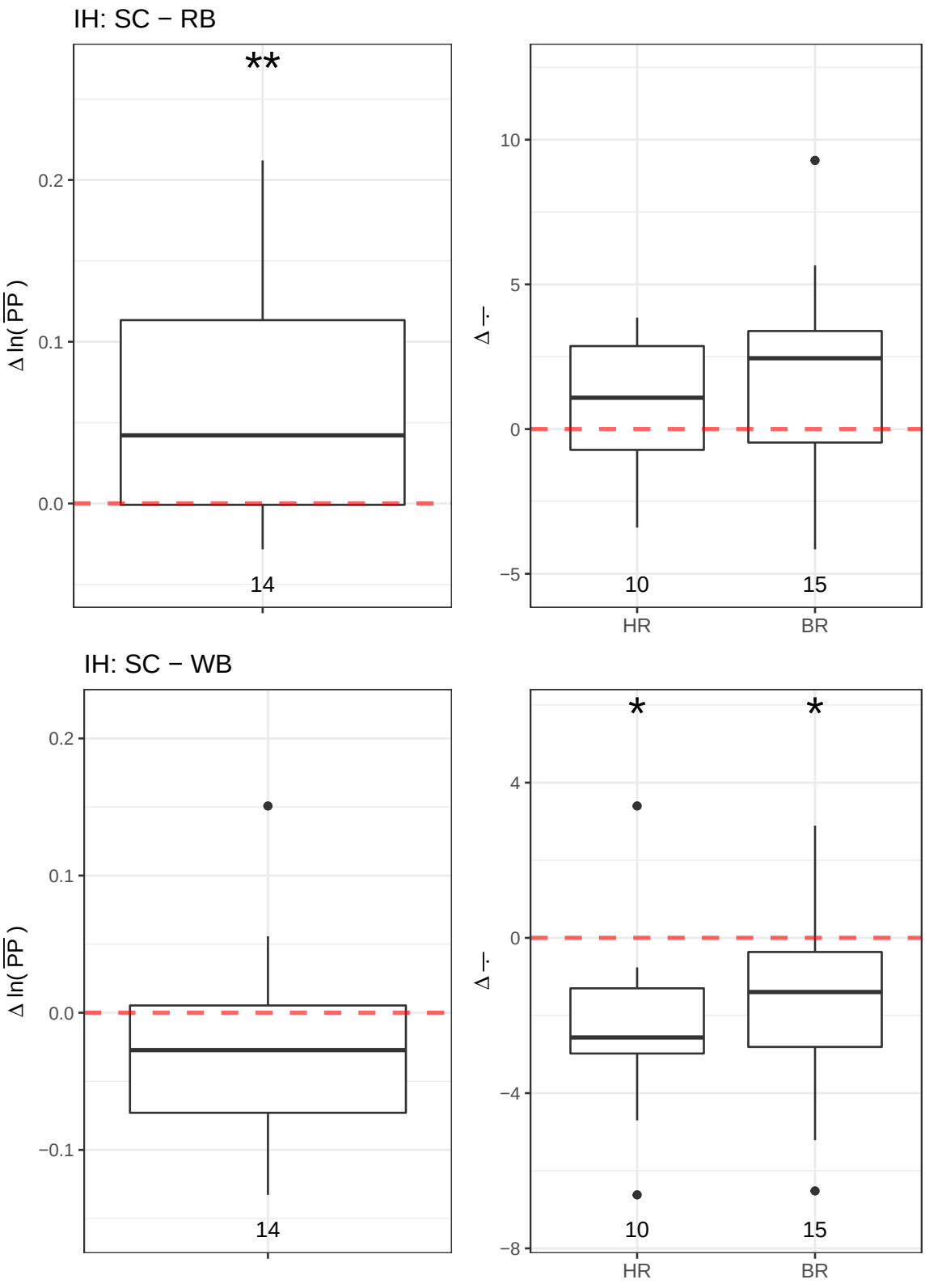
Differences in **Reduced Sensor Set**:

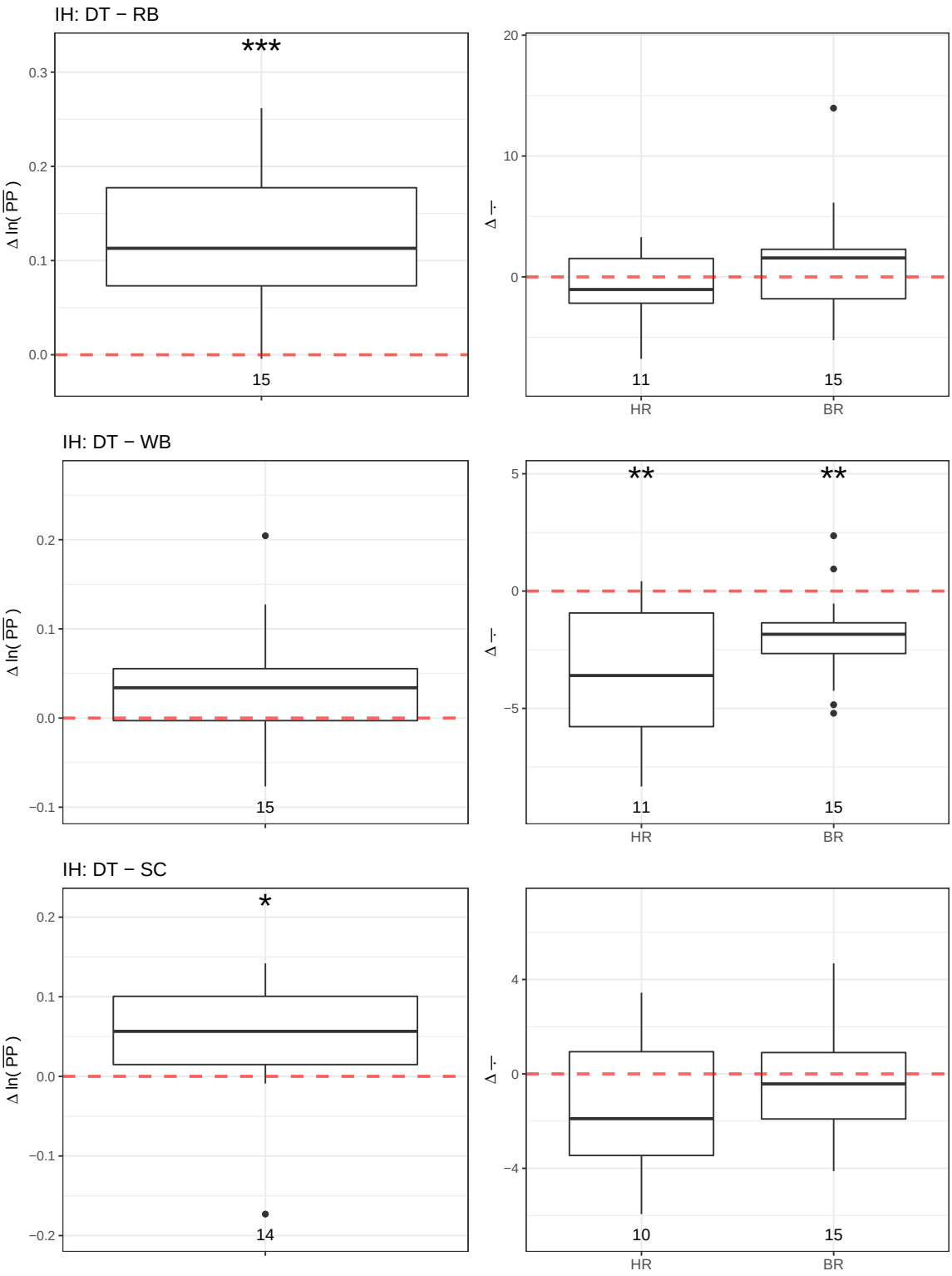
- Signals for `D.EDA`, `N.EDA`, `D.HR`, and `N.HR` and removed completely.
- `Breathing Rate (BR)` measurements for the `Presentation` session are removed completely.
- Easier on the eyes.

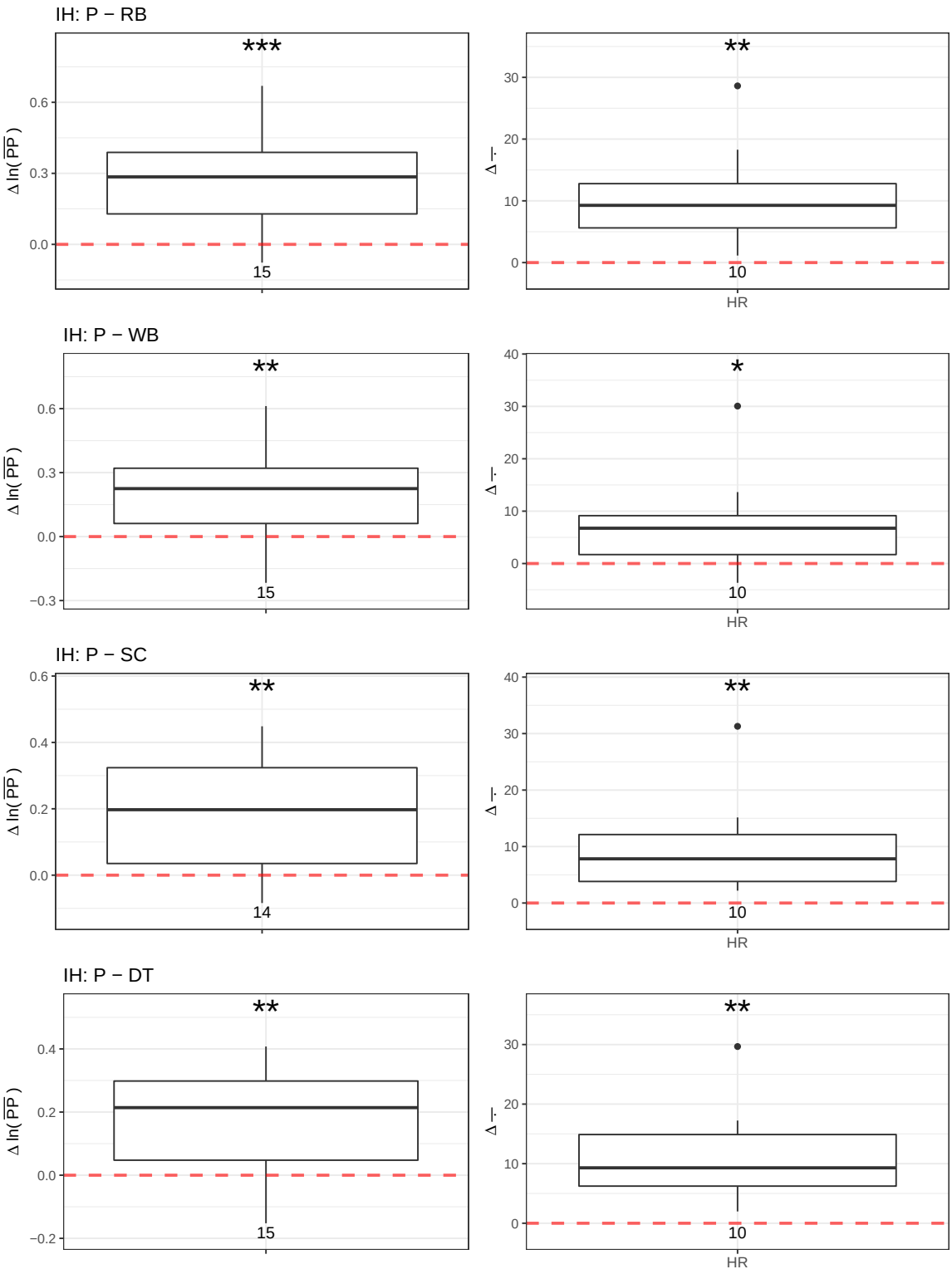
Intermittent-High (IH)

Sensor Channels per Session

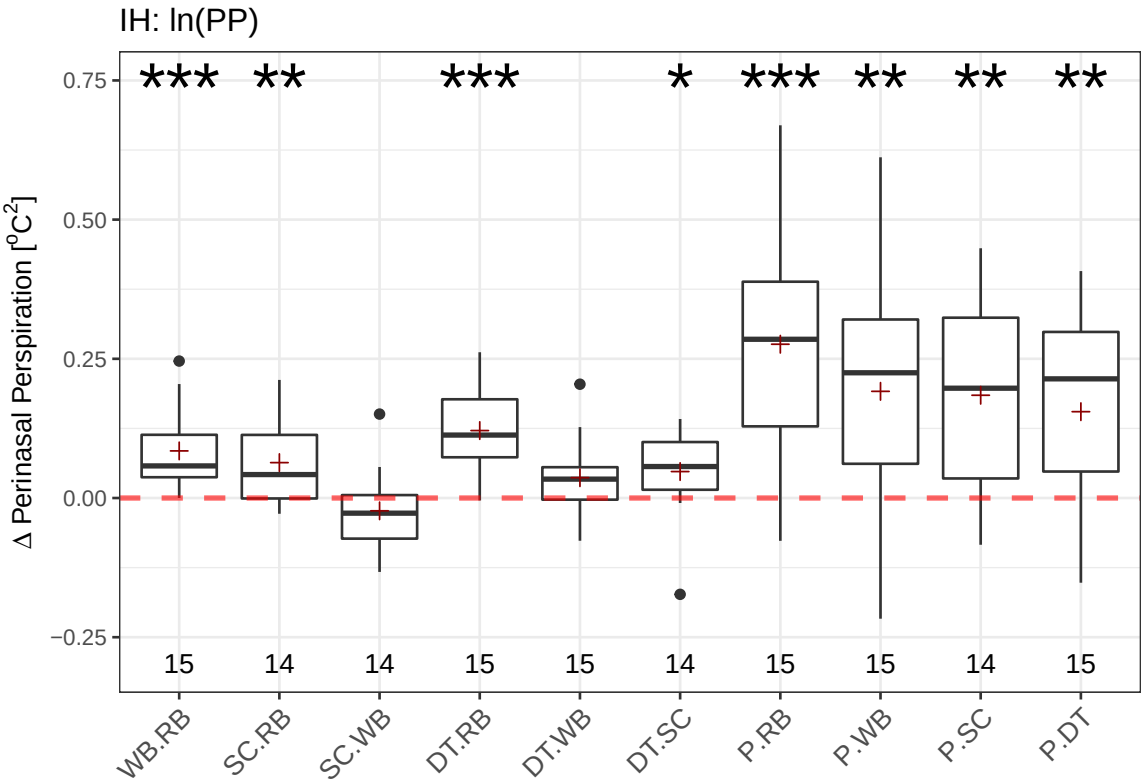



IH: SC − RB
**
0.2
0.1
0.0
Δ ln(PP)
14
10
5
0
−5
Δ
10
15
HR
BR
IH: SC − WB
0.2
0.1
0.0
−0.1
Δ ln(PP)
14
*
*
4
0
−4
−8
Δ
10
15
HR
BR


IH: DT − RB
***
0.3
0.2
0.1
0.0
Δ ln(PP)
15
20
10
0
Δ
11
15
HR
BR
IH: DT − WB
0.2
0.1
0.0
−0.1
Δ ln(PP)
15
**
**
5
0
−5
Δ
11
15
HR
BR
IH: DT − SC
*
0.2
0.1
0.0
−0.1
−0.2
Δ ln(PP)
14
4
0
−4
Δ
10
15
HR
BR

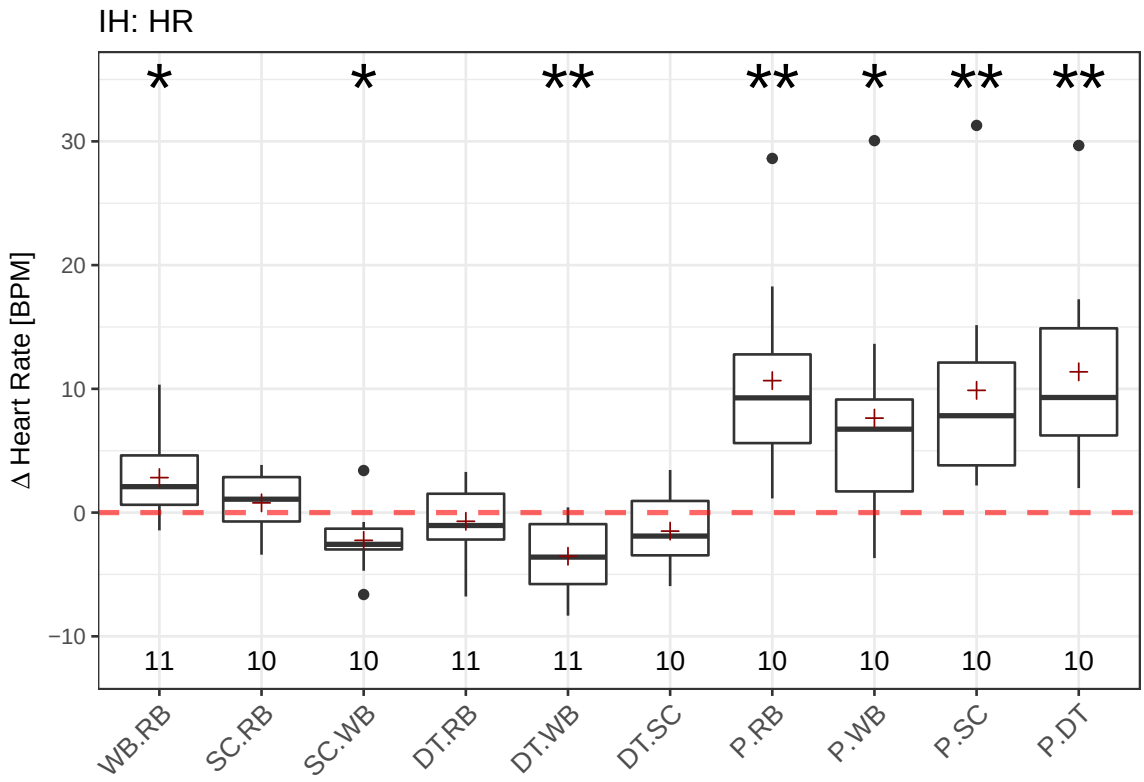

IH: P − RB
***
**
0.6
0.3
0.0
30
20
10
0
15
10
HR
IH: P − WB
**
*
0.6
0.3
0.0
−0.3
40
30
20
10
0
15
10
HR
IH: P − SC
**
**
0.6
0.4
0.2
0.0
40
30
20
10
0
14
10
HR
IH: P − DT
**
**
0.4
0.2
0.0
−0.2
30
20
10
0
15
10
HR

Sensor Channel across Session



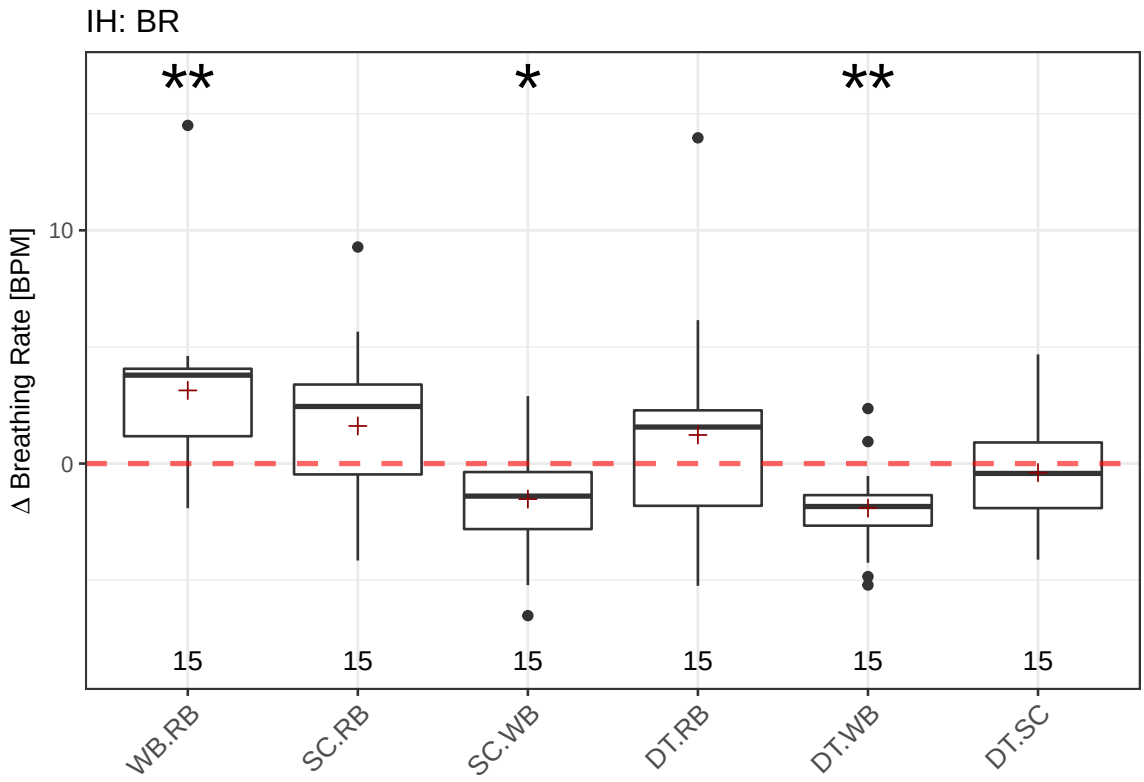

```
## In the following tests, we applied ln(PP).
##
## Writing Baseline - Resting Baseline
## t-test p = 5e-04 < 0.001  ***
##
## Stress Condition - Resting Baseline
## t-test p = 0.0096 < 0.01  **
##
## StressCondition - Writing Baseline
## t-test p = 0.2539 > 0.05
##
## Dual Task - Resting Baseline
## t-test p = 0 < 0.001  ***
##
## Dual Task - Writing Baseline
## t-test p = 0.0742 > 0.05
##
## Dual Task - Stress Condition
## t-test p = 0.0422 < 0.05  *
##
## Presentation - Resting Baseline
## t-test p = 1e-04 < 0.001  ***
##
```

```
## Presentation - Writing Baseline
## t-test p = 0.0033 < 0.01  **
##
## Presentation - Stress Condition
## t-test p = 0.0018 < 0.01  **
##
## Presentation - Dual Task
## t-test p = 0.0054 < 0.01  **
```




```
## Writing Baseline - Resting Baseline
## t-test p = 0.0188 < 0.05  *
##
## Stress Condition - Resting Baseline
## t-test p = 0.3553 > 0.05
##
## StressCondition - Writing Baseline
## t-test p = 0.0243 < 0.05  *
##
## Dual Task - Resting Baseline
## t-test p = 0.4335 > 0.05
##
## Dual Task - Writing Baseline
## t-test p = 0.0036 < 0.01  **
##
## Dual Task - Stress Condition
## t-test p = 0.1614 > 0.05
##
## Presentation - Resting Baseline
## t-test p = 0.0024 < 0.01  **
##
## Presentation - Writing Baseline
## t-test p = 0.0289 < 0.05  *
##
## Presentation - Stress Condition
```

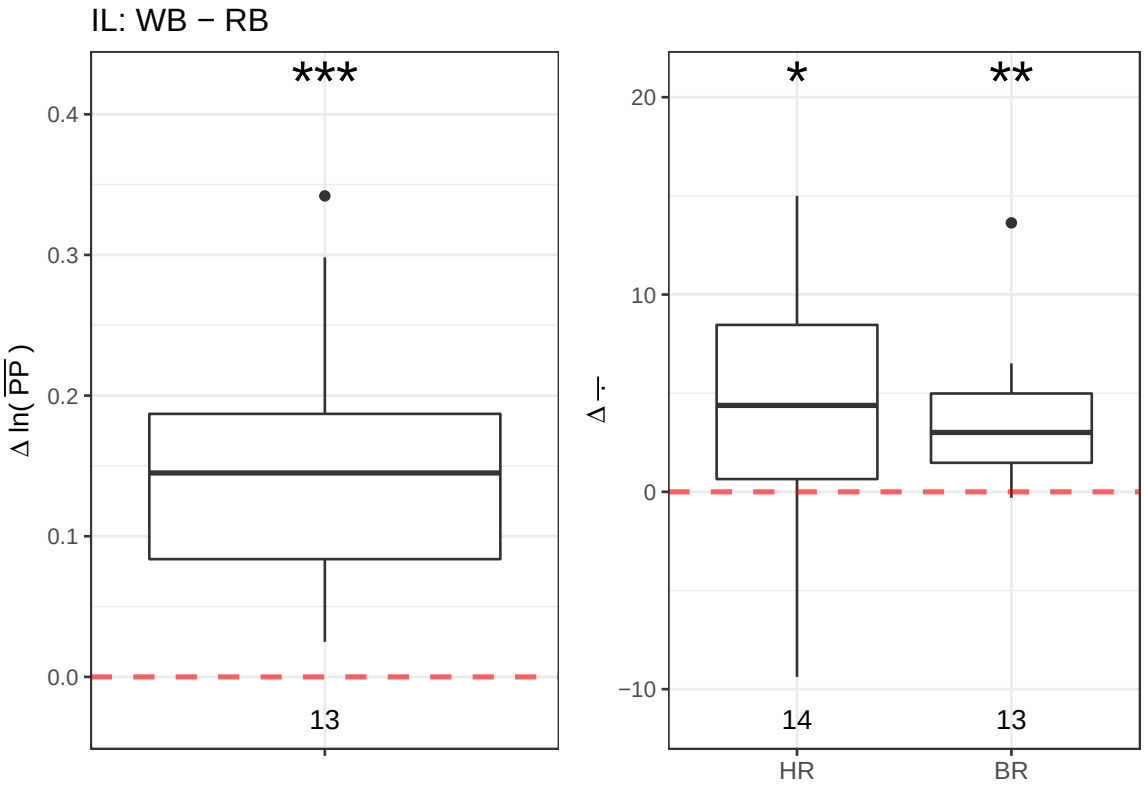
```
## t-test p = 0.0063 < 0.01  **
##
## Presentation - Dual Task
## t-test p = 0.0015 < 0.01  **
```

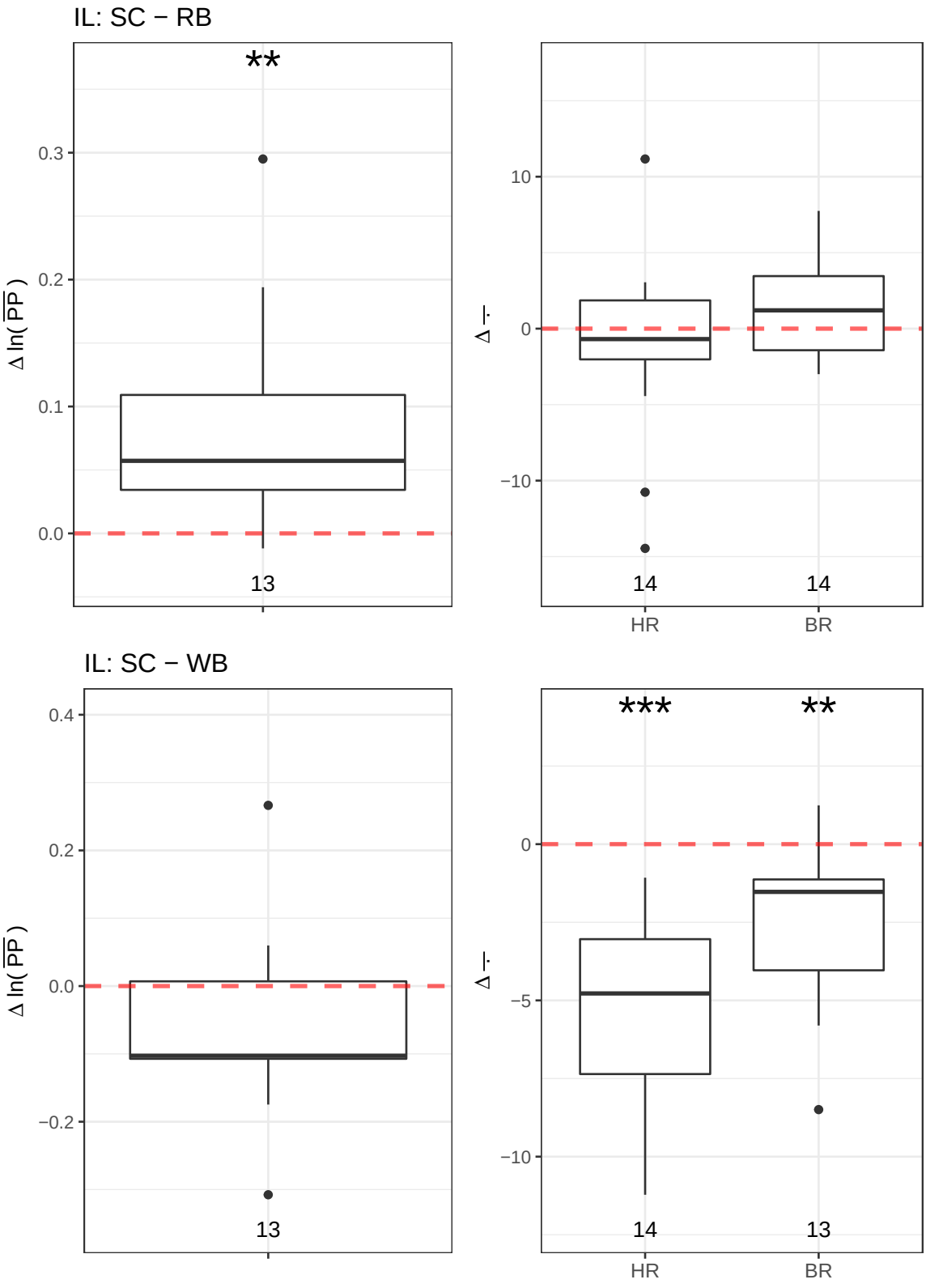


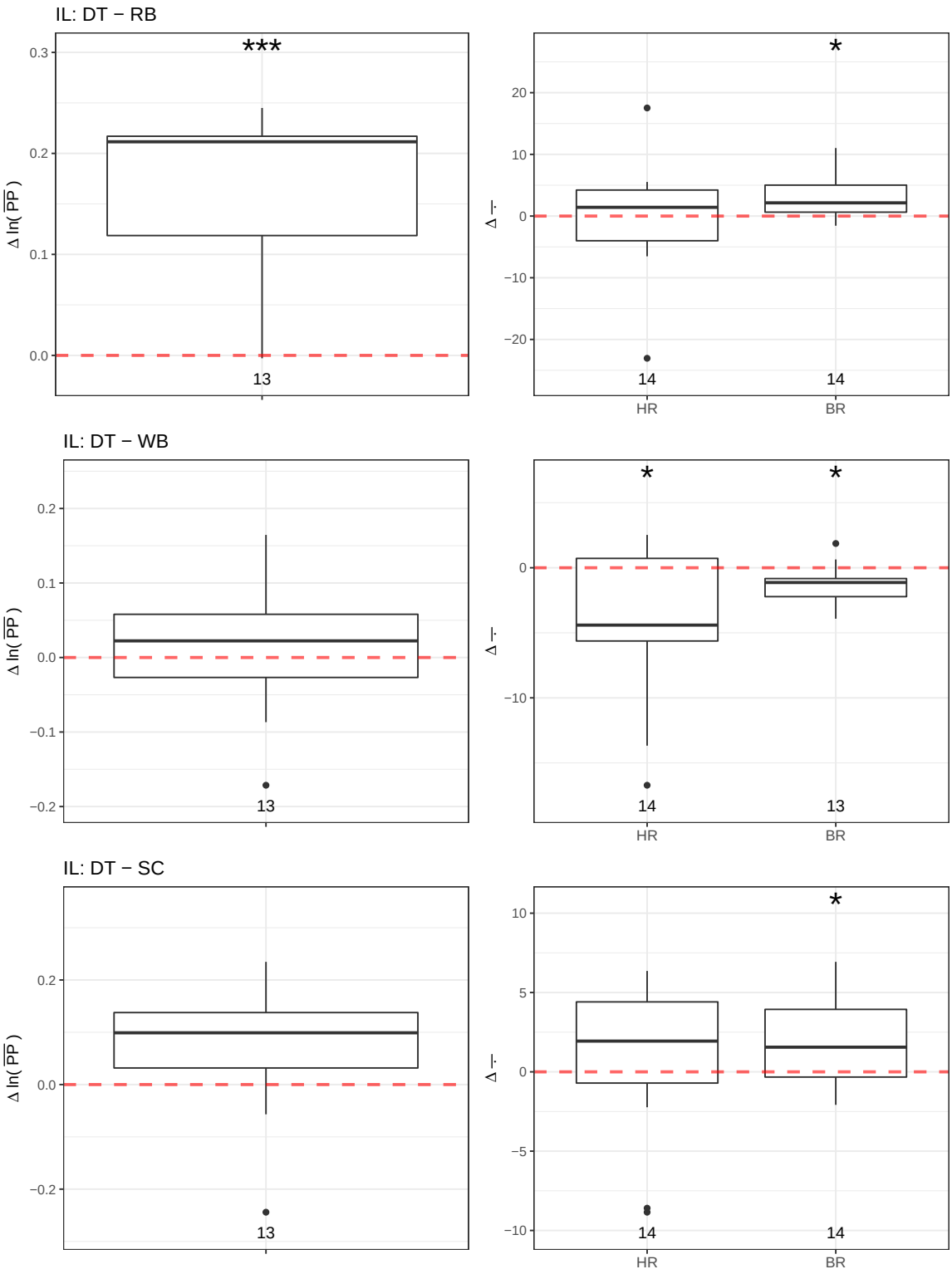

```
## Writing Baseline - Resting Baseline
## t-test p = 0.0075 < 0.01  **
##
## Stress Condition - Resting Baseline
## t-test p = 0.1189 > 0.05
##
## StressCondition - Writing Baseline
## t-test p = 0.0318 < 0.05  *
##
## Dual Task - Resting Baseline
## t-test p = 0.3323 > 0.05
##
## Dual Task - Writing Baseline
## t-test p = 0.0023 < 0.01  **
##
## Dual Task - Stress Condition
## t-test p = 0.5106 > 0.05
```

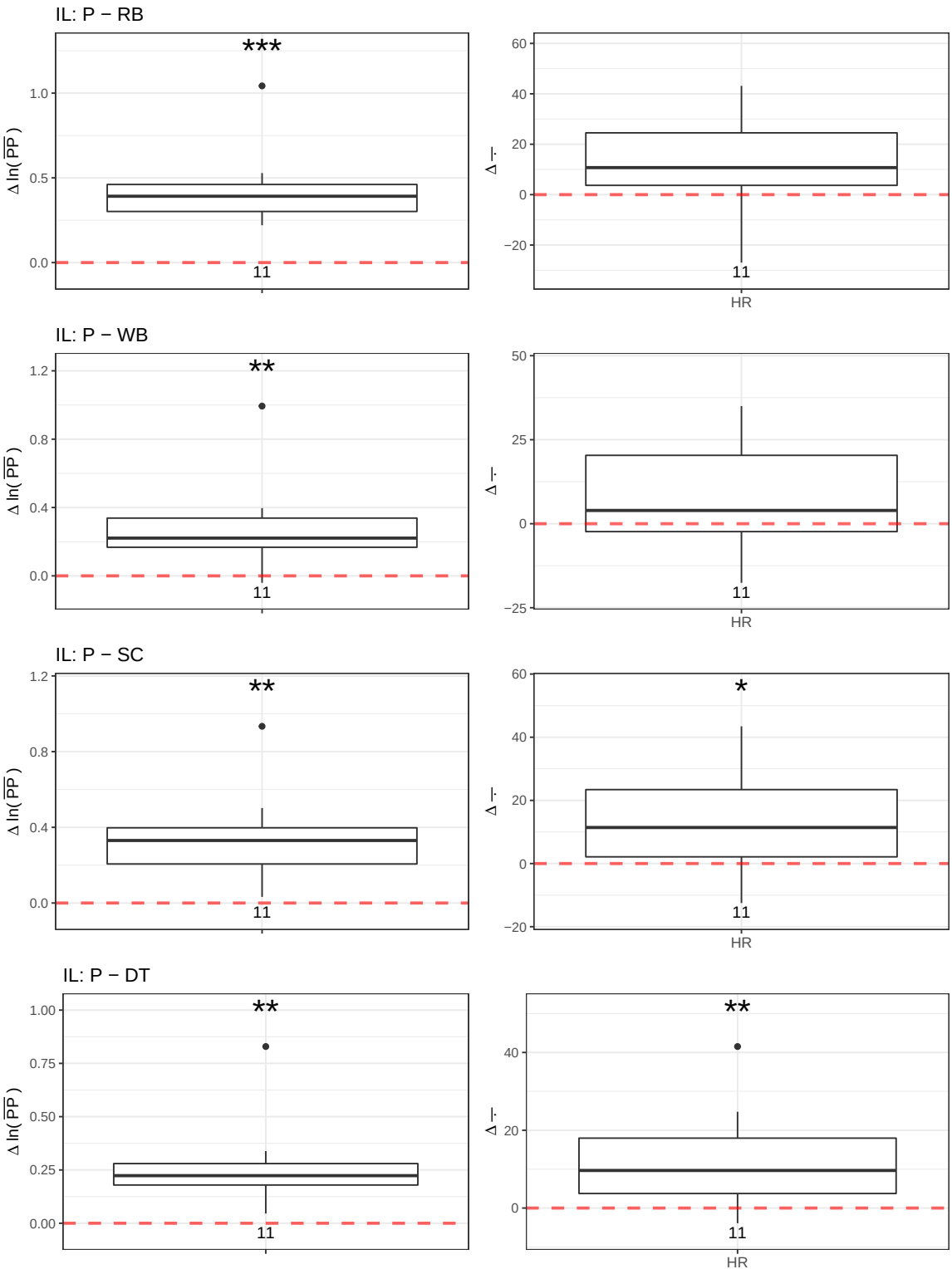
Intermittent-Low (IL)

Sensor Channels per Session

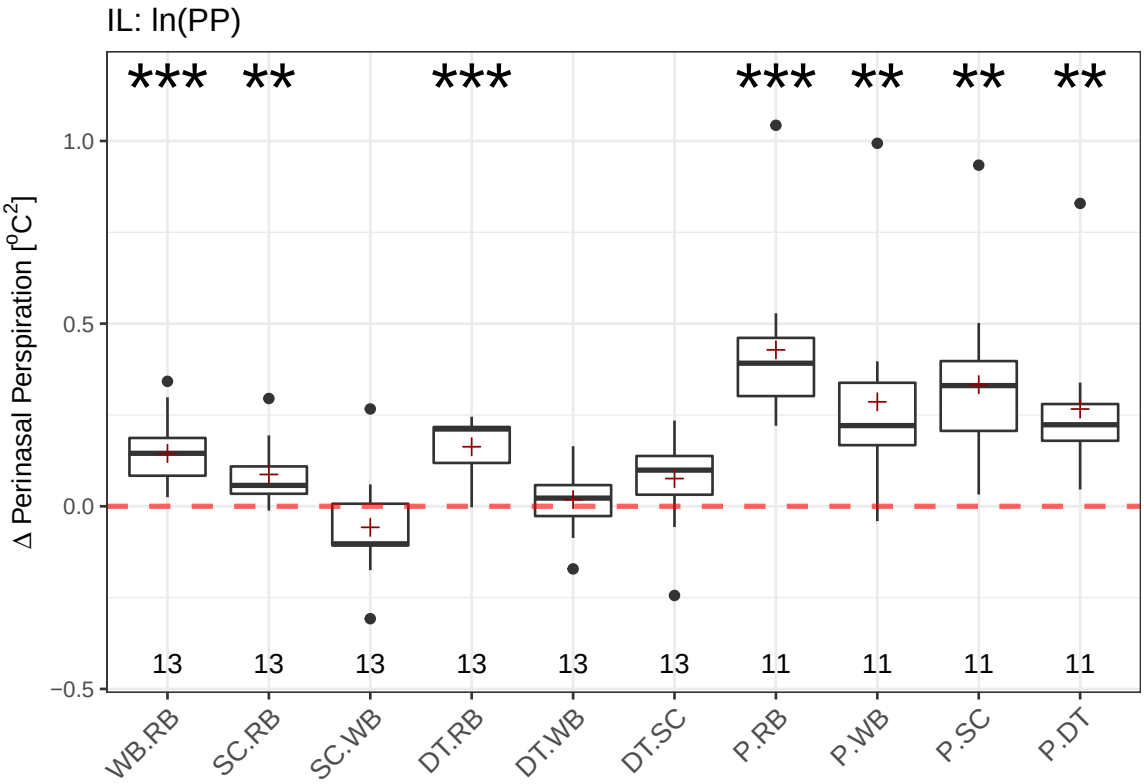



IL: SC − RB
**
0.3
0.2
0.1
0.0
Δ ln(PP)
13
10
0
−10
Δ
14
14
HR
BR
IL: SC − WB
0.4
0.2
0.0
−0.2
Δ ln(PP)
13
***
**
0
−5
−10
Δ
14
13
HR
BR


IL: DT − RB
***
*
0.3
0.2
0.1
0.0
20
10
0
−10
−20
Δ ln(PP)
Δ
13
14
14
HR
BR
IL: DT − WB
*
*
0.2
0.1
0.0
−0.1
−0.2
0
−10
13
14
13
HR
BR
IL: DT − SC
*
0.2
0.0
−0.2
10
5
0
−5
−10
13
14
14
HR
BR

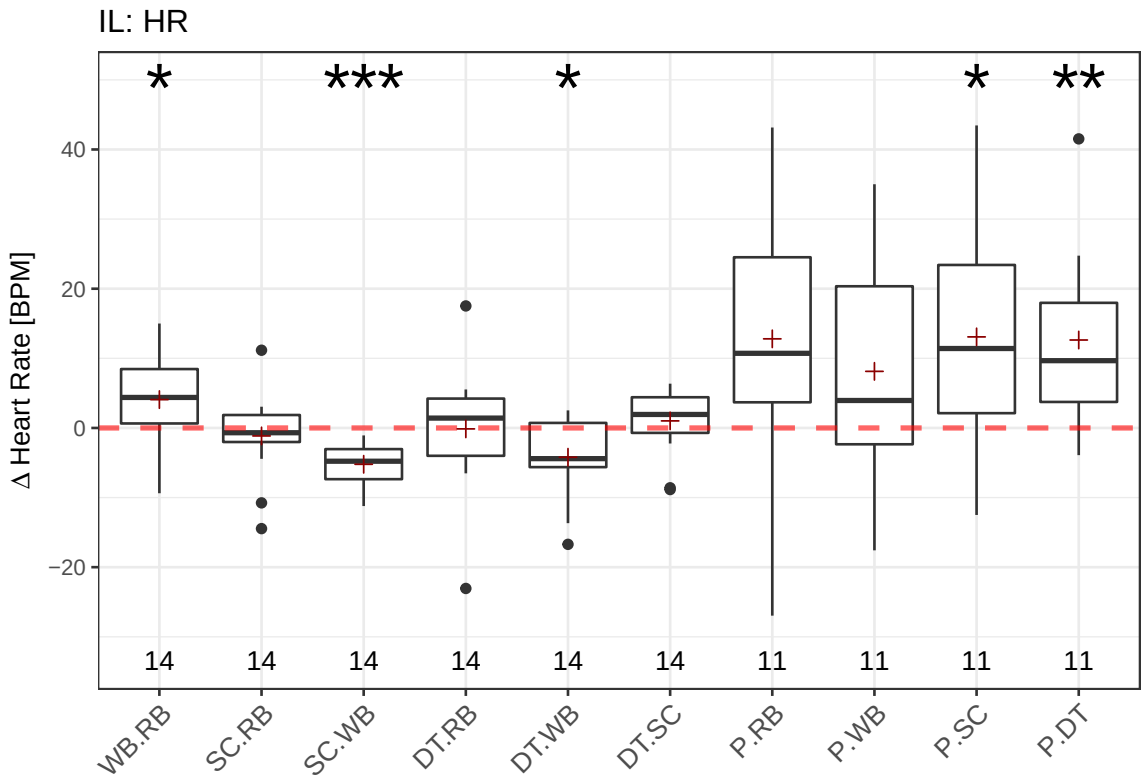

IL: P − RB
***
Δ ln(PP)
1.0
0.5
0.0
11
Δ
60
40
20
0
−20
11
HR
IL: P − WB
**
Δ ln(PP)
1.2
0.8
0.4
0.0
11
Δ
50
25
0
−25
11
HR
IL: P − SC
**
Δ ln(PP)
1.2
0.8
0.4
0.0
11
*
Δ
60
40
20
0
−20
11
HR
IL: P − DT
**
Δ ln(PP)
1.00
0.75
0.50
0.25
0.00
11
**
Δ
40
20
0
11
HR

Sensor Channel across Session



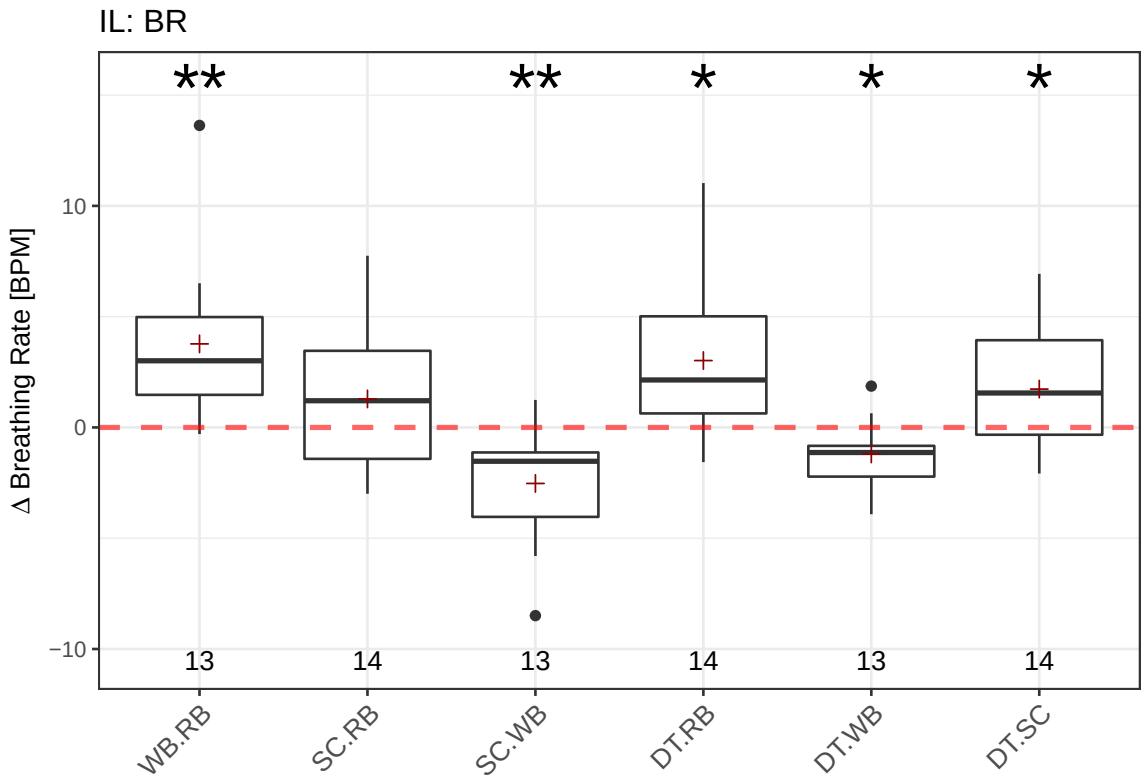

```
## Writing Baseline - Resting Baseline
## t-test p = 2e-04 < 0.001  ***
##
## Stress Condition - Resting Baseline
## t-test p = 0.0048 < 0.01  **
##
## StressCondition - Writing Baseline
## t-test p = 0.1501 > 0.05
##
## Dual Task - Resting Baseline
## t-test p = 0 < 0.001  ***
##
## Dual Task - Writing Baseline
## t-test p = 0.4898 > 0.05
##
## Dual Task - Stress Condition
## t-test p = 0.0502 > 0.05
##
## Presentation - Resting Baseline
## t-test p = 1e-04 < 0.001  ***
##
## Presentation - Writing Baseline
## t-test p = 0.0054 < 0.01  **
```

```
##
## Presentation - Stress Condition
## t-test p = 0.0012 < 0.01  **
##
## Presentation - Dual Task
## t-test p = 0.0016 < 0.01  **
```




```
## Writing Baseline - Resting Baseline
## t-test p = 0.0318 < 0.05  *
##
## Stress Condition - Resting Baseline
## t-test p = 0.4931 > 0.05
##
## StressCondition - Writing Baseline
## t-test p = 0 < 0.001  ***
##
## Dual Task - Resting Baseline
## t-test p = 0.9564 > 0.05
##
## Dual Task - Writing Baseline
## t-test p = 0.0154 < 0.05  *
##
## Dual Task - Stress Condition
## t-test p = 0.4432 > 0.05
##
## Presentation - Resting Baseline
## t-test p = 0.0552 > 0.05
##
## Presentation - Writing Baseline
## t-test p = 0.1202 > 0.05
##
## Presentation - Stress Condition
```

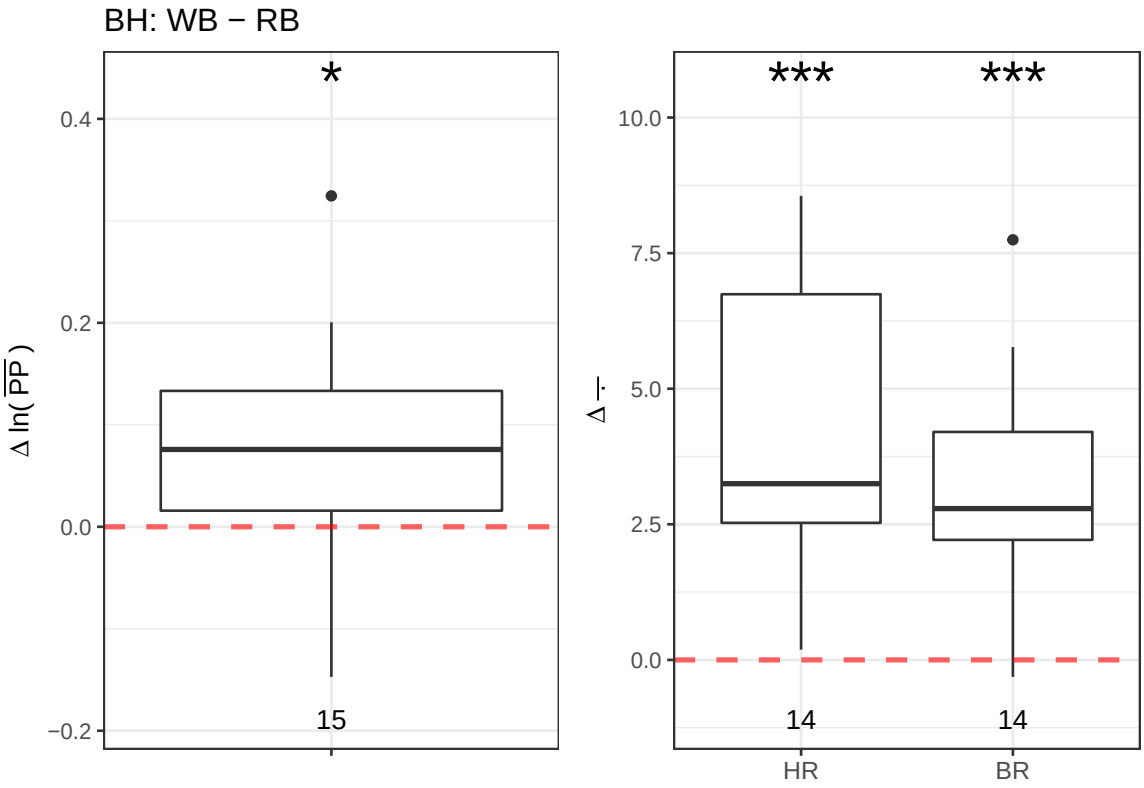
```
## t-test p = 0.0209 < 0.05  *
##
## Presentation - Dual Task
## t-test p = 0.0094 < 0.01  **
```

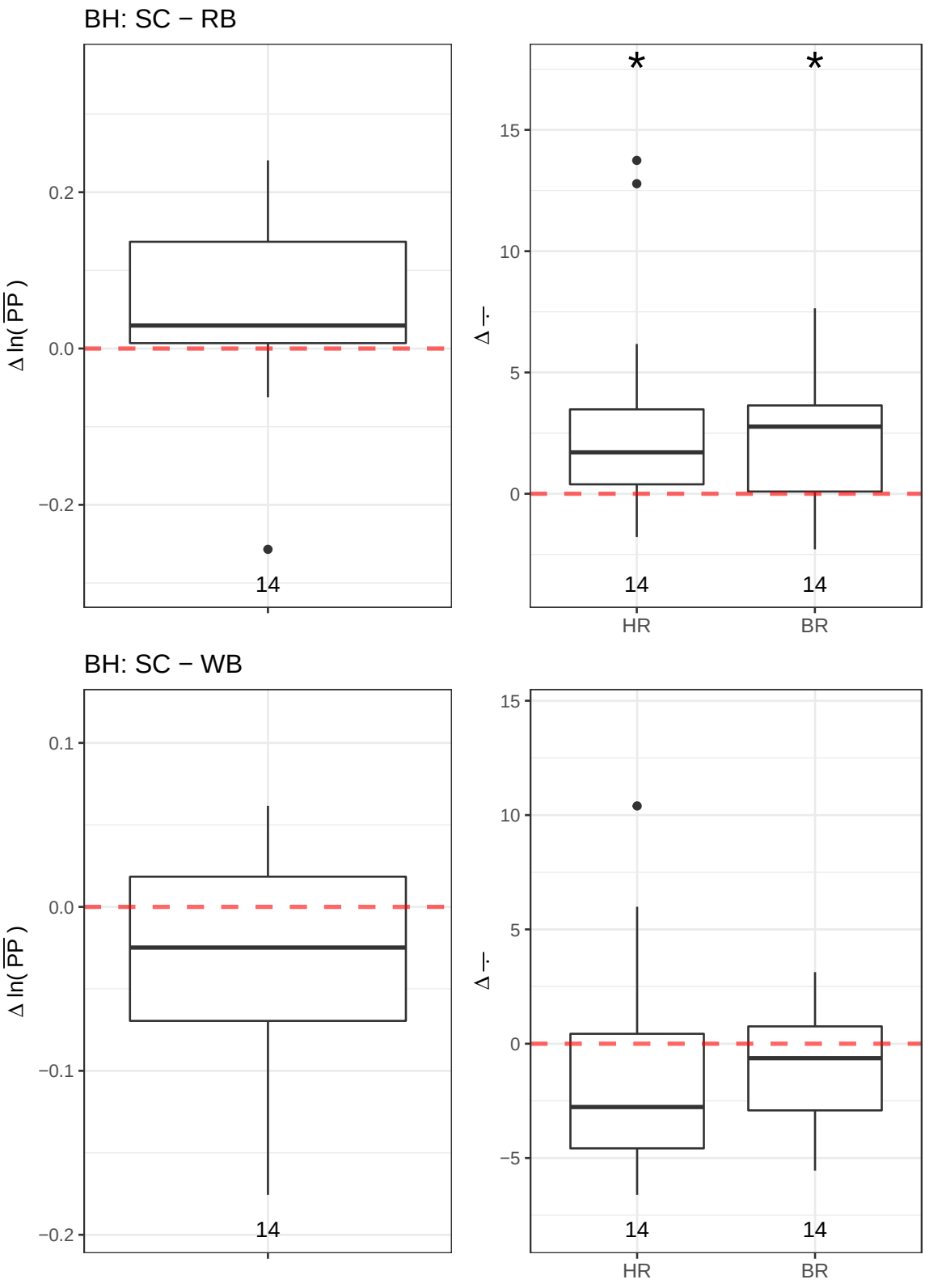


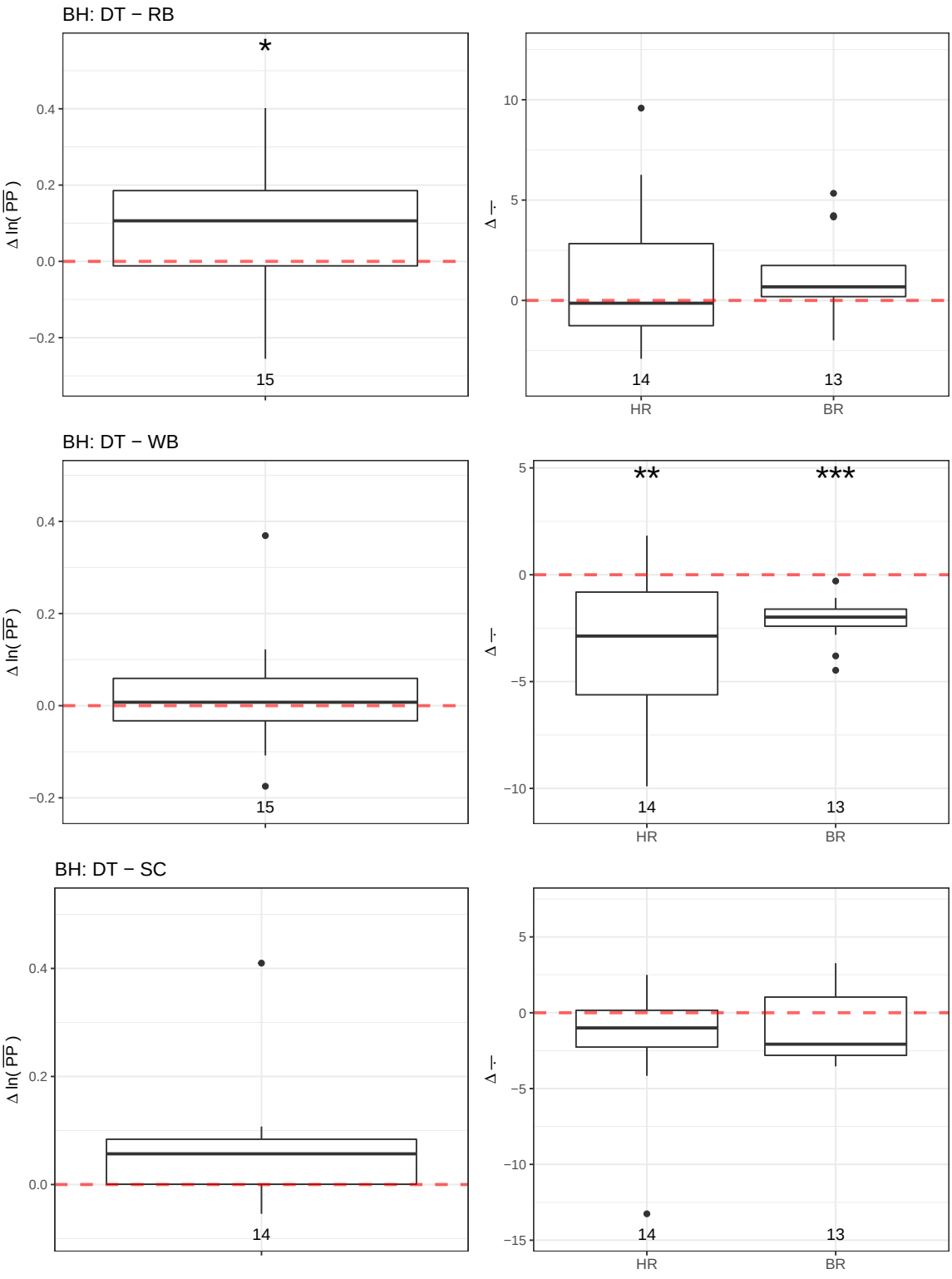

```
## Writing Baseline - Resting Baseline
## t-test p = 0.0029 < 0.01  **
##
## Stress Condition - Resting Baseline
## t-test p = 0.1716 > 0.05
##
## StressCondition - Writing Baseline
## t-test p = 0.0057 < 0.01  **
##
## Dual Task - Resting Baseline
## t-test p = 0.011 < 0.05  *
##
## Dual Task - Writing Baseline
## t-test p = 0.0141 < 0.05  *
##
## Dual Task - Stress Condition
## t-test p = 0.0397 < 0.05  *
```

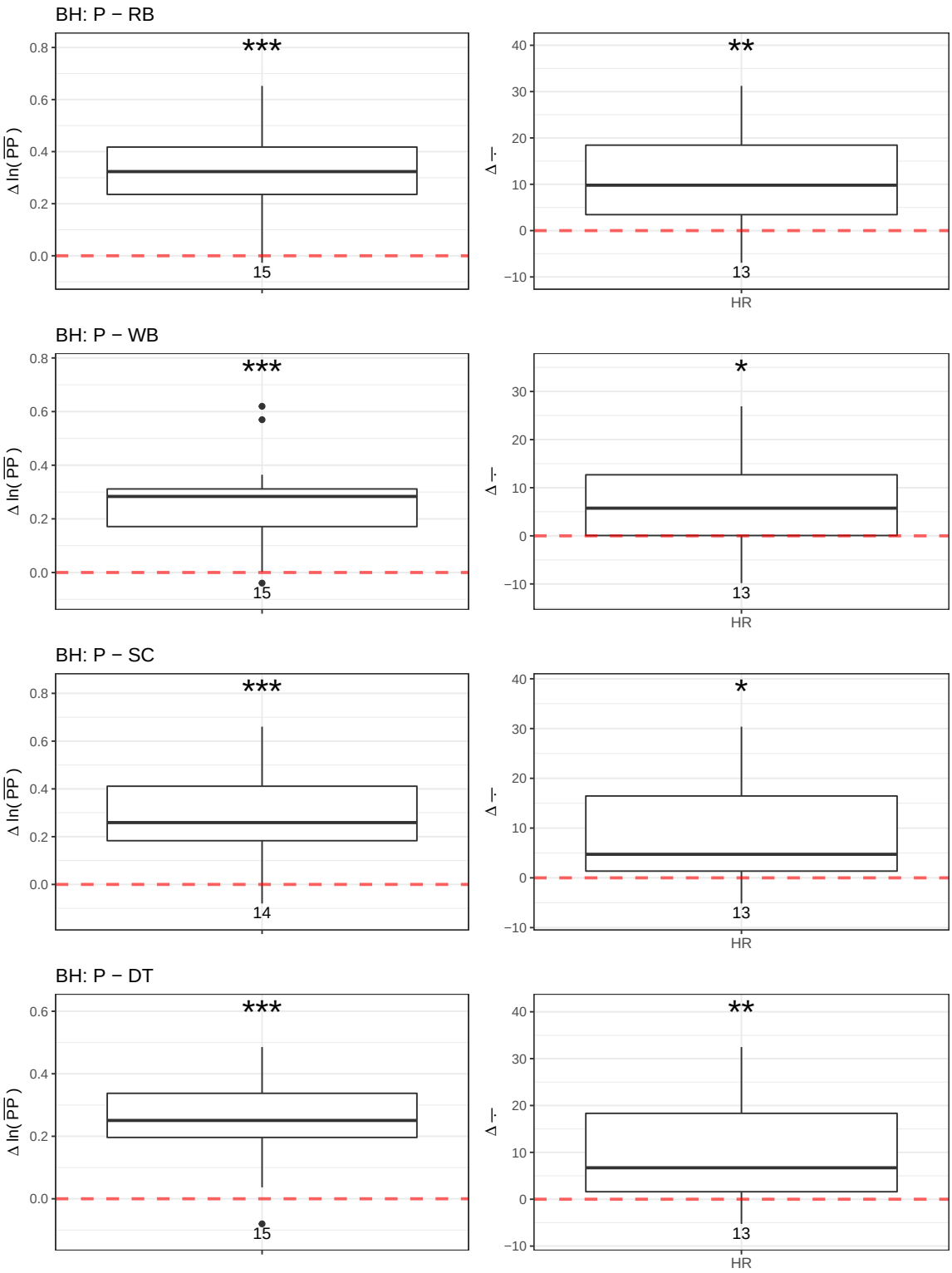
Batch-High (BH)

Sensor Channels per Session

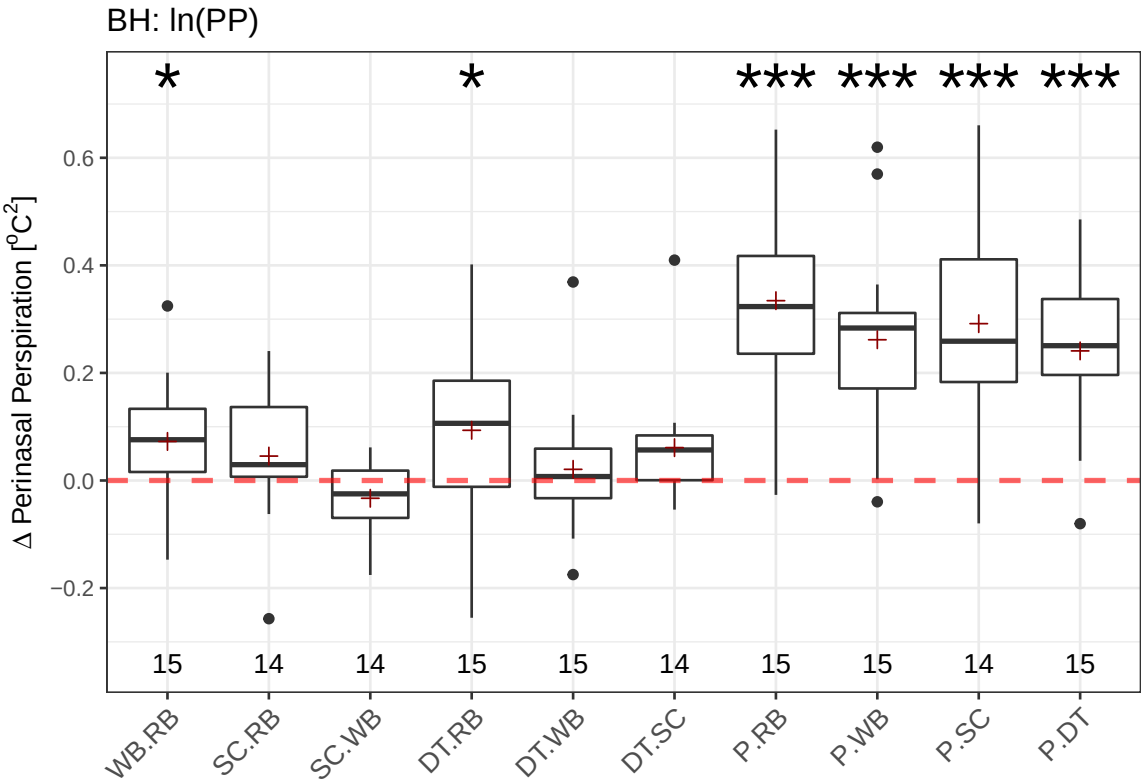



BH: SC − RB
Δ ln(PP)
0.2
0.0
−0.2
14
Δ
15
10
5
0
*
*
14
14
HR
BR
BH: SC − WB
Δ ln(PP)
0.1
0.0
−0.1
−0.2
14
Δ
15
10
5
0
−5
14
14
HR
BR


BH: DT − RB
*
0.4
0.2
0.0
−0.2
Δ ln(PP)
15
10
5
0
Δ
14
13
HR
BR
BH: DT − WB
**
***
0.4
0.2
0.0
−0.2
Δ ln(PP)
15
5
0
−5
−10
Δ
14
13
HR
BR
BH: DT − SC
0.4
0.2
0.0
Δ ln(PP)
14
5
0
−5
−10
−15
Δ
14
13
HR
BR

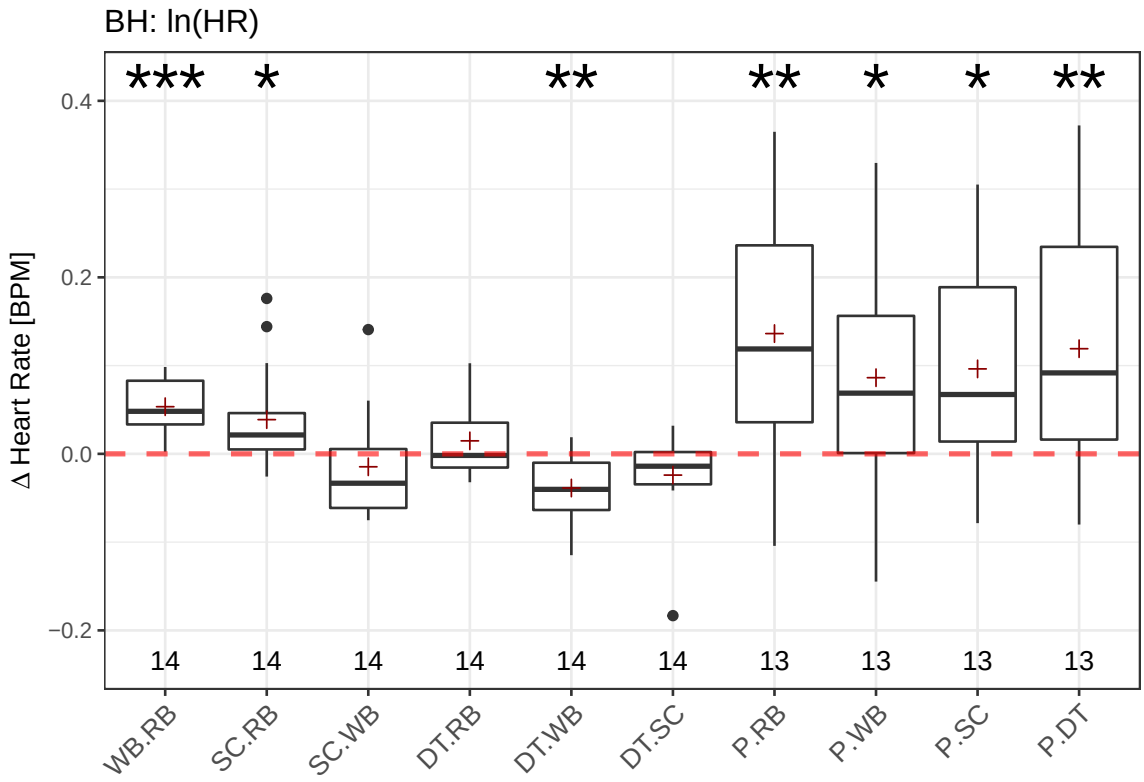

BH: P − RB
***
**
15
13
HR
BH: P − WB
***
*
15
13
HR
BH: P − SC
***
*
14
13
HR
BH: P − DT
***
**
15
13
HR

Sensor Channel across Session



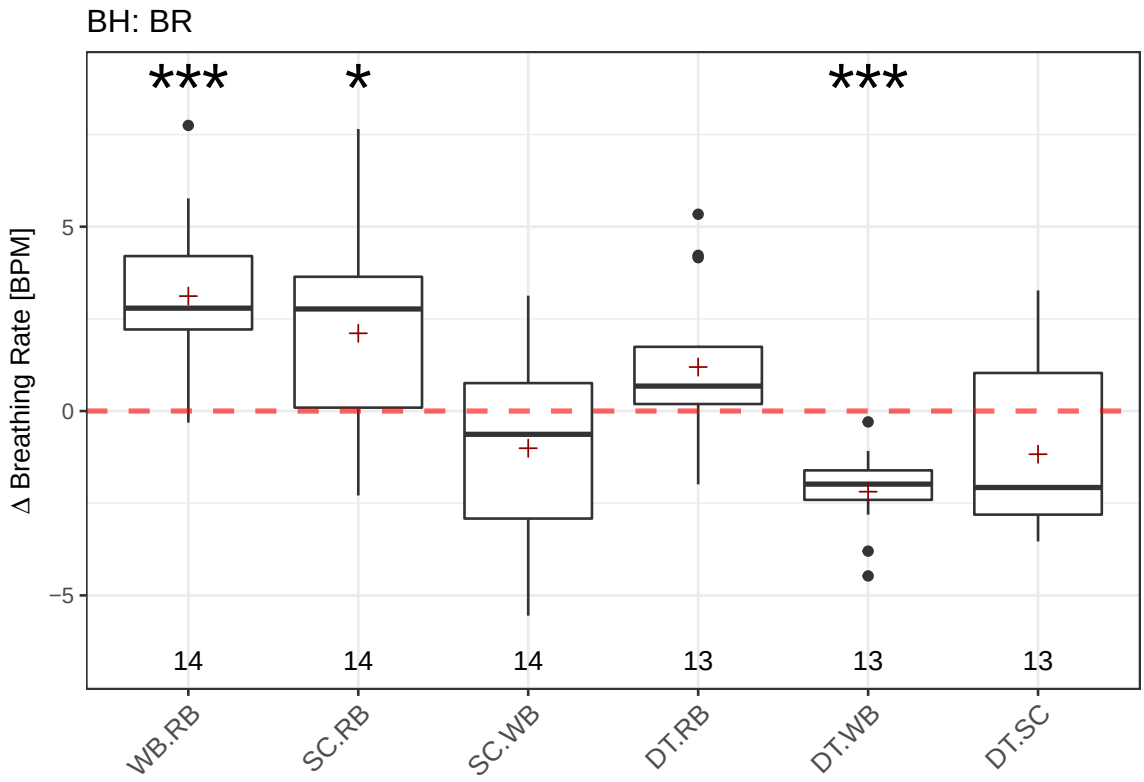

```
## Writing Baseline - Resting Baseline
## t-test p = 0.0219 < 0.05  *
##
## Stress Condition - Resting Baseline
## t-test p = 0.1778 > 0.05
##
## StressCondition - Writing Baseline
## t-test p = 0.0974 > 0.05
##
## Dual Task - Resting Baseline
## t-test p = 0.0363 < 0.05  *
##
## Dual Task - Writing Baseline
## t-test p = 0.526 > 0.05
##
## Dual Task - Stress Condition
## t-test p = 0.063 > 0.05
##
## Presentation - Resting Baseline
## t-test p = 0 < 0.001  ***
##
## Presentation - Writing Baseline
## t-test p = 1e-04 < 0.001  ***
```

```
##
## Presentation - Stress Condition
## t-test p = 1e-04 < 0.001  ***
##
## Presentation - Dual Task
## t-test p = 0 < 0.001  ***
```




```
## Writing Baseline - Resting Baseline
## Transformed t-test p = 0 < 0.001  ***
##
## Stress Condition - Resting Baseline
## Transformed t-test p = 0.0327 < 0.05  *
##
## StressCondition - Writing Baseline
## Transformed t-test p = 0.3941 > 0.05
##
## Dual Task - Resting Baseline
## Transformed t-test p = 0.2172 > 0.05
##
## Dual Task - Writing Baseline
## Transformed t-test p = 0.0025 < 0.01  **
##
## Dual Task - Stress Condition
## Transformed t-test p = 0.0971 > 0.05
##
## Presentation - Resting Baseline
## Transformed t-test p = 0.0048 < 0.01  **
##
## Presentation - Writing Baseline
## Transformed t-test p = 0.0411 < 0.05  *
##
## Presentation - Stress Condition
```

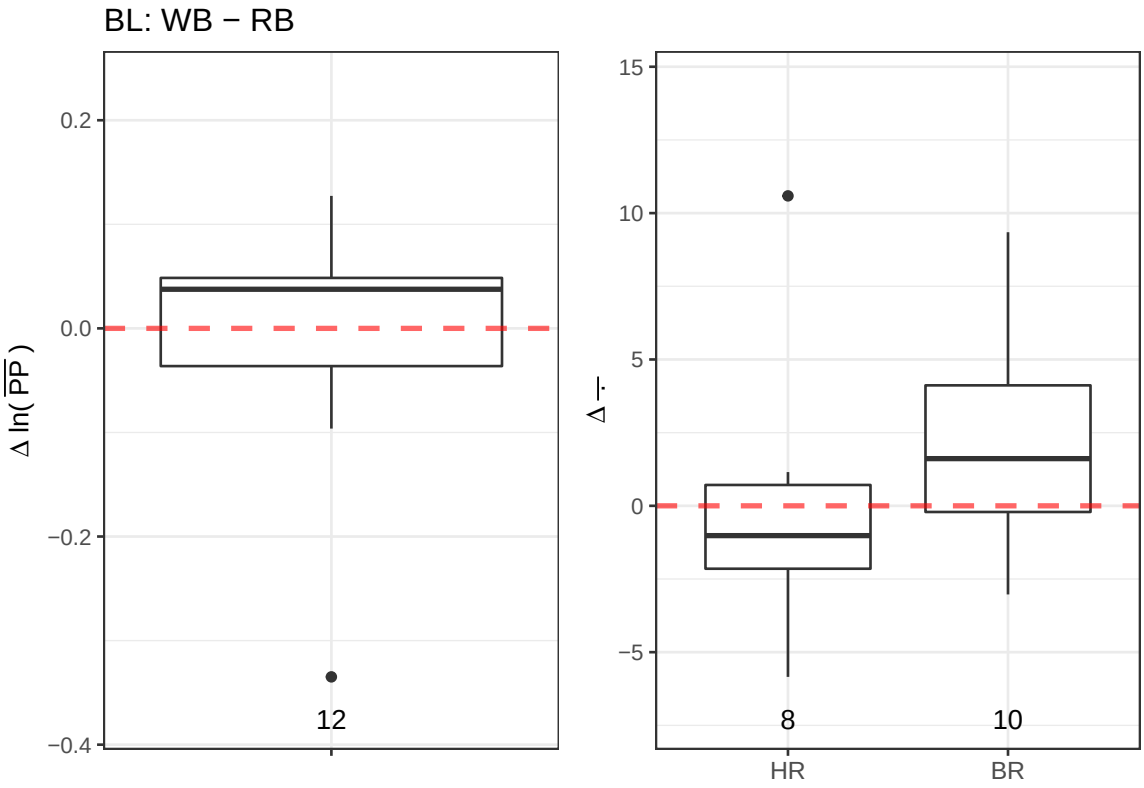
```
## Transformed t-test p = 0.0162 < 0.05  *
##
## Presentation - Dual Task
## Transformed t-test p = 0.0095 < 0.01  **
```

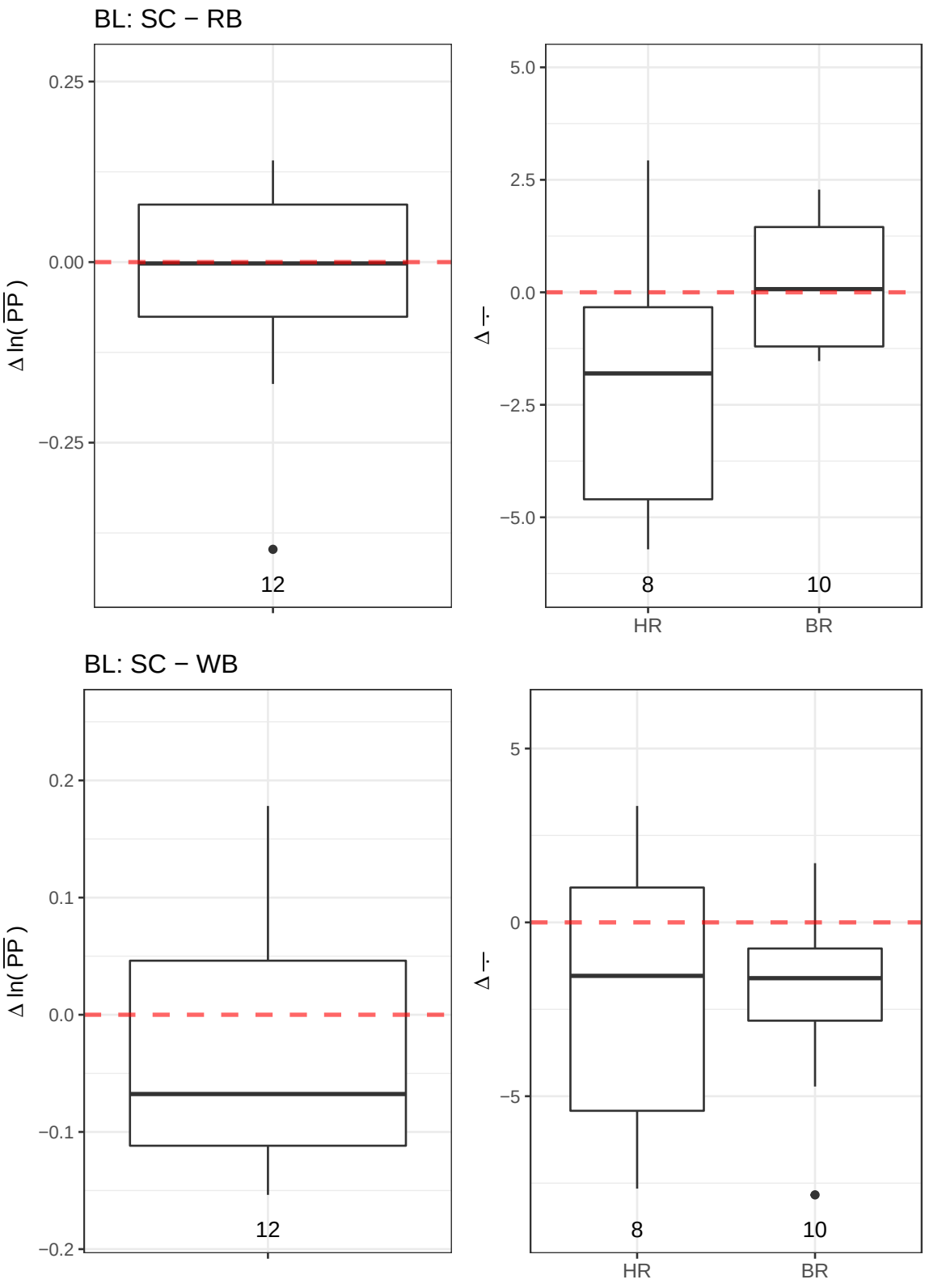


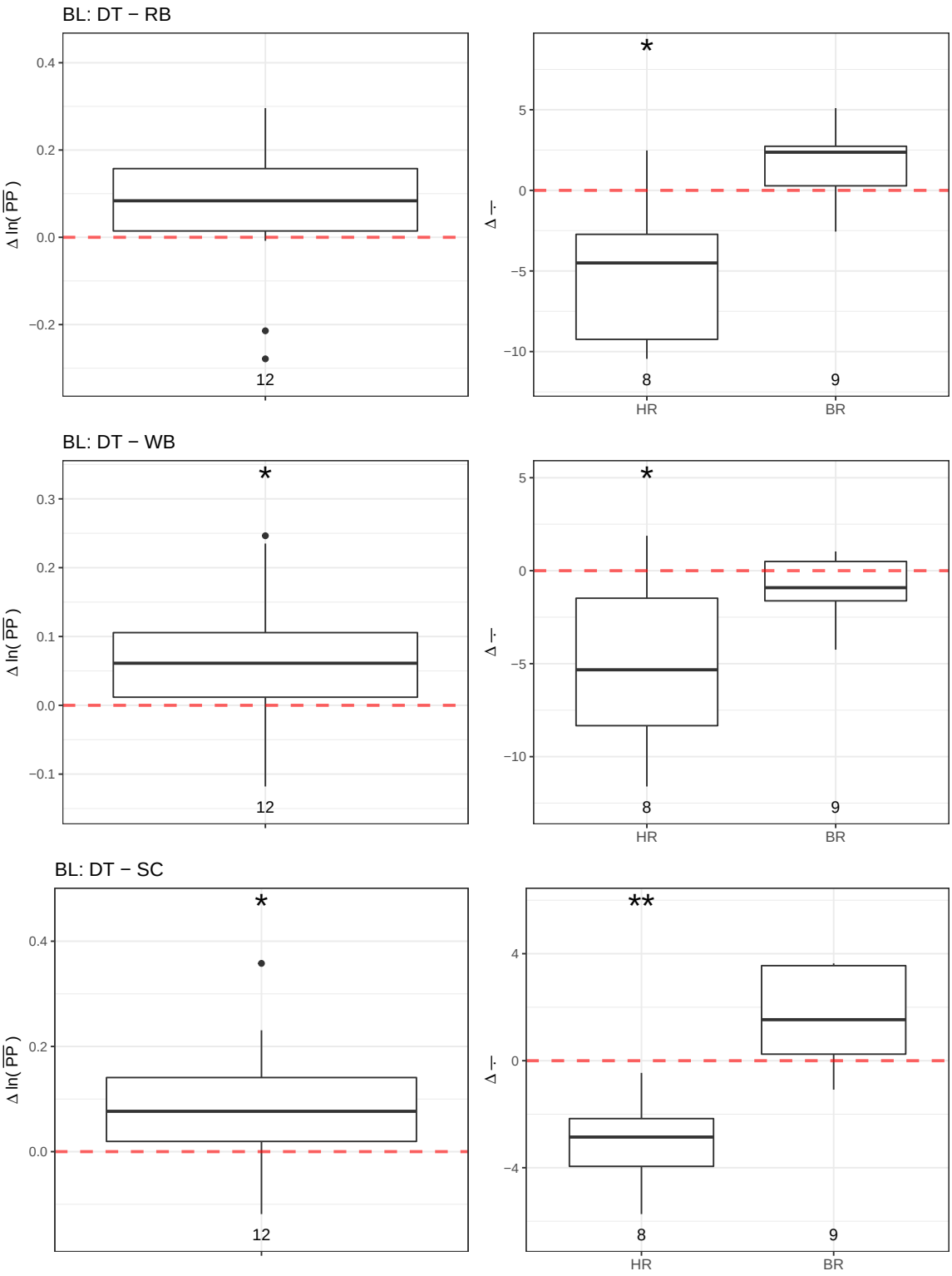

```
## Writing Baseline - Resting Baseline
## t-test p = 1e-04 < 0.001  ***
##
## Stress Condition - Resting Baseline
## t-test p = 0.0167 < 0.05  *
##
## StressCondition - Writing Baseline
## t-test p = 0.1543 > 0.05
##
## Dual Task - Resting Baseline
## t-test p = 0.0745 > 0.05
##
## Dual Task - Writing Baseline
## t-test p = 0 < 0.001  ***
##
## Dual Task - Stress Condition
## t-test p = 0.1009 > 0.05
```

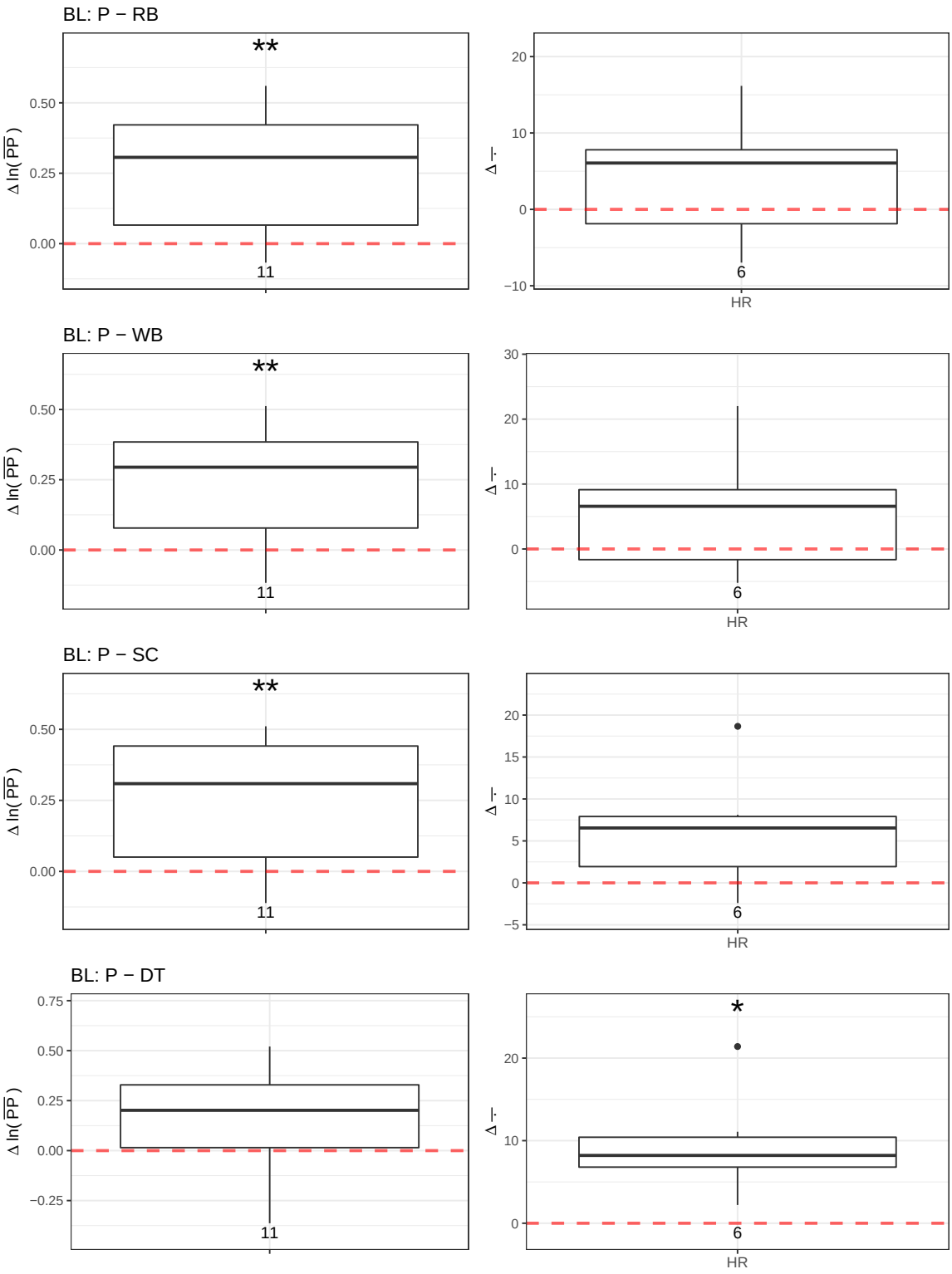
Batch-Low (BL)

Sensor Channels per Session

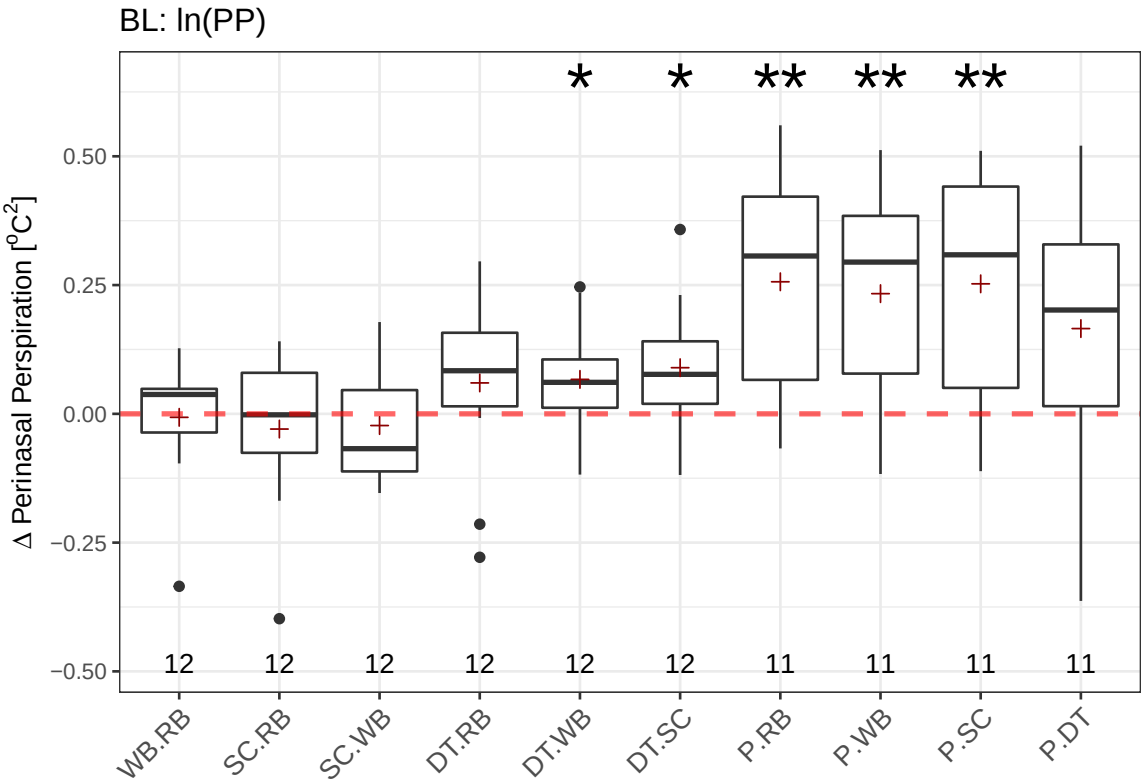



BL: SC − RB
0.25
0.00
−0.25
Δ ln(PP)
12
5.0
2.5
0.0
−2.5
−5.0
Δ
8
10
HR
BR
BL: SC − WB
0.2
0.1
0.0
−0.1
−0.2
Δ ln(PP)
12
5
0
−5
Δ
8
10
HR
BR


BL: DT − RB
Δ ln(PP)
0.4
0.2
0.0
−0.2
12
*
Δ
5
0
−5
−10
8
9
HR
BR
BL: DT − WB
Δ ln(PP)
0.3
0.2
0.1
0.0
−0.1
12
*
Δ
5
0
−5
−10
8
9
HR
BR
BL: DT − SC
Δ ln(PP)
0.4
0.2
0.0
12
*
Δ
**
4
0
−4
8
9
HR
BR

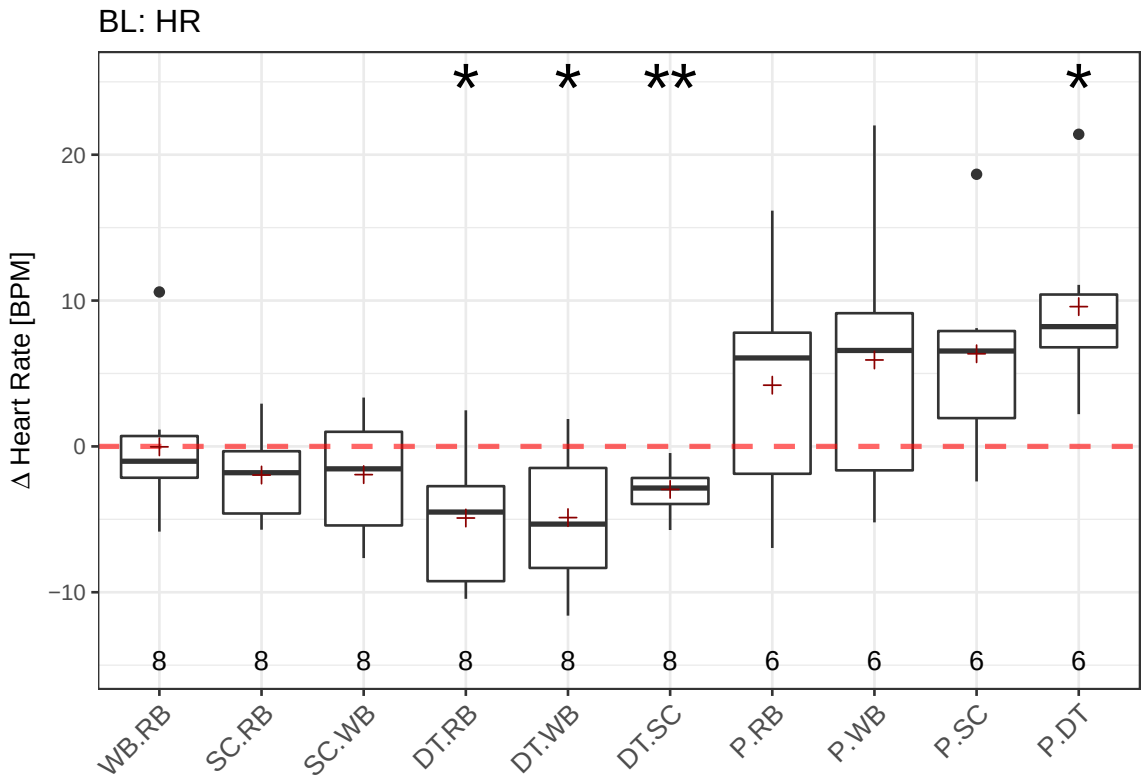

BL: P − RB
**
0.50
0.25
0.00
Δ ln(PP)
11
20
10
0
−10
Δ ⊣
6
HR
BL: P − WB
**
0.50
0.25
0.00
Δ ln(PP)
11
30
20
10
0
Δ ⊣
6
HR
BL: P − SC
**
0.50
0.25
0.00
Δ ln(PP)
11
20
15
10
5
0
−5
Δ ⊣
6
HR
BL: P − DT
0.75
0.50
0.25
0.00
−0.25
Δ ln(PP)
11
*
20
10
0
Δ ⊣
6
HR

Sensor Channel across Session



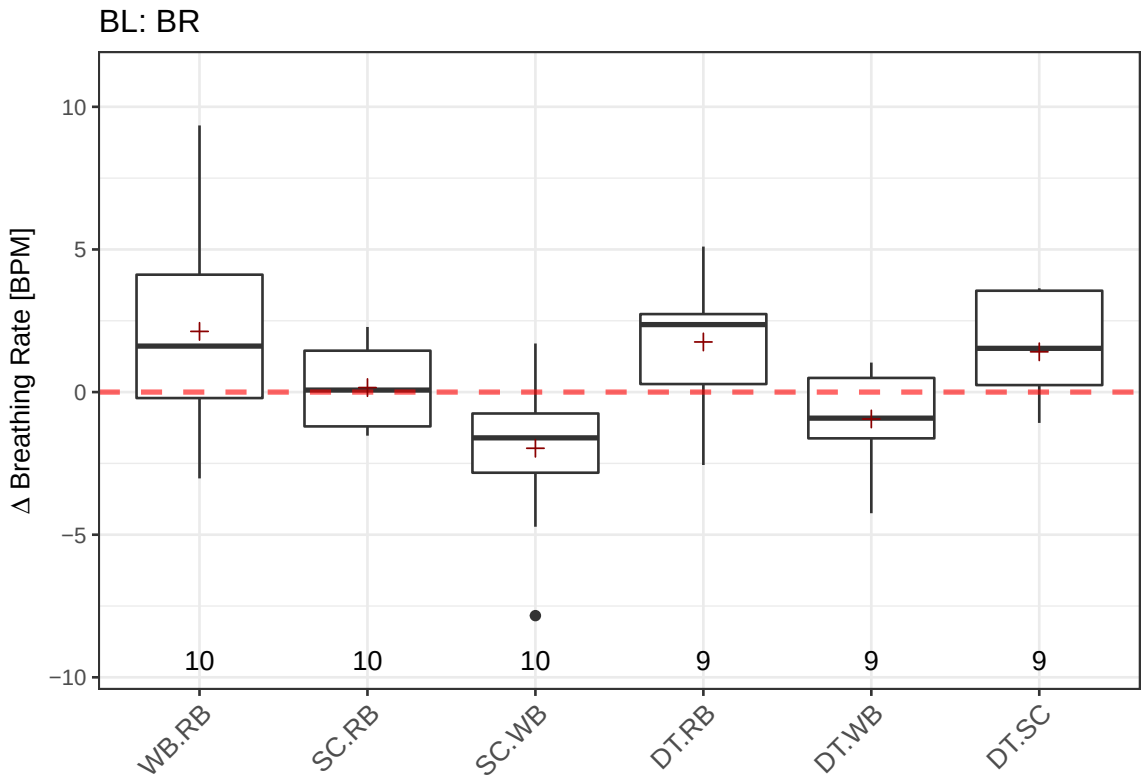

```
## Writing Baseline - Resting Baseline
## t-test p = 0.8528 > 0.05
##
## Stress Condition - Resting Baseline
## t-test p = 0.5007 > 0.05
##
## StressCondition - Writing Baseline
## t-test p = 0.4871 > 0.05
##
## Dual Task - Resting Baseline
## t-test p = 0.243 > 0.05
##
## Dual Task - Writing Baseline
## t-test p = 0.0494 < 0.05  *
##
## Dual Task - Stress Condition
## t-test p = 0.0365 < 0.05  *
##
## Presentation - Resting Baseline
## t-test p = 0.0026 < 0.01  **
##
## Presentation - Writing Baseline
## t-test p = 0.003 < 0.01  **
```

```
##
## Presentation - Stress Condition
## t-test p = 0.0039 < 0.01  **
##
## Presentation - Dual Task
## t-test p = 0.0575 > 0.05
```



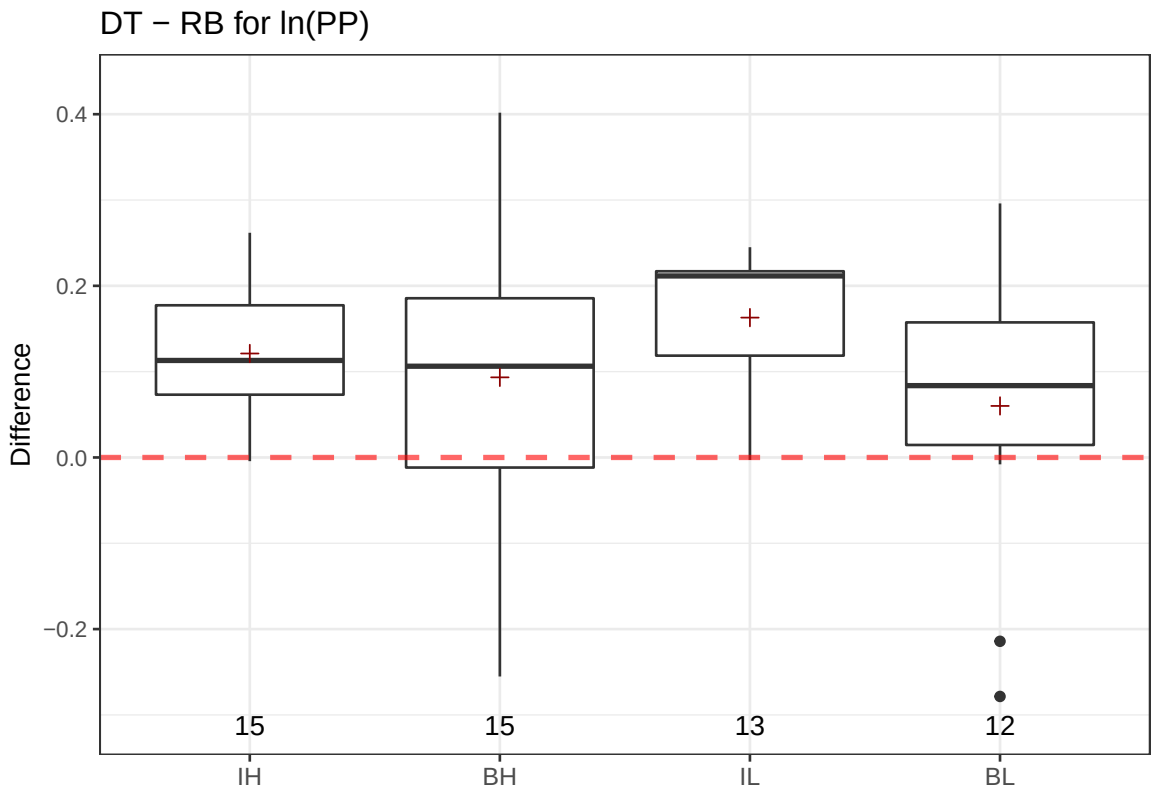

```
## Writing Baseline - Resting Baseline
## t-test p = 0.9869 > 0.05
##
## Stress Condition - Resting Baseline
## t-test p = 0.1034 > 0.05
##
## StressCondition - Writing Baseline
## t-test p = 0.217 > 0.05
##
## Dual Task - Resting Baseline
## t-test p = 0.02 < 0.05  *
##
## Dual Task - Writing Baseline
## t-test p = 0.023 < 0.05  *
##
## Dual Task - Stress Condition
## t-test p = 0.0024 < 0.01  **
##
## Presentation - Resting Baseline
## t-test p = 0.2801 > 0.05
##
## Presentation - Writing Baseline
## t-test p = 0.2075 > 0.05
##
## Presentation - Stress Condition
```

```
## t-test p = 0.0855 > 0.05
##
## Presentation - Dual Task
## t-test p = 0.0152 < 0.05  *
```

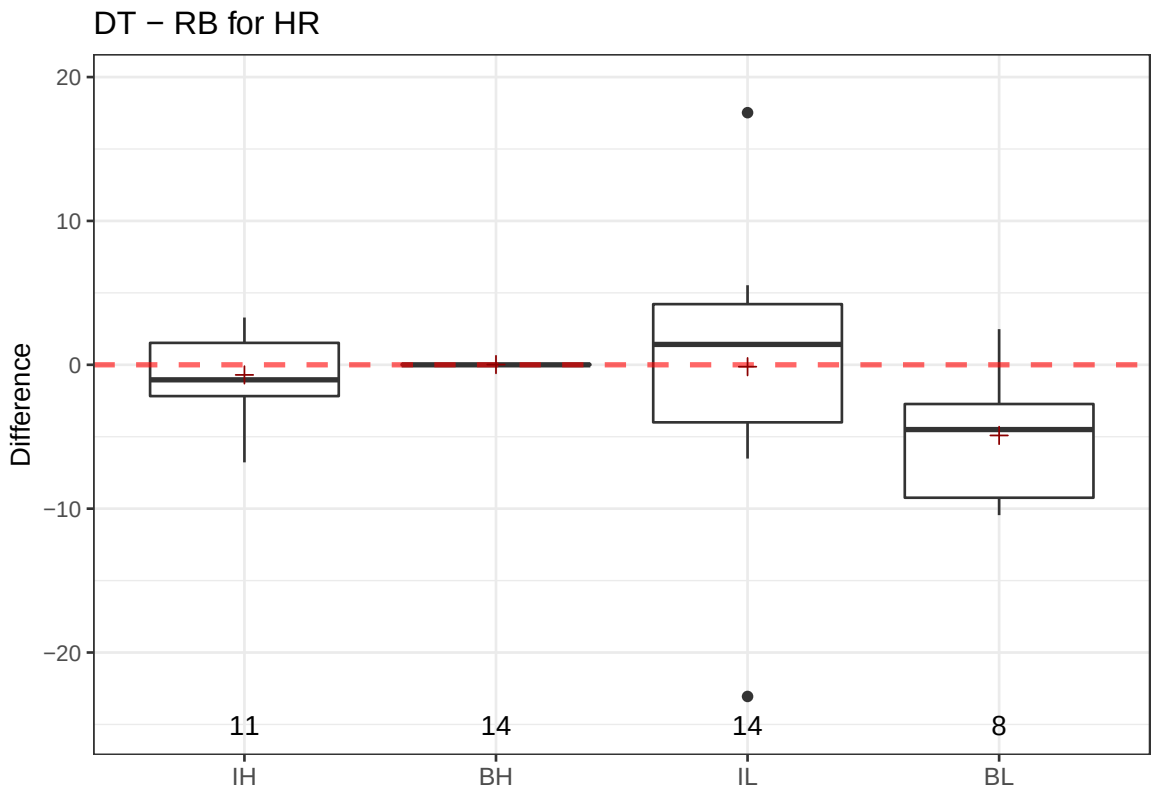



```
## Writing Baseline - Resting Baseline
## t-test p = 0.0916 > 0.05
##
## Stress Condition - Resting Baseline
## t-test p = 0.7428 > 0.05
##
## StressCondition - Writing Baseline
## t-test p = 0.0548 > 0.05
##
## Dual Task - Resting Baseline
## t-test p = 0.0695 > 0.05
##
## Dual Task - Writing Baseline
## t-test p = 0.1269 > 0.05
##
## Dual Task - Stress Condition
## t-test p = 0.0515 > 0.05
```

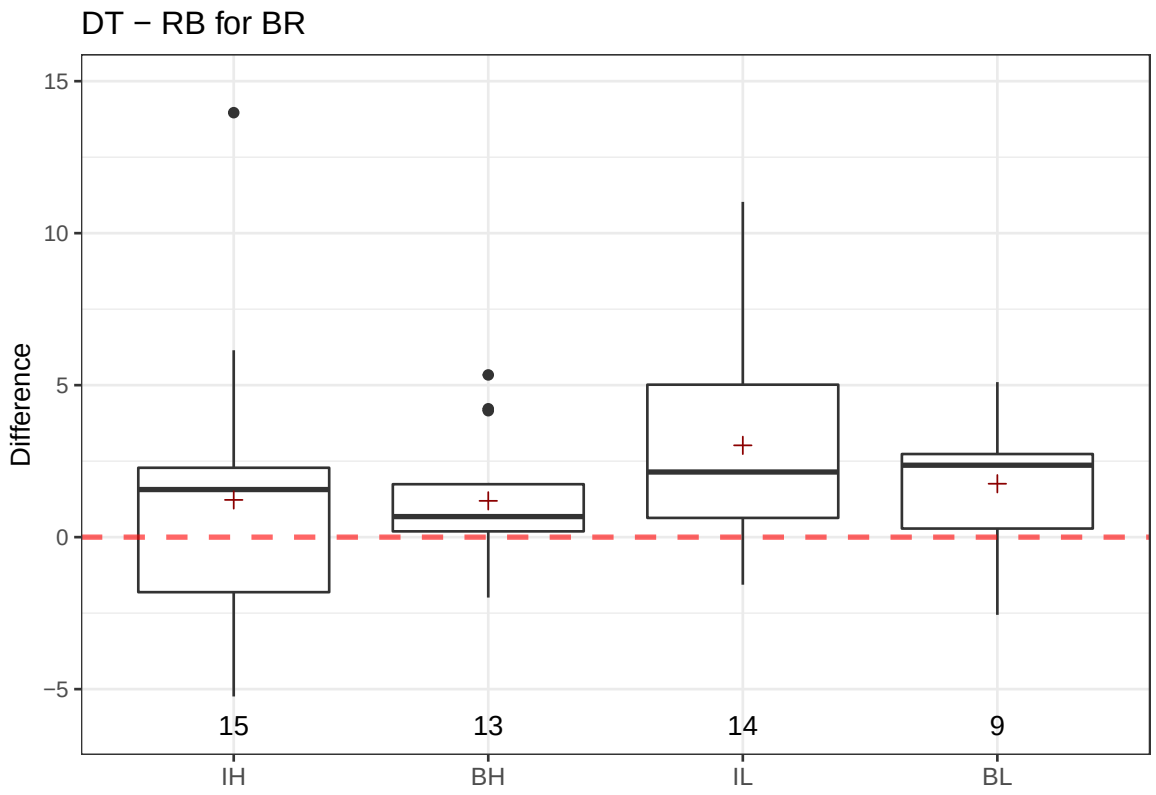
Across Sessions



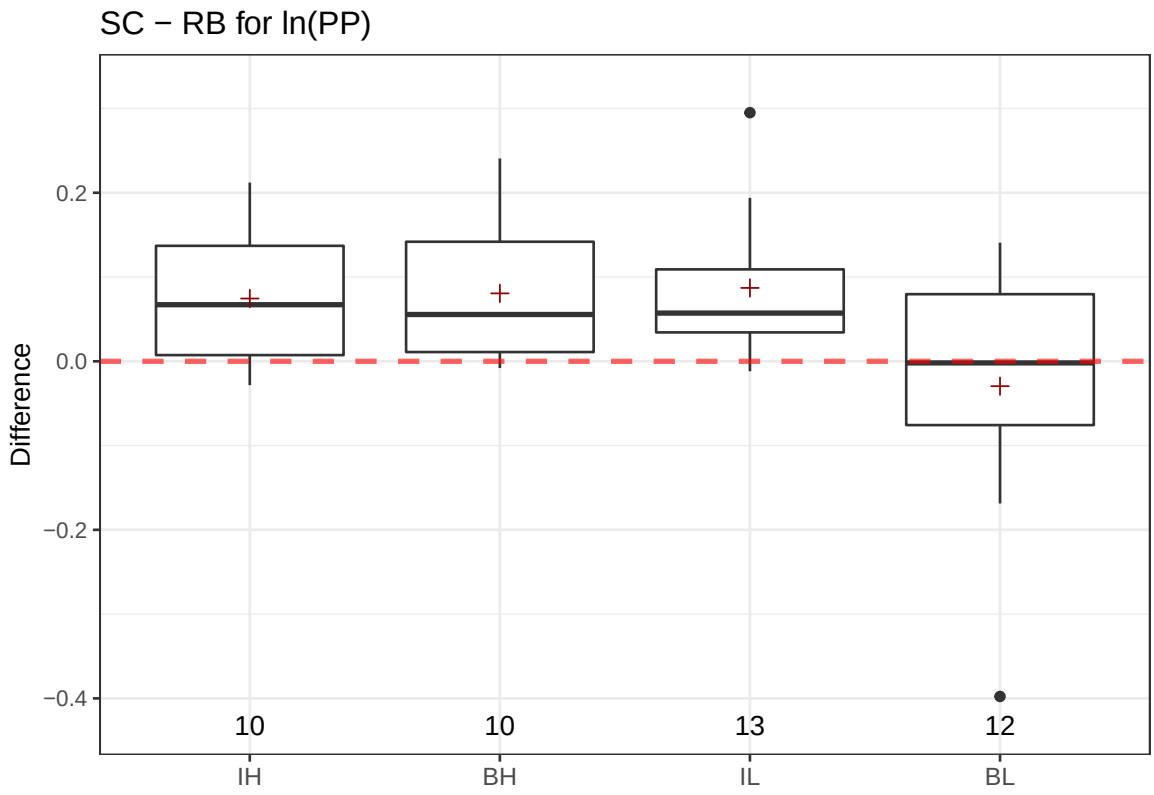

```
##             Df Sum Sq Mean Sq F value Pr(>F)
## Condition    3 0.0724 0.02414   1.517  0.221
## Residuals   51 0.8118 0.01592
##
## ---
##
##     Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = formula(paste(diff, "~ Condition")), data = anova_df)
##
## $Condition
##               diff         lwr        upr     p adj
## BL-BH -0.03329733 -0.16306662 0.09647197 0.9036770
## IH-BH  0.02779432 -0.09455335 0.15014198 0.9305491
## IL-BH  0.06961179 -0.05735439 0.19657796 0.4711187
## IH-BL  0.06109164 -0.06867765 0.19086094 0.5982748
## IL-BL  0.10290911 -0.03122339 0.23704161 0.1879064
## IL-IH  0.04181747 -0.08514870 0.16878364 0.8178728
```



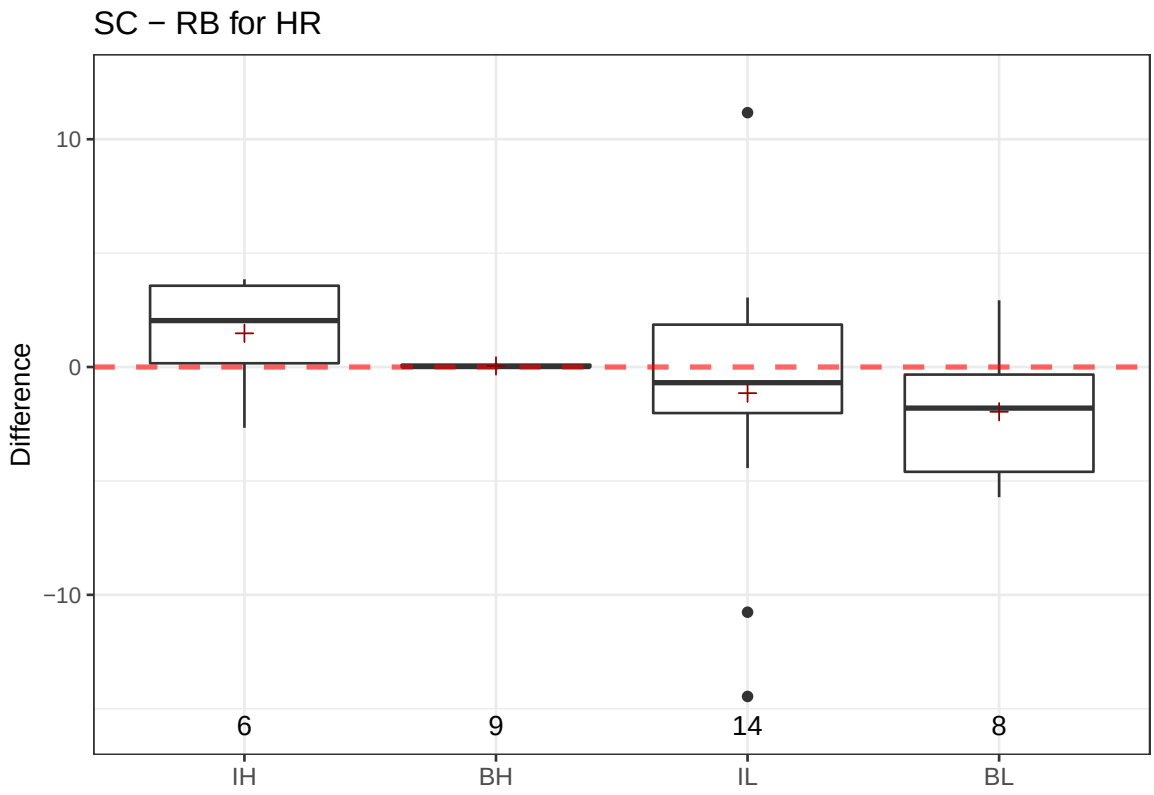

```
##             Df Sum Sq Mean Sq F value Pr(>F)
## Condition    3  148.2    49.4   1.669  0.188
## Residuals   43 1272.7    29.6
##
## ---
##
##     Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = formula(paste(diff, "~ Condition")), data = anova_df)
##
## $Condition
##              diff        lwr       upr     p adj
## BL-BH -4.9257293 -11.369363  1.517905 0.1885296
## IH-BH -0.7186071  -6.576456  5.139242 0.9876655
## IL-BH -0.1479398  -5.643089  5.347210 0.9998642
## IH-BL  4.2071221  -2.548479 10.962723 0.3547230
## IL-BL  4.7777895  -1.665844 11.221423 0.2107991
## IL-IH  0.5706674  -5.287182  6.428516 0.9937245
```



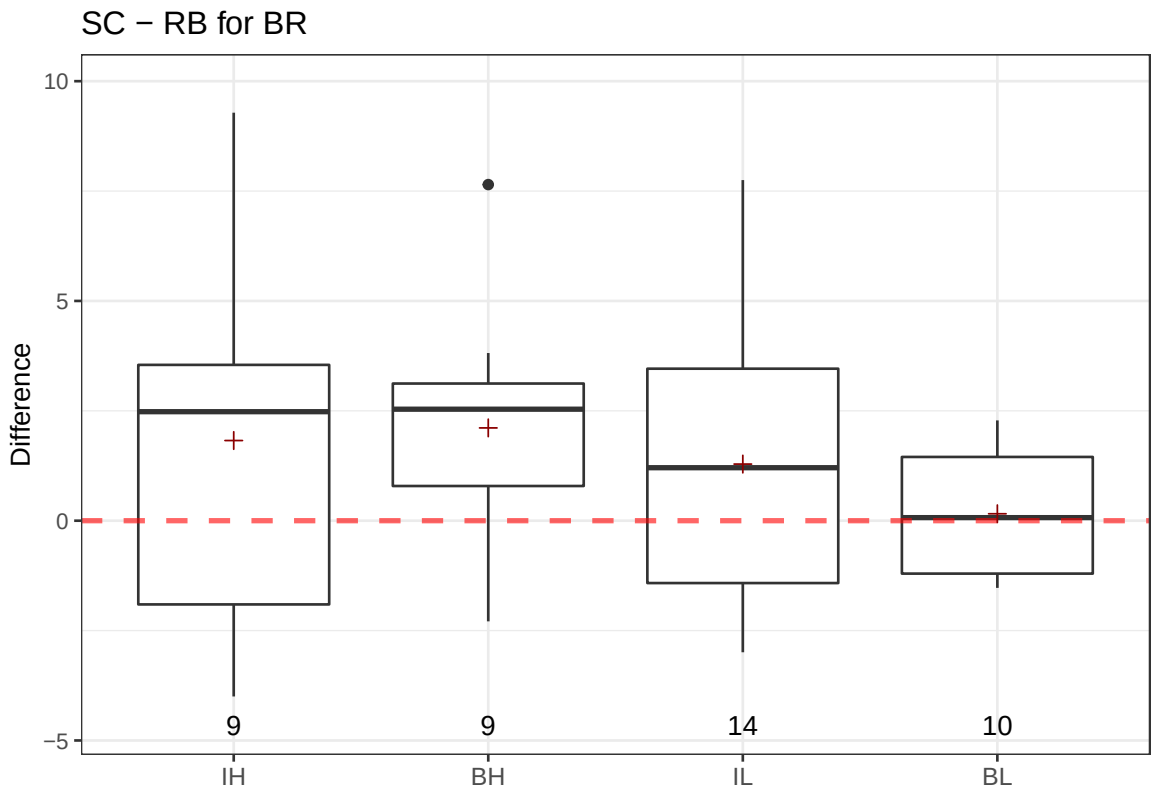

```
##             Df Sum Sq Mean Sq F value Pr(>F)
## Condition    3   30.6   10.19   0.785  0.508
## Residuals   47  610.3   12.98
##
## ---
##
##     Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = formula(paste(diff, "~ Condition")), data = anova_df)
##
## $Condition
##              diff       lwr      upr     p adj
## BL-BH  0.56288206 -3.598925 4.724689 0.9837998
## IH-BH  0.03130078 -3.605548 3.668149 0.9999956
## IL-BH  1.82566162 -1.871000 5.522323 0.5579624
## IH-BL -0.53158128 -4.578293 3.515130 0.9851142
## IL-BL  1.26277956 -2.837771 5.363330 0.8446226
## IL-IH  1.79436084 -1.772226 5.360948 0.5426749
```



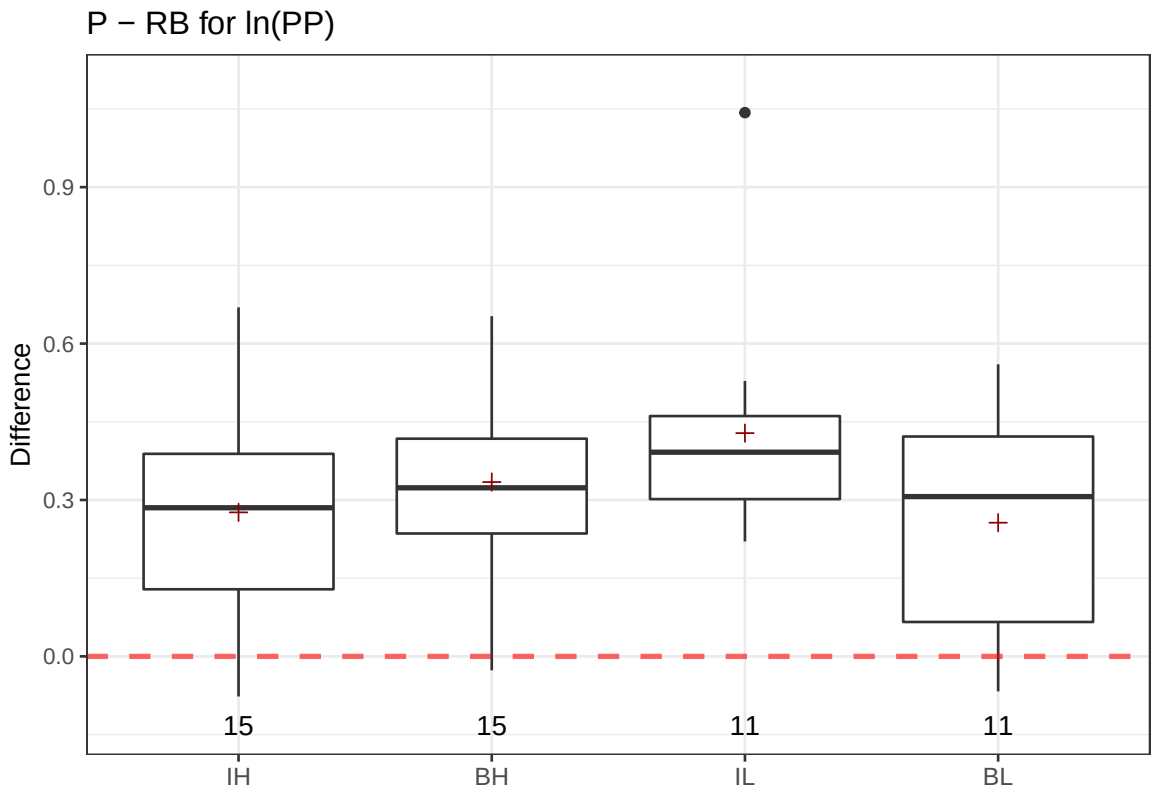

```
## [1] "Removed 12 subjects who had Stroop scores less than 30."
##
## ---
##               Df Sum Sq Mean Sq F value Pr(>F)
## Condition    3 0.1090 0.03632   3.207 0.0329 *
## Residuals   41 0.4644 0.01133
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ---
##
##     Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = formula(paste(diff, "~ Condition")), data = anova_df)
##
## $Condition
##                diff          lwr        upr     p adj
## BL-BH -0.110098677 -0.232118607 0.01192125 0.0898728
## IH-BH -0.006078721 -0.133524381 0.12136694 0.9992432
## IL-BH  0.006491587 -0.113376146 0.12635932 0.9988943
## IH-BL  0.104019956 -0.017999973 0.22603989 0.1188380
## IL-BL  0.116590265  0.002508099 0.23067243 0.0435330
## IL-IH  0.012570308 -0.107297425 0.13243804 0.9921553
```



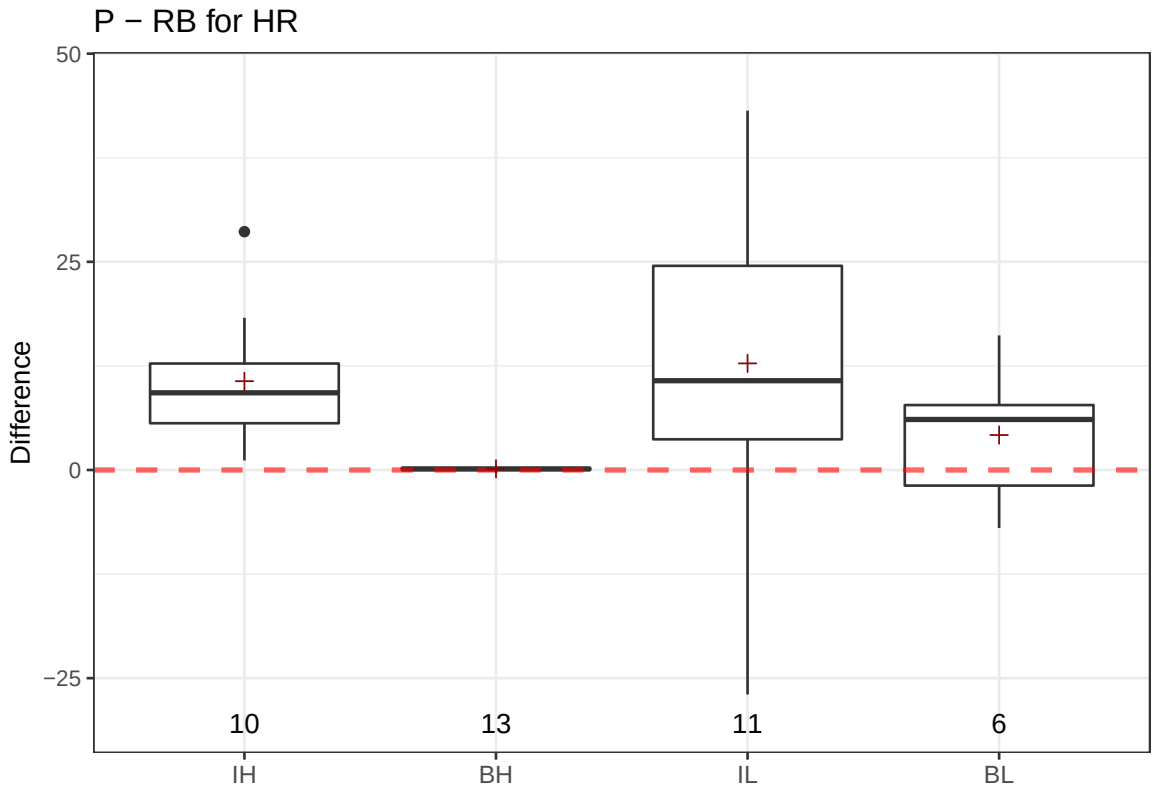

```
## [1] "Removed 12 subjects who had Stroop scores less than 30."
##
## ---
##               Df Sum Sq Mean Sq F value Pr(>F)
## Condition      3   48.8   16.27   0.932  0.436
## Residuals     33  576.0   17.45
##
## ---
##
##     Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = formula(paste(diff, "~ Condition")), data = anova_df)
##
## $Condition
##             diff       lwr      upr     p adj
## BL-BH -2.0133160 -7.504415 3.477783 0.7550819
## IH-BH  1.4303974 -4.525536 7.386331 0.9149259
## IL-BH -1.1960968 -6.024235 3.632042 0.9076004
## IH-BL  3.4437134 -2.659302 9.546729 0.4338003
## IL-BL  0.8172192 -4.191231 5.825670 0.9708163
## IL-IH -2.6264942 -8.140617 2.887629 0.5765866
```




```
## [1] "Removed 12 subjects who had Stroop scores less than 30."
##
## ---
##               Df Sum Sq Mean Sq F value Pr(>F)
## Condition      3   21.4   7.149   0.704  0.555
## Residuals     38  385.8  10.153
##
## ---
##
##     Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = formula(paste(diff, "~ Condition")), data = anova_df)
##
## $Condition
##             diff       lwr      upr     p adj
## BL-BH -1.9538117 -5.886873 1.979250 0.5472353
## IH-BH -0.2871680 -4.322404 3.748068 0.9974784
## IL-BH -0.8231676 -4.480411 2.834076 0.9299641
## IH-BL  1.6666437 -2.266418 5.599705 0.6684465
## IL-BL  1.1306441 -2.413545 4.674833 0.8267114
## IL-IH -0.5359996 -4.193243 3.121244 0.9789960
```




```
##             Df Sum Sq Mean Sq F value Pr(>F)
## Condition    3 0.2052 0.06839   1.665  0.187
## Residuals   48 1.9717 0.04108
##
## ---
##
##     Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = formula(paste(diff, "~ Condition")), data = anova_df)
##
## $Condition
##               diff         lwr       upr     p adj
## BL-BH -0.07795670 -0.29207358 0.1361602 0.7676032
## IH-BH -0.05813156 -0.25509044 0.1388273 0.8606695
## IL-BH  0.09389197 -0.12022491 0.3080088 0.6502666
## IH-BL  0.01982514 -0.19429173 0.2339420 0.9946723
## IL-BL  0.17184867 -0.05814975 0.4018471 0.2065627
## IL-IH  0.15202352 -0.06209335 0.3661404 0.2460481
```




```
##             Df Sum Sq Mean Sq F value Pr(>F)
## Condition    3   1163   387.7   2.922 0.0471 *
## Residuals   36   4777   132.7
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ---
##
##     Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = formula(paste(diff, "~ Condition")), data = anova_df)
##
## $Condition
##            diff          lwr      upr     p adj
## BL-BH  4.061217 -11.25116681 19.37360 0.8907643
## IH-BH 10.527892  -2.52195840 23.57774 0.1503088
## IL-BH 12.663910  -0.04624692 25.37407 0.0511343
## IH-BL  6.466676  -9.55462121 22.48797 0.6995544
## IL-BL  8.602693  -7.14314547 24.34853 0.4647807
## IL-IH  2.136017 -11.41982783 15.69186 0.9739392
```

Summary

Condition	Difference	Measure	p	Test	n	Significance
BH	WB - RB	PP	0.0219462	t-test	15	*
BH	WB - RB	HR	0.0000130	Transformed t-test	14	***
BH	WB - RB	BR	0.0001138	t-test	14	***
BH	SC - RB	PP	0.1778303	t-test	14	
BH	SC - RB	HR	0.0327106	Transformed t-test	14	*
BH	SC - RB	BR	0.0167176	t-test	14	*
BH	SC - WB	PP	0.0973689	t-test	14	
BH	SC - WB	HR	0.3940901	Transformed t-test	14	
BH	SC - WB	BR	0.1543122	t-test	14	
BH	DT - RB	PP	0.0363198	t-test	15	*
BH	DT - RB	HR	0.2171923	Transformed t-test	14	
BH	DT - RB	BR	0.0744732	t-test	13	
BH	DT - WB	PP	0.5259981	t-test	15	
BH	DT - WB	HR	0.0024620	Transformed t-test	14	**
BH	DT - WB	BR	0.0000095	t-test	13	***
BH	DT - SC	PP	0.0629673	t-test	14	
BH	DT - SC	HR	0.0971471	Transformed t-test	14	
BH	DT - SC	BR	0.1008707	t-test	13	
BH	P - RB	PP	0.0000026	t-test	15	***
BH	P - RB	HR	0.0047967	Transformed t-test	13	**
BH	P - WB	PP	0.0000551	t-test	15	***
BH	P - WB	HR	0.0411070	Transformed t-test	13	*
BH	P - SC	PP	0.0000624	t-test	14	***
BH	P - SC	HR	0.0161774	Transformed t-test	13	*
BH	P - DT	PP	0.0000121	t-test	15	***
BH	P - DT	HR	0.0094598	Transformed t-test	13	**
BL	WB - RB	PP	0.8527534	t-test	12	
BL	WB - RB	HR	0.9869320	t-test	8	
BL	WB - RB	BR	0.0915679	t-test	10	
BL	SC - RB	PP	0.5007411	t-test	12	
BL	SC - RB	HR	0.1034335	t-test	8	
BL	SC - RB	BR	0.7428199	t-test	10	
BL	SC - WB	PP	0.4870669	t-test	12	
BL	SC - WB	HR	0.2170117	t-test	8	
BL	SC - WB	BR	0.0548135	t-test	10	
BL	DT - RB	PP	0.2429693	t-test	12	
BL	DT - RB	HR	0.0200050	t-test	8	*
BL	DT - RB	BR	0.0694710	t-test	9	
BL	DT - WB	PP	0.0493536	t-test	12	*
BL	DT - WB	HR	0.0230059	t-test	8	*
BL	DT - WB	BR	0.1268540	t-test	9	
BL	DT - SC	PP	0.0364783	t-test	12	*
BL	DT - SC	HR	0.0023709	t-test	8	**
BL	DT - SC	BR	0.0515357	t-test	9	
BL	P - RB	PP	0.0026388	t-test	11	**

(continued)

Condition	Difference	Measure	p	Test	n	Significance
BL	P - RB	HR	0.2800986	t-test	6	
BL	P - WB	PP	0.0030397	t-test	11	**
BL	P - WB	HR	0.2075354	t-test	6	
BL	P - SC	PP	0.0038631	t-test	11	**
BL	P - SC	HR	0.0855441	t-test	6	
BL	P - DT	PP	0.0575016	t-test	11	
BL	P - DT	HR	0.0152101	t-test	6	*
IH	WB - RB	PP	0.0004706	t-test	15	***
IH	WB - RB	HR	0.0188344	t-test	11	*
IH	WB - RB	BR	0.0074935	t-test	15	**
IH	SC - RB	PP	0.0096267	t-test	14	**
IH	SC - RB	HR	0.3552732	t-test	10	
IH	SC - RB	BR	0.1188954	t-test	15	
IH	SC - WB	PP	0.2539293	t-test	14	
IH	SC - WB	HR	0.0243429	t-test	10	*
IH	SC - WB	BR	0.0317792	t-test	15	*
IH	DT - RB	PP	0.0000286	t-test	15	***
IH	DT - RB	HR	0.4334571	t-test	11	
IH	DT - RB	BR	0.3322883	t-test	15	
IH	DT - WB	PP	0.0742164	t-test	15	
IH	DT - WB	HR	0.0035532	t-test	11	**
IH	DT - WB	BR	0.0022952	t-test	15	**
IH	DT - SC	PP	0.0421551	t-test	14	*
IH	DT - SC	HR	0.1613719	t-test	10	
IH	DT - SC	BR	0.5106319	t-test	15	
IH	P - RB	PP	0.0001365	t-test	15	***
IH	P - RB	HR	0.0023820	t-test	10	**
IH	P - WB	PP	0.0033095	t-test	15	**
IH	P - WB	HR	0.0288561	t-test	10	*
IH	P - SC	PP	0.0018224	t-test	14	**
IH	P - SC	HR	0.0063270	t-test	10	**
IH	P - DT	PP	0.0054071	t-test	15	**
IH	P - DT	HR	0.0014945	t-test	10	**
IL	WB - RB	PP	0.0001706	t-test	13	***
IL	WB - RB	HR	0.0318164	t-test	14	*
IL	WB - RB	BR	0.0029280	t-test	13	**
IL	SC - RB	PP	0.0047788	t-test	13	**
IL	SC - RB	HR	0.4931241	t-test	14	
IL	SC - RB	BR	0.1716031	t-test	14	
IL	SC - WB	PP	0.1501126	t-test	13	
IL	SC - WB	HR	0.0000160	t-test	14	***
IL	SC - WB	BR	0.0056543	t-test	13	**
IL	DT - RB	PP	0.0000074	t-test	13	***
IL	DT - RB	HR	0.9564261	t-test	14	
IL	DT - RB	BR	0.0109817	t-test	14	*
IL	DT - WB	PP	0.4897627	t-test	13	
IL	DT - WB	HR	0.0153782	t-test	14	*

(continued)

Condition	Difference	Measure	p	Test	n	Significance
IL	DT - WB	BR	0.0141019	t-test	13	*
IL	DT - SC	PP	0.0502407	t-test	13	
IL	DT - SC	HR	0.4432256	t-test	14	
IL	DT - SC	BR	0.0396767	t-test	14	*
IL	P - RB	PP	0.0000892	t-test	11	***
IL	P - RB	HR	0.0552440	t-test	11	
IL	P - WB	PP	0.0054046	t-test	11	**
IL	P - WB	HR	0.1202428	t-test	11	
IL	P - SC	PP	0.0011554	t-test	11	**
IL	P - SC	HR	0.0209275	t-test	11	*
IL	P - DT	PP	0.0015878	t-test	11	**
IL	P - DT	HR	0.0093801	t-test	11	**