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:

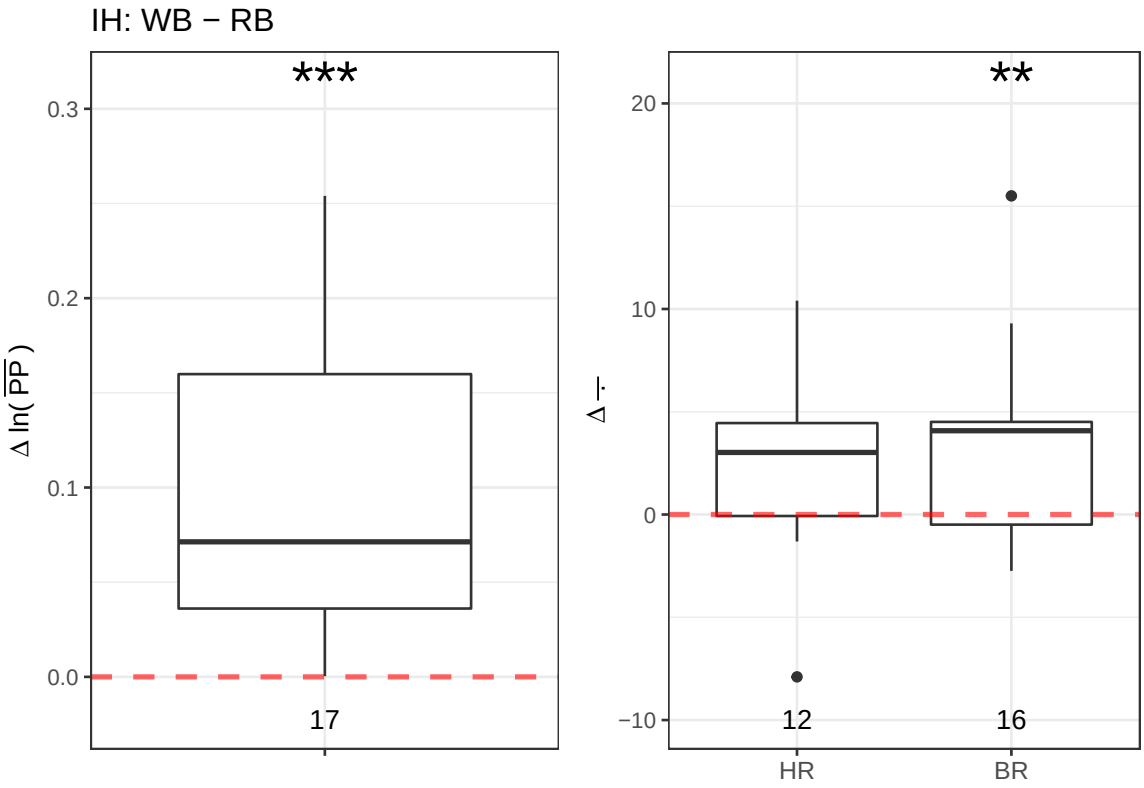
`*` = 0.01 < p <= 0.05
`**` = 0.001 < p <= 0.01
`***` = p <= 0.001
`?` = Did not run statistical test ($n < 7$)

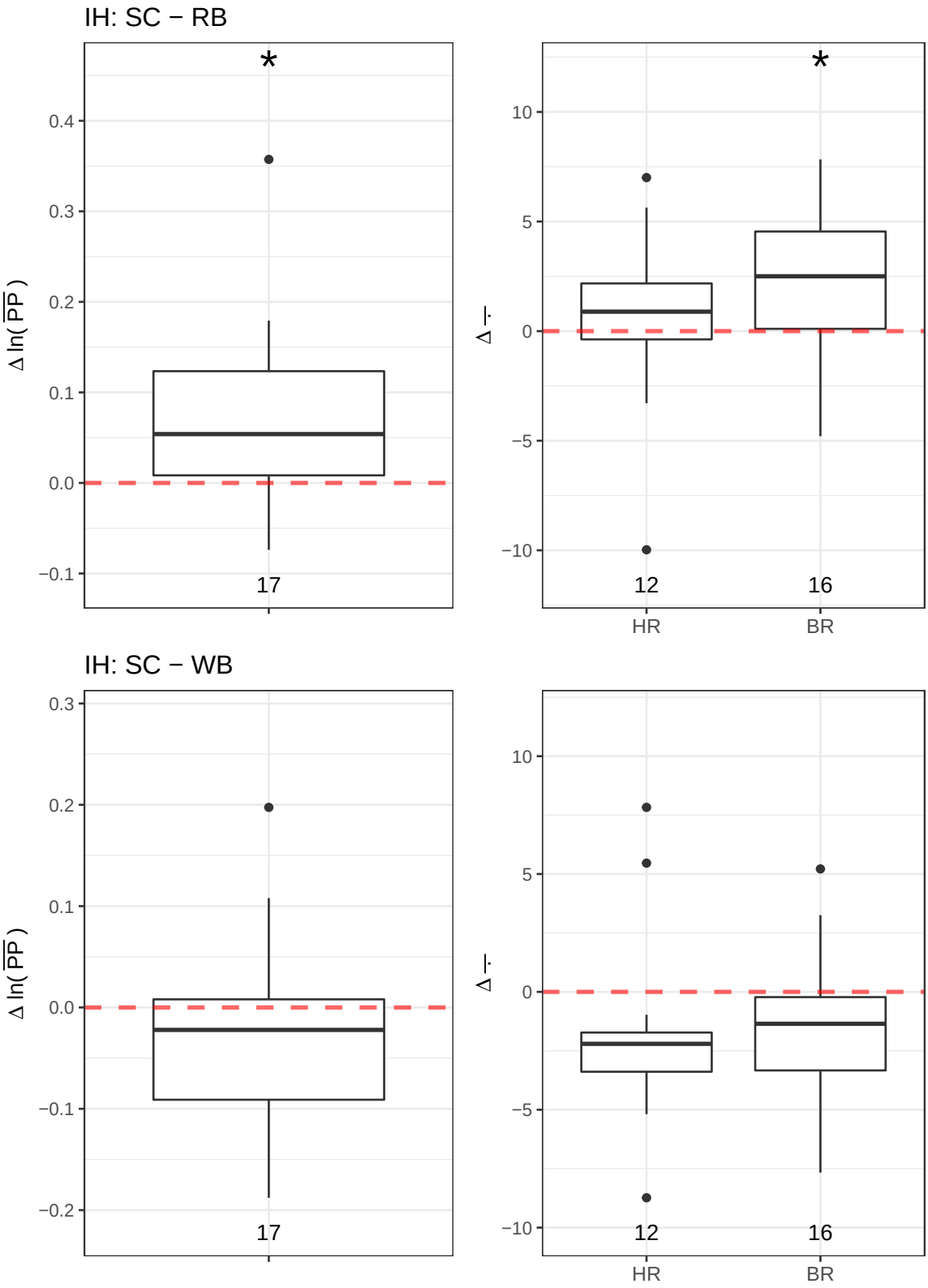
Differences in **Reduced Sensor Set**:

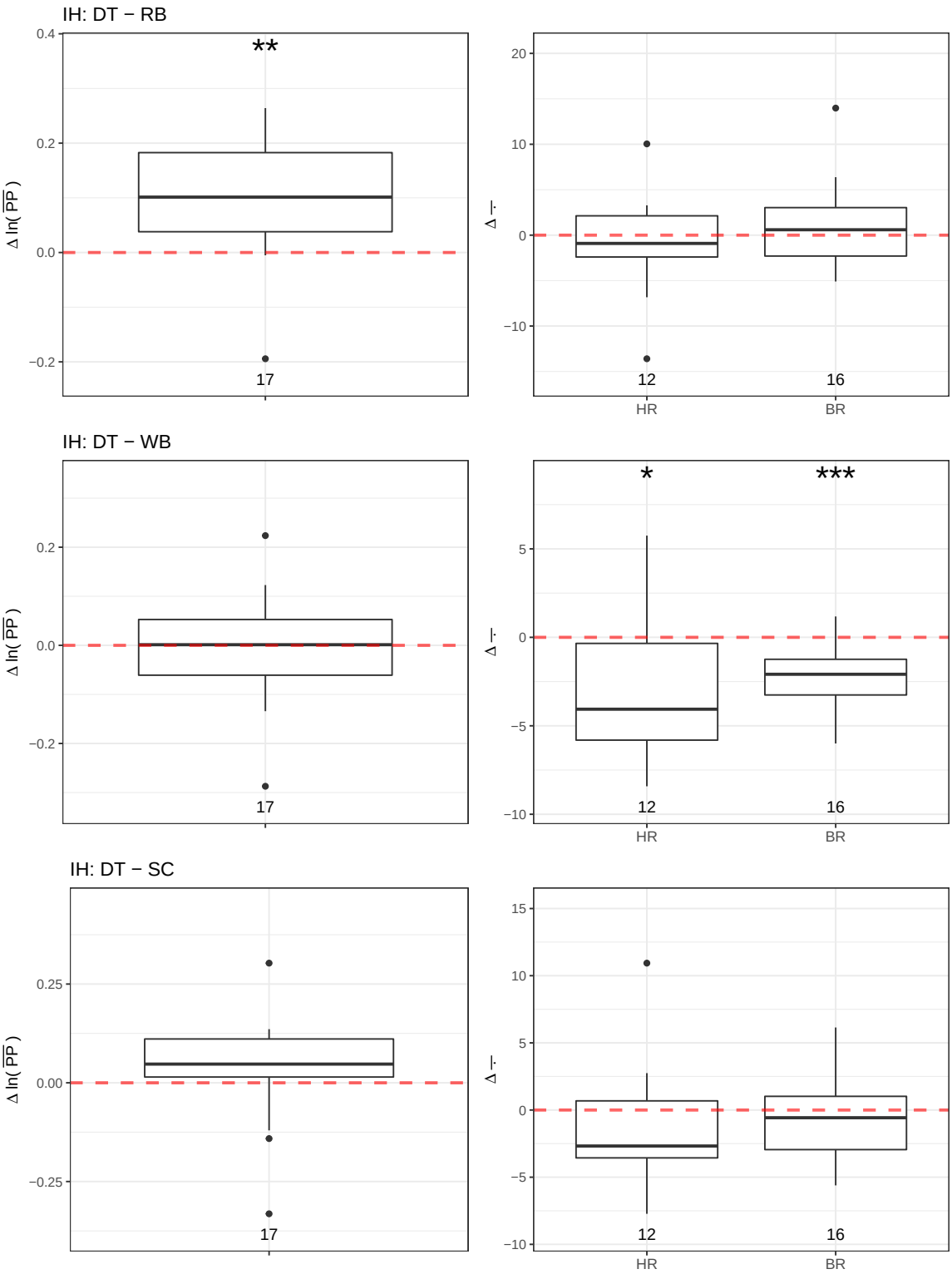
- Signals for `D.EDA`, `N.EDA`, `D.HR`, and `N.HR` and removed completely.
- `Breathing Rate (BR)` measurements for the `Presentation` session are removed completely.
- Easier on the eyes.

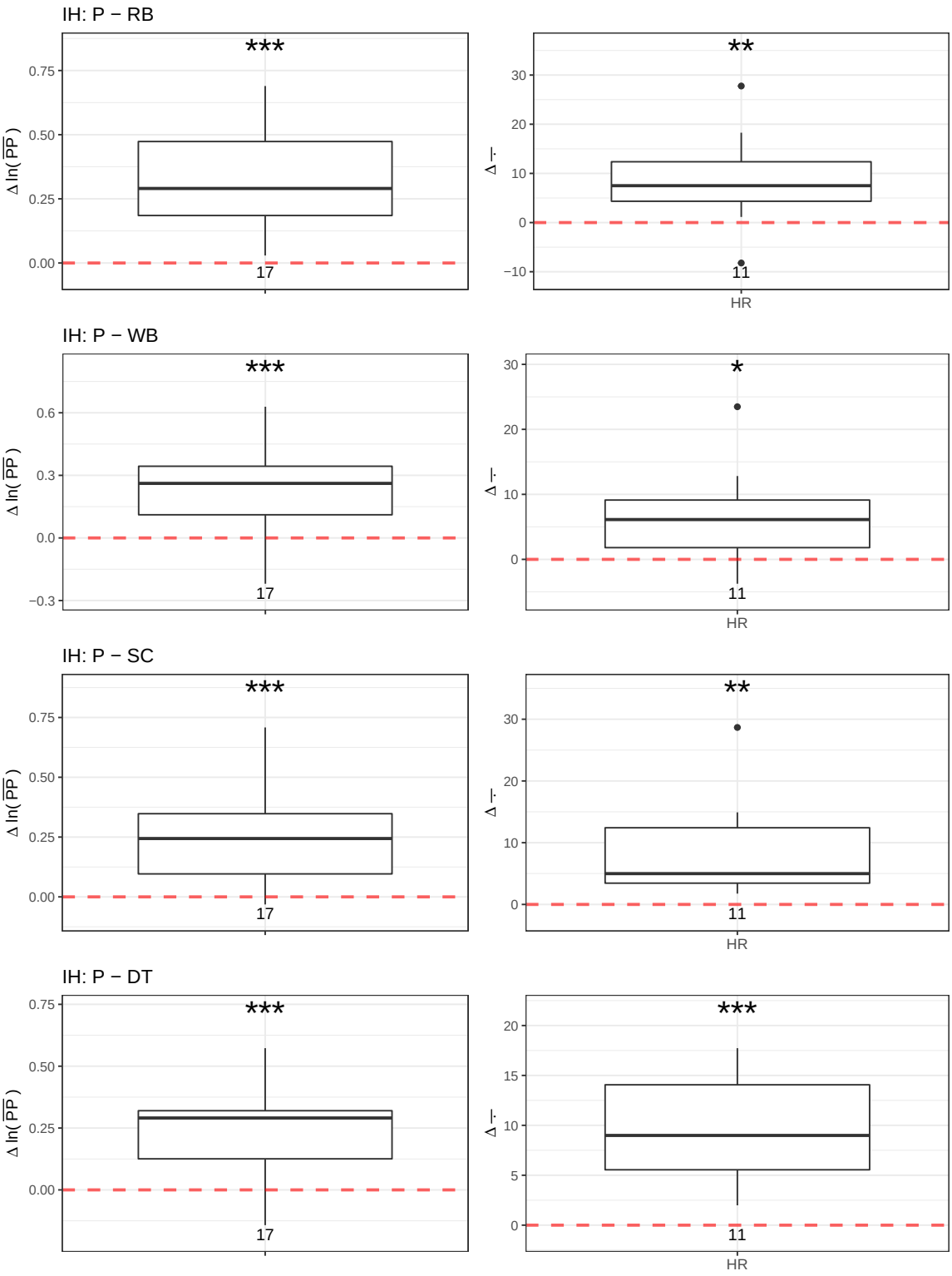
Intermittent-High (IH)

Sensor Channels per Session

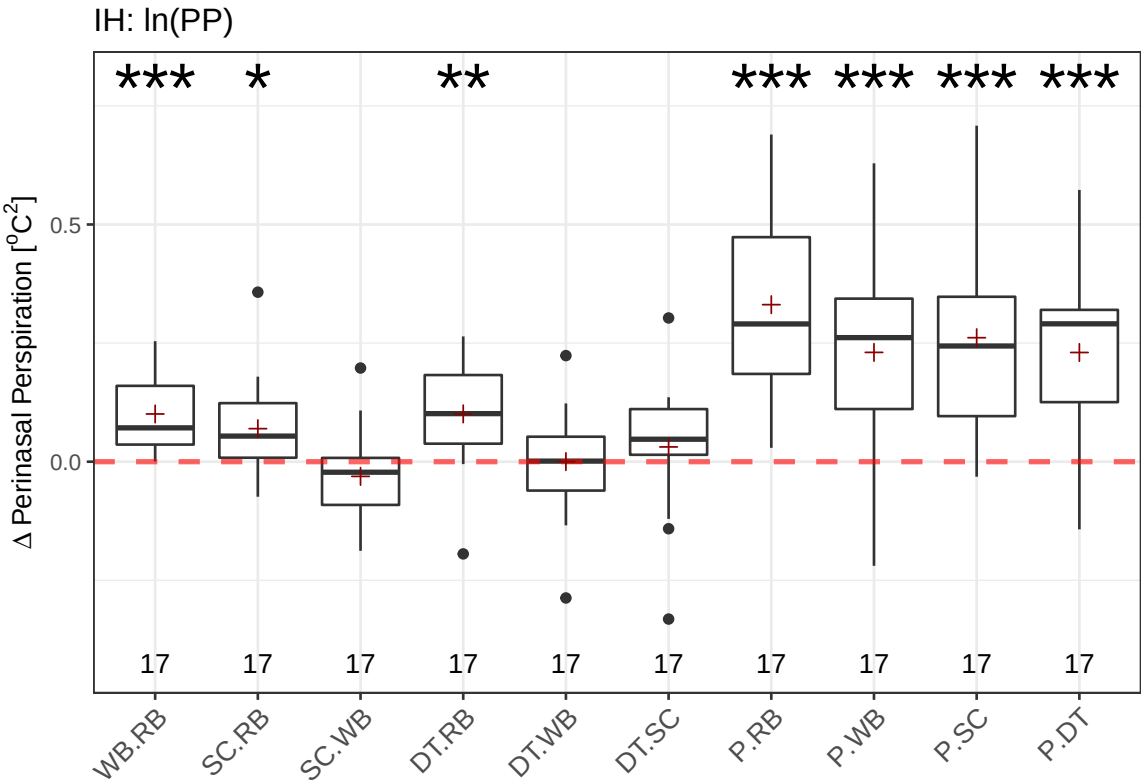



IH: SC − RB
Δ ln(PP)
0.4
0.3
0.2
0.1
0.0
−0.1
*
17
Δ
10
5
0
−5
−10
*
12
16
HR
BR
IH: SC − WB
Δ ln(PP)
0.3
0.2
0.1
0.0
−0.1
−0.2
17
Δ
10
5
0
−5
−10
12
16
HR
BR


IH: DT − RB
**
0.4
0.2
0.0
−0.2
Δ ln(PP)
17
20
10
0
−10
Δ
12
16
HR
BR
IH: DT − WB
*
***
0.2
0.0
−0.2
Δ ln(PP)
17
5
0
−5
−10
Δ
12
16
HR
BR
IH: DT − SC
0.25
0.00
−0.25
Δ ln(PP)
17
15
10
5
0
−5
−10
Δ
12
16
HR
BR

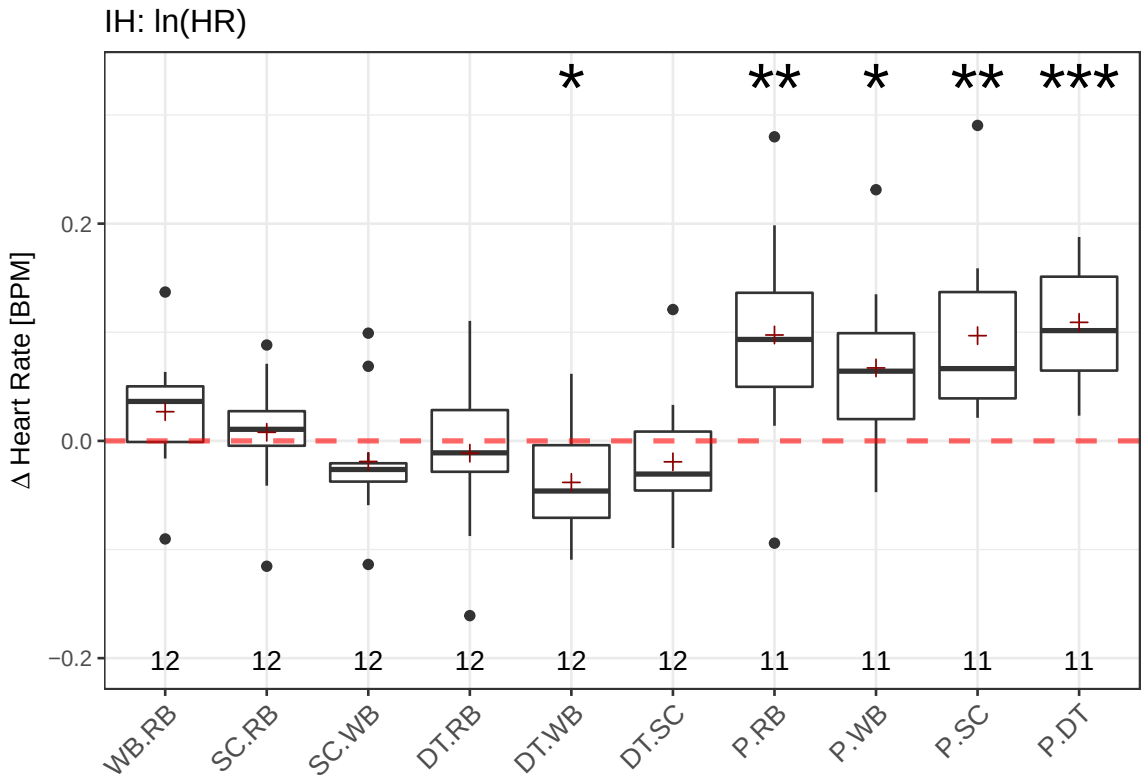

IH: P − RB
***
**
0.75
0.50
0.25
0.00
30
20
10
0
−10
17
11
HR
IH: P − WB
***
*
0.6
0.3
0.0
−0.3
30
20
10
0
17
11
HR
IH: P − SC
***
**
0.75
0.50
0.25
0.00
30
20
10
0
17
11
HR
IH: P − DT
***
***
0.75
0.50
0.25
0.00
20
15
10
5
0
17
11
HR

Sensor Channel across Session



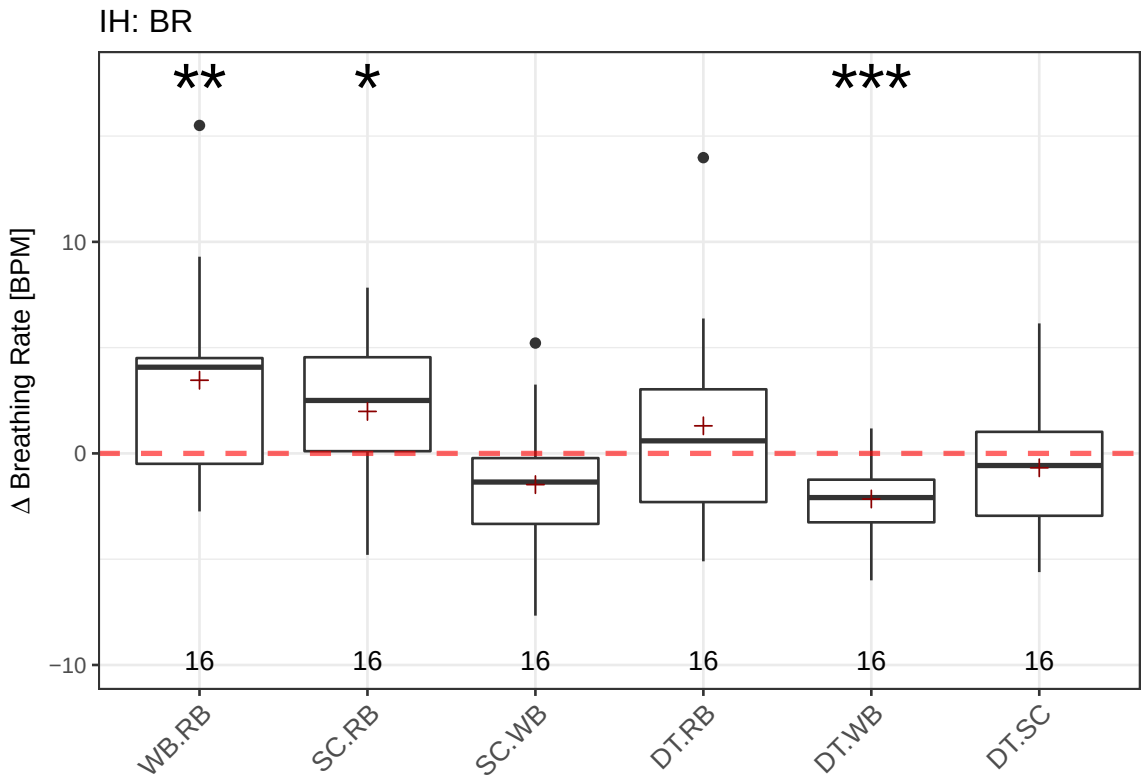

```
## In the following tests, we applied ln(PP).
##
## Writing Baseline - Resting Baseline
## t-test p = 1e-04 < 0.001  ***
##
## Stress Condition - Resting Baseline
## t-test p = 0.0145 < 0.05  *
##
## StressCondition - Writing Baseline
## t-test p = 0.2084 > 0.05
##
## Dual Task - Resting Baseline
## t-test p = 0.0016 < 0.01  **
##
## Dual Task - Writing Baseline
## t-test p = 0.9946 > 0.05
##
## Dual Task - Stress Condition
## t-test p = 0.3697 > 0.05
##
## Presentation - Resting Baseline
## t-test p = 0 < 0.001  ***
##
```

```
## Presentation - Writing Baseline
## t-test p = 2e-04 < 0.001  ***
##
## Presentation - Stress Condition
## t-test p = 1e-04 < 0.001  ***
##
## Presentation - Dual Task
## t-test p = 2e-04 < 0.001  ***
```




```
## Writing Baseline - Resting Baseline
## Transformed t-test p = 0.1185 > 0.05
##
## Stress Condition - Resting Baseline
## Transformed t-test p = 0.6095 > 0.05
##
## StressCondition - Writing Baseline
## Transformed t-test p = 0.2597 > 0.05
##
## Dual Task - Resting Baseline
## Transformed t-test p = 0.5735 > 0.05
##
## Dual Task - Writing Baseline
## Transformed t-test p = 0.0172 < 0.05  *
##
## Dual Task - Stress Condition
## Transformed t-test p = 0.2853 > 0.05
##
## Presentation - Resting Baseline
## Transformed t-test p = 0.0079 < 0.01  **
##
## Presentation - Writing Baseline
## Transformed t-test p = 0.0153 < 0.05  *
##
## Presentation - Stress Condition
## Transformed t-test p = 0.0026 < 0.01  **
```

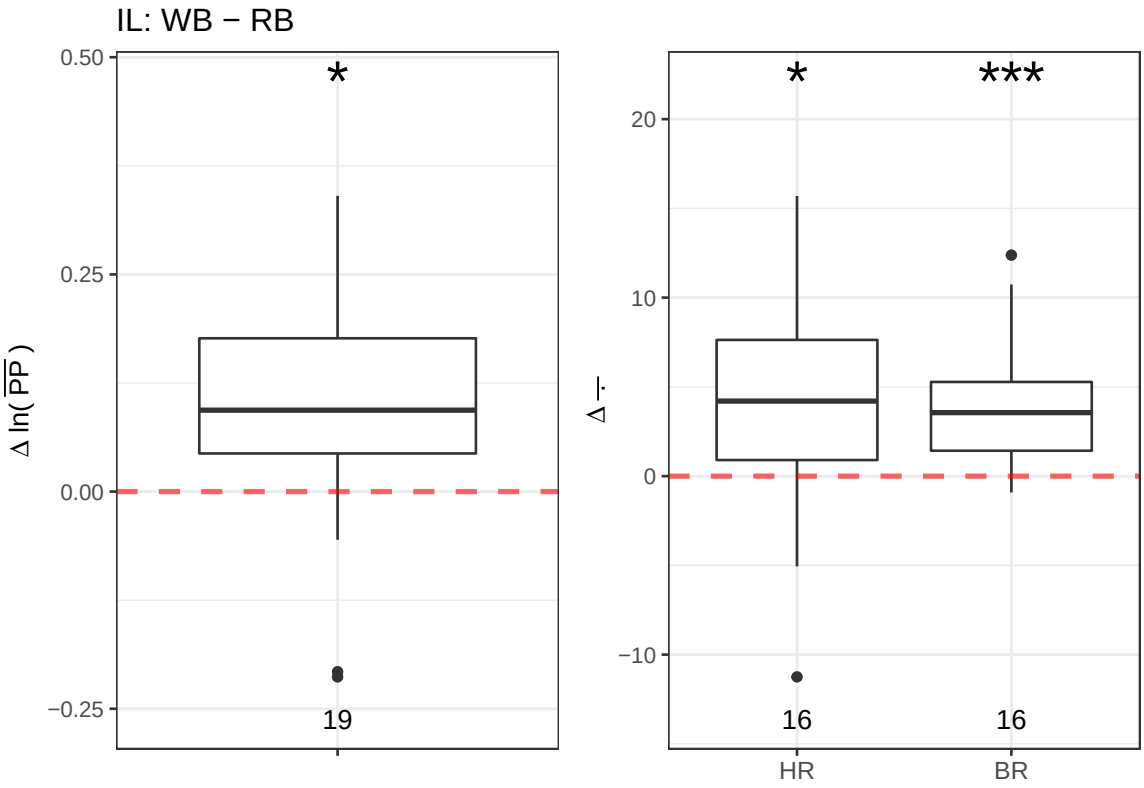
```
##
## Presentation - Dual Task
## Transformed t-test p = 0 < 0.001  ***
```

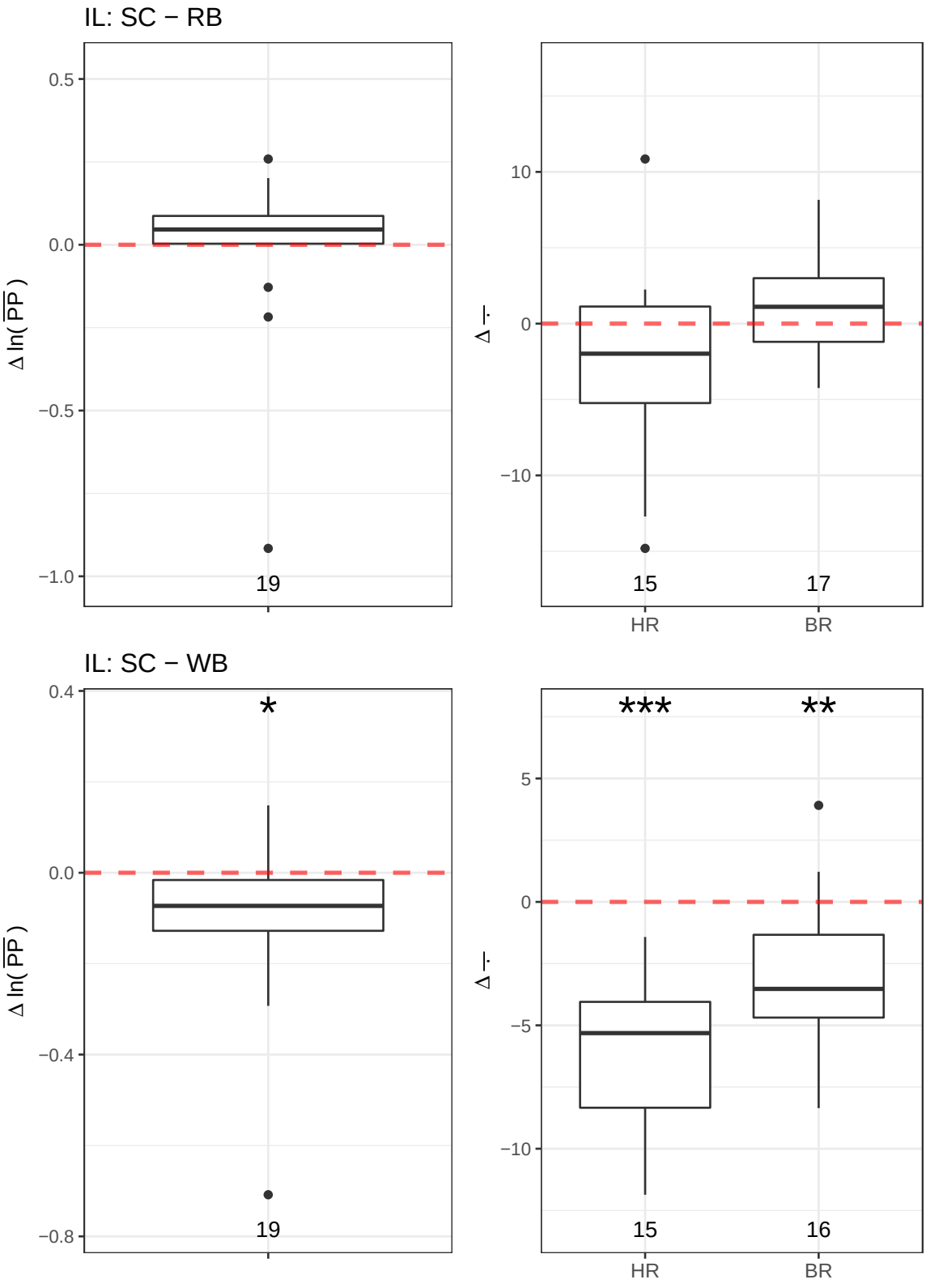


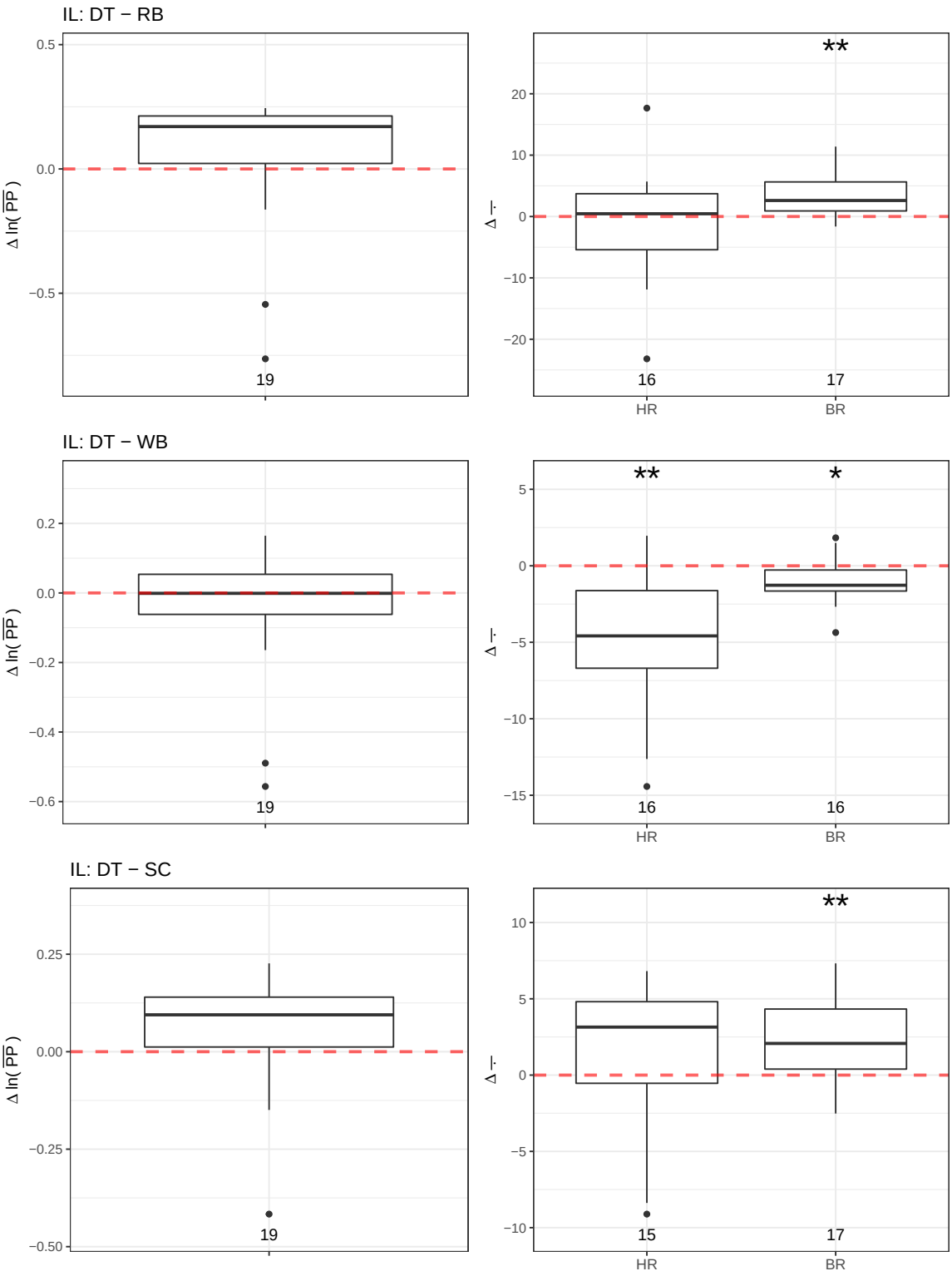

```
## Writing Baseline - Resting Baseline
## t-test p = 0.0086 < 0.01  **
##
## Stress Condition - Resting Baseline
## t-test p = 0.0455 < 0.05  *
##
## StressCondition - Writing Baseline
## t-test p = 0.0933 > 0.05
##
## Dual Task - Resting Baseline
## t-test p = 0.2969 > 0.05
##
## Dual Task - Writing Baseline
## t-test p = 5e-04 < 0.001  ***
##
## Dual Task - Stress Condition
## t-test p = 0.3543 > 0.05
```

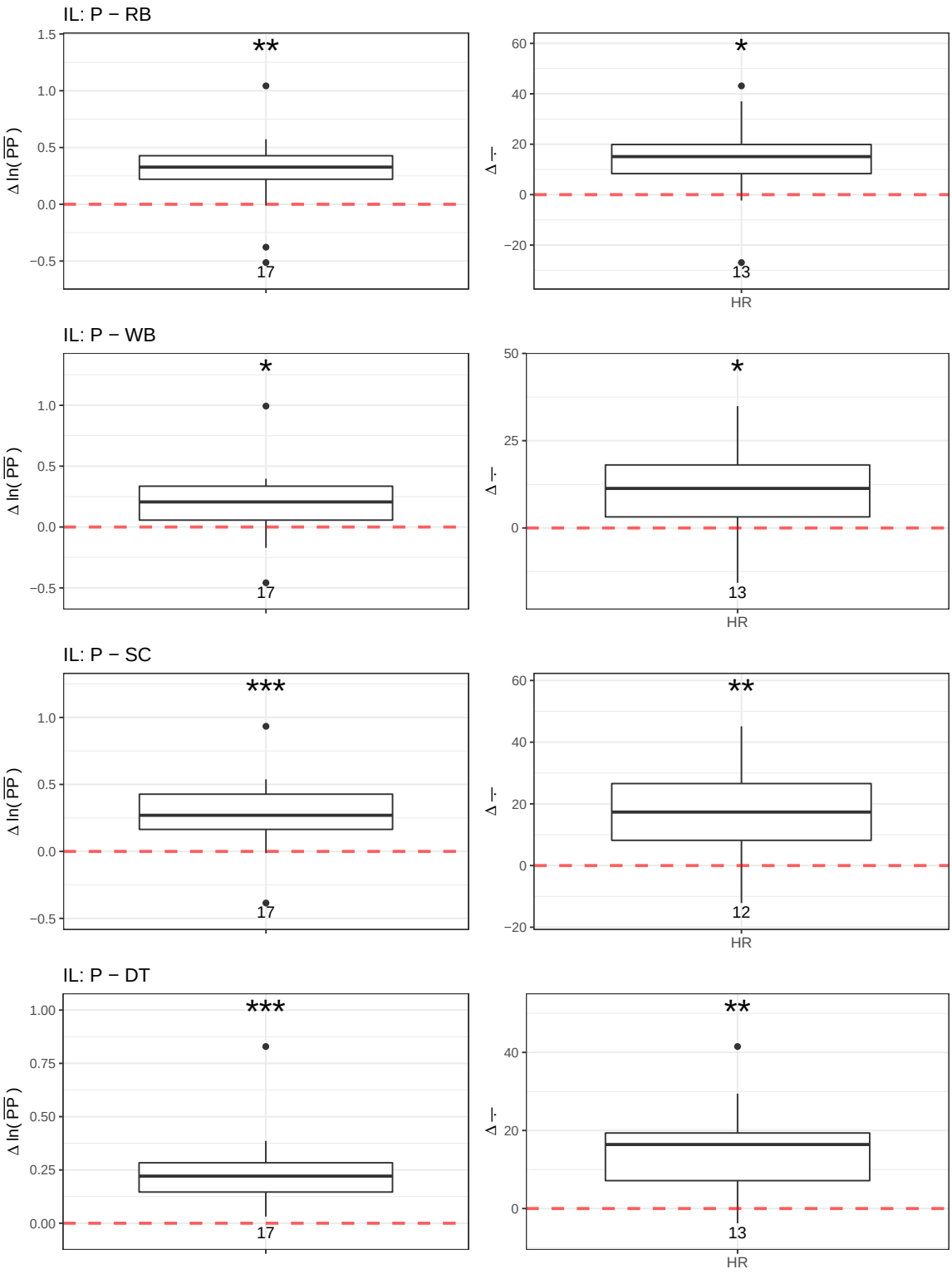
Intermittent-Low (IL)

Sensor Channels per Session

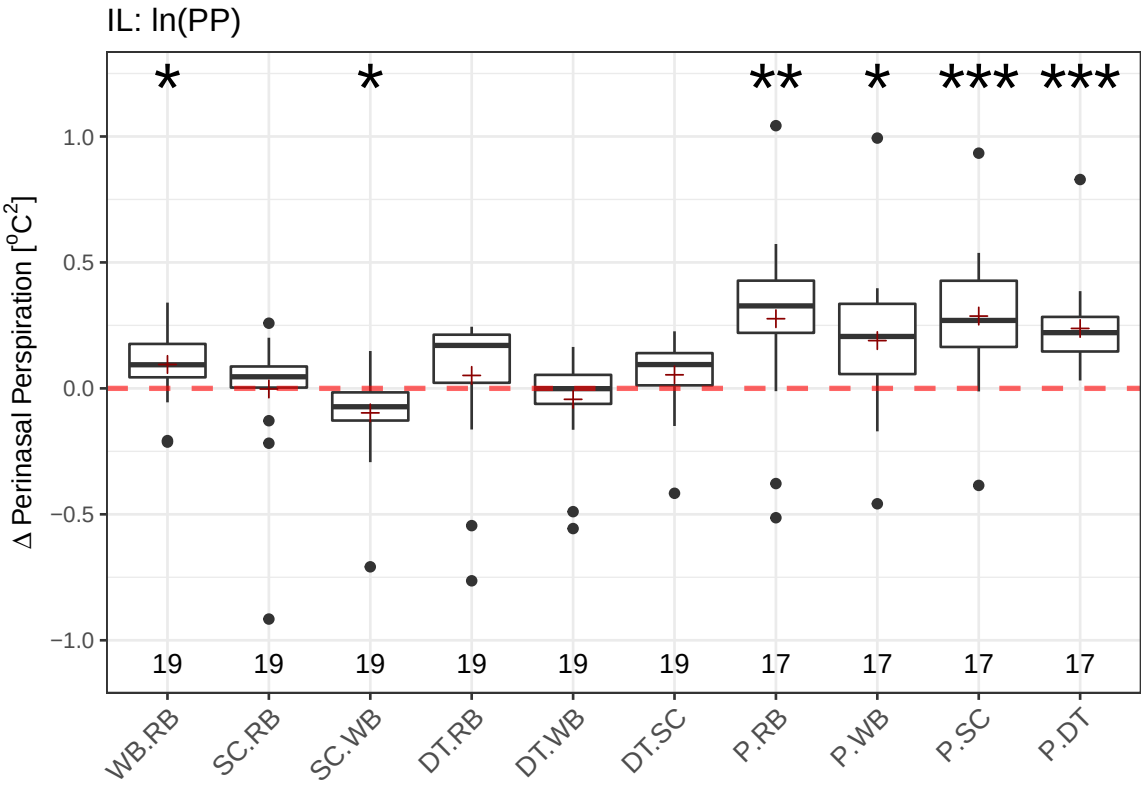



IL: SC − RB
0.5
0.0
−0.5
−1.0
Δ ln(PP)
19
10
0
−10
Δ
15
17
HR
BR
IL: SC − WB
0.4
0.0
−0.4
−0.8
Δ ln(PP)
*
19
***
**
5
0
−5
−10
Δ
15
16
HR
BR


IL: DT − RB
0.5
0.0
−0.5
Δ ln(PP)
19
**
20
10
0
−10
−20
Δ
16
17
HR
BR
IL: DT − WB
0.2
0.0
−0.2
−0.4
−0.6
Δ ln(PP)
19
**
*
5
0
−5
−10
−15
Δ
16
16
HR
BR
IL: DT − SC
0.25
0.00
−0.25
−0.50
Δ ln(PP)
19
**
10
5
0
−5
−10
Δ
15
17
HR
BR

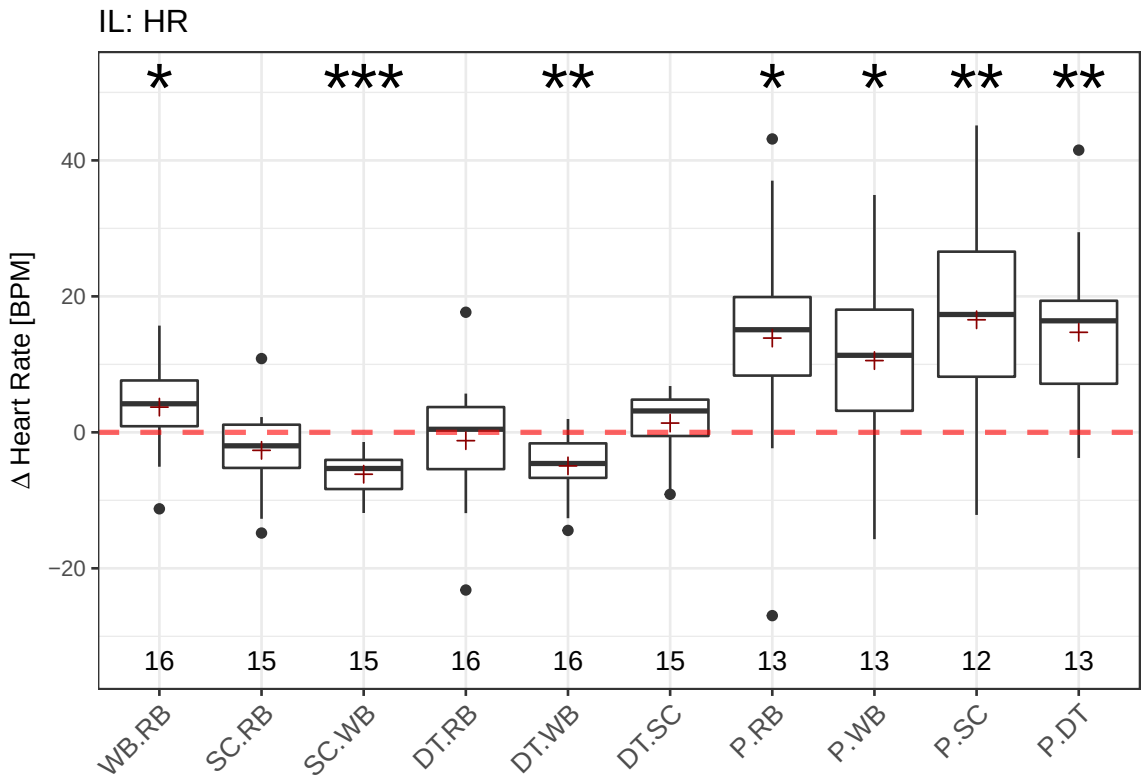

IL: P − RB
**
*
17
13
HR
IL: P − WB
*
*
17
13
HR
IL: P − SC
***
**
17
12
HR
IL: P − DT
***
**
17
13
HR

Sensor Channel across Session



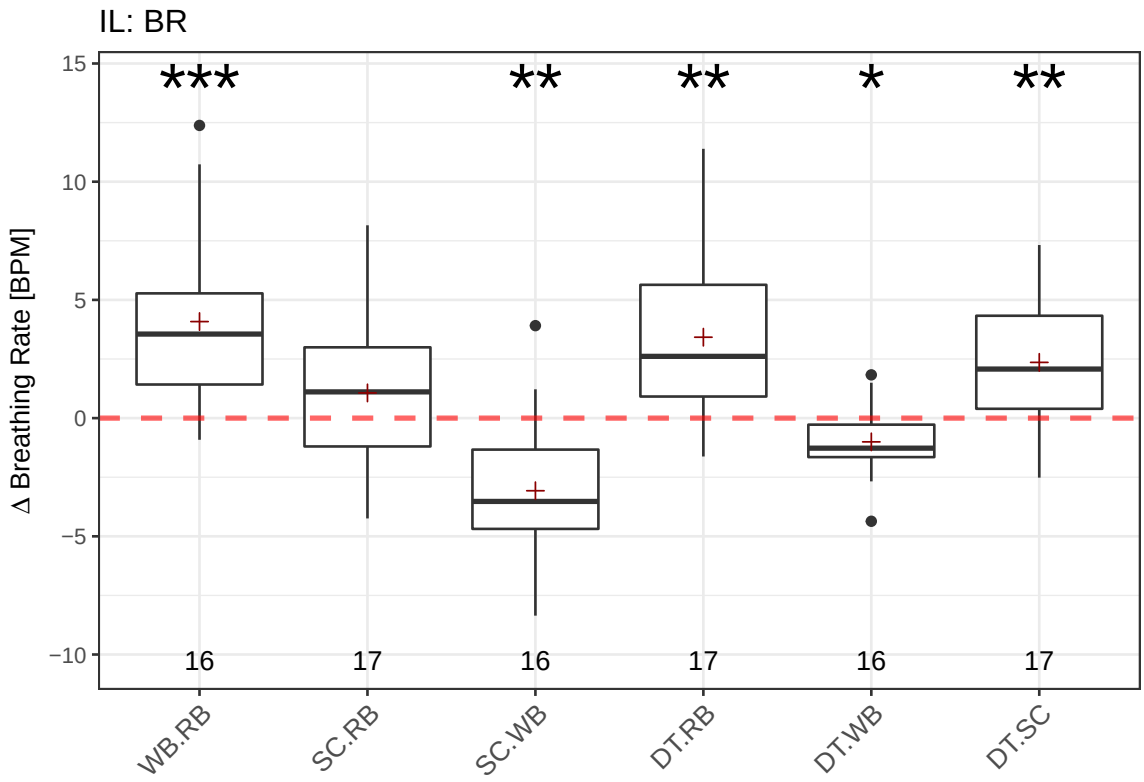

```
## Writing Baseline - Resting Baseline
## t-test p = 0.0111 < 0.05  *
##
## Stress Condition - Resting Baseline
## t-test p = 0.9654 > 0.05
##
## StressCondition - Writing Baseline
## t-test p = 0.0291 < 0.05  *
##
## Dual Task - Resting Baseline
## t-test p = 0.4248 > 0.05
##
## Dual Task - Writing Baseline
## t-test p = 0.33 > 0.05
##
## Dual Task - Stress Condition
## t-test p = 0.1284 > 0.05
##
## Presentation - Resting Baseline
## t-test p = 0.0059 < 0.01  **
##
## Presentation - Writing Baseline
## t-test p = 0.0204 < 0.05  *
```

```
##
## Presentation - Stress Condition
## t-test p = 5e-04 < 0.001  ***
##
## Presentation - Dual Task
## t-test p = 1e-04 < 0.001  ***
```




```
## Writing Baseline - Resting Baseline
## t-test p = 0.034 < 0.05  *
##
## Stress Condition - Resting Baseline
## t-test p = 0.1432 > 0.05
##
## StressCondition - Writing Baseline
## t-test p = 0 < 0.001  ***
##
## Dual Task - Resting Baseline
## t-test p = 0.5956 > 0.05
##
## Dual Task - Writing Baseline
## t-test p = 0.0013 < 0.01  **
##
## Dual Task - Stress Condition
## t-test p = 0.2937 > 0.05
##
## Presentation - Resting Baseline
## t-test p = 0.0134 < 0.05  *
##
## Presentation - Writing Baseline
## t-test p = 0.0132 < 0.05  *
##
## Presentation - Stress Condition
## t-test p = 0.0032 < 0.01  **
```

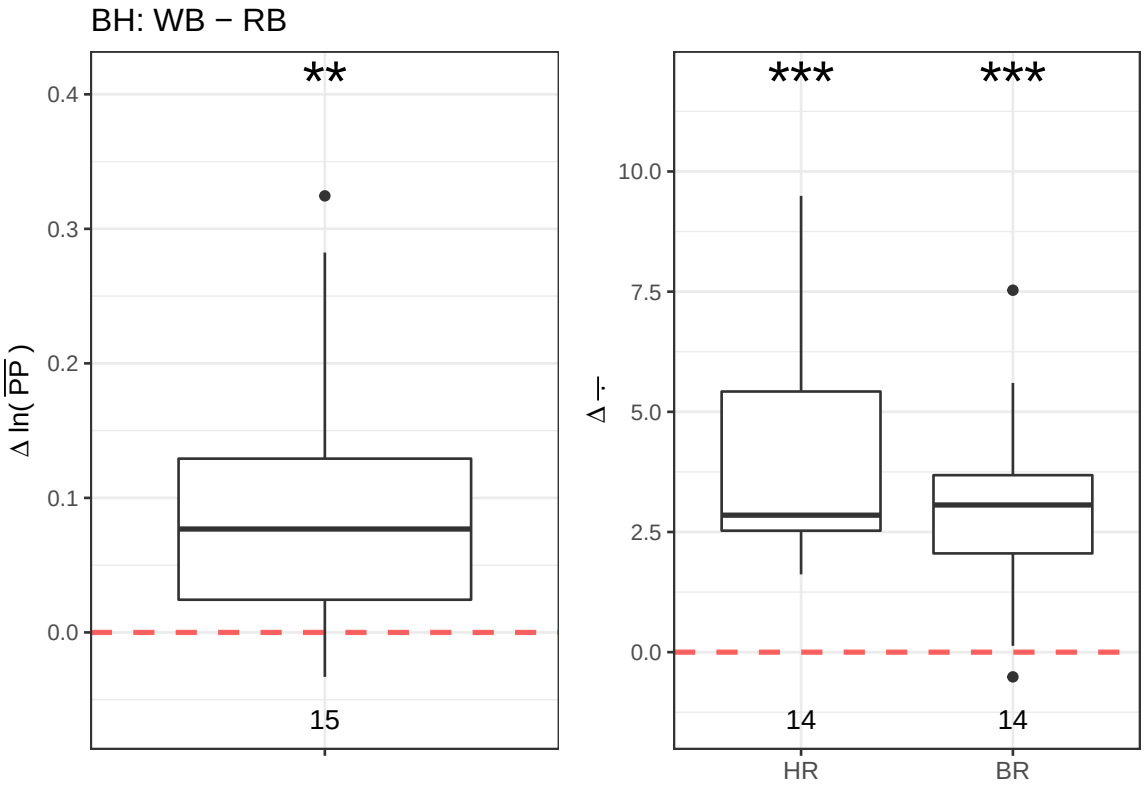
```
##
## Presentation - Dual Task
## t-test p = 0.0012 < 0.01  **
```

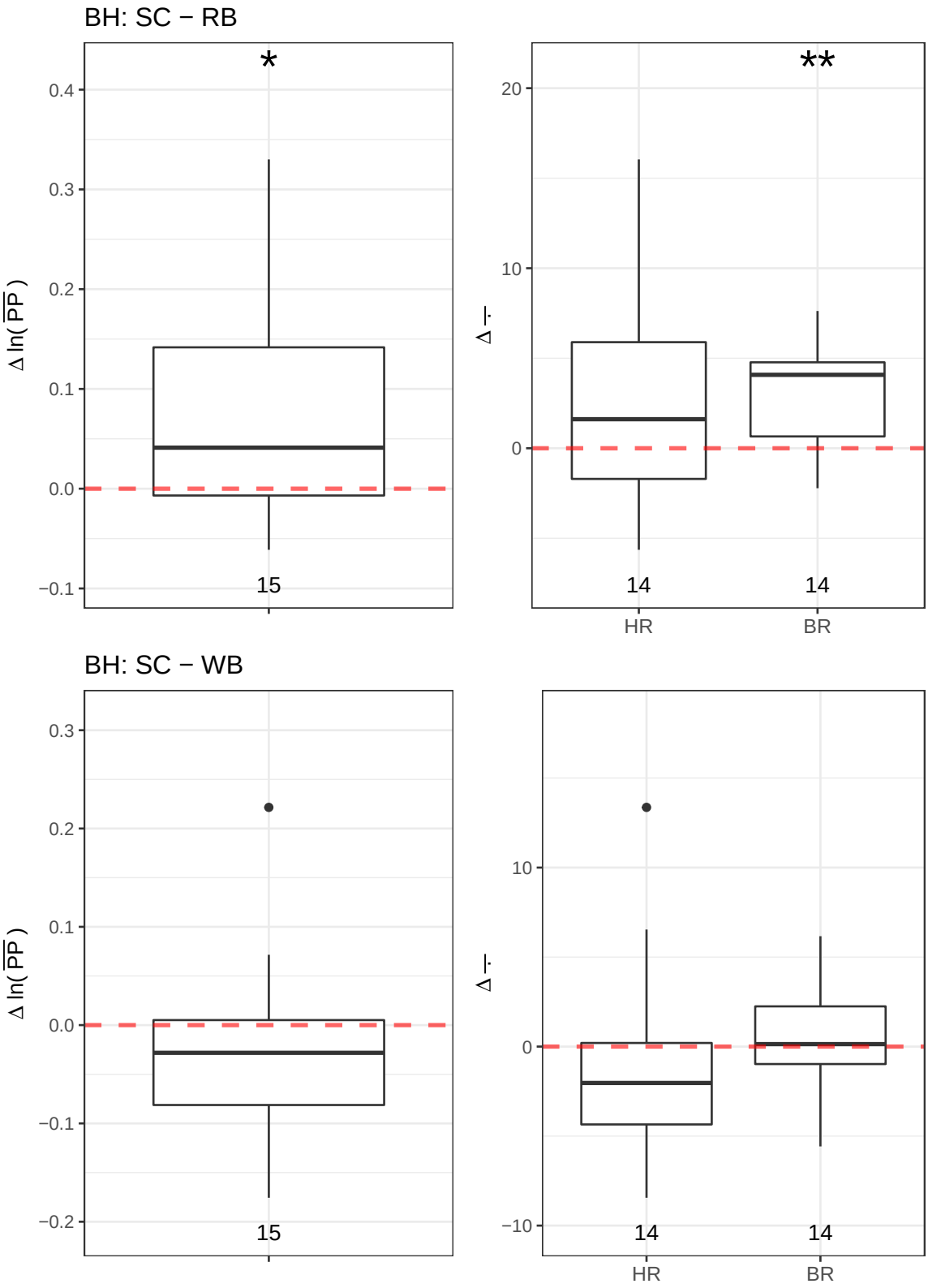


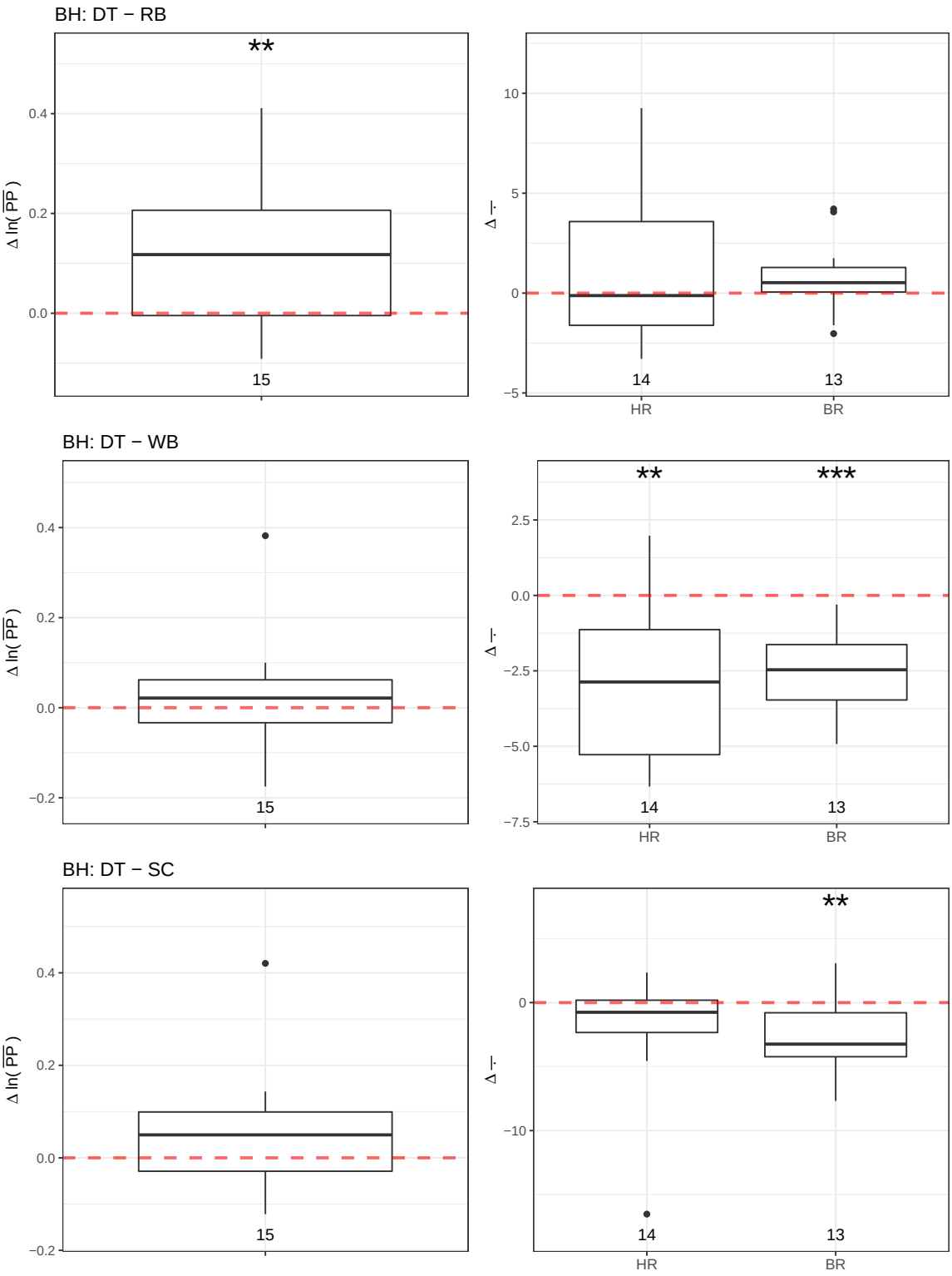

```
## Writing Baseline - Resting Baseline
## t-test p = 5e-04 < 0.001  ***
##
## Stress Condition - Resting Baseline
## t-test p = 0.1932 > 0.05
##
## StressCondition - Writing Baseline
## t-test p = 0.0015 < 0.01  **
##
## Dual Task - Resting Baseline
## t-test p = 0.0031 < 0.01  **
##
## Dual Task - Writing Baseline
## t-test p = 0.0204 < 0.05  *
##
## Dual Task - Stress Condition
## t-test p = 0.0063 < 0.01  **
```

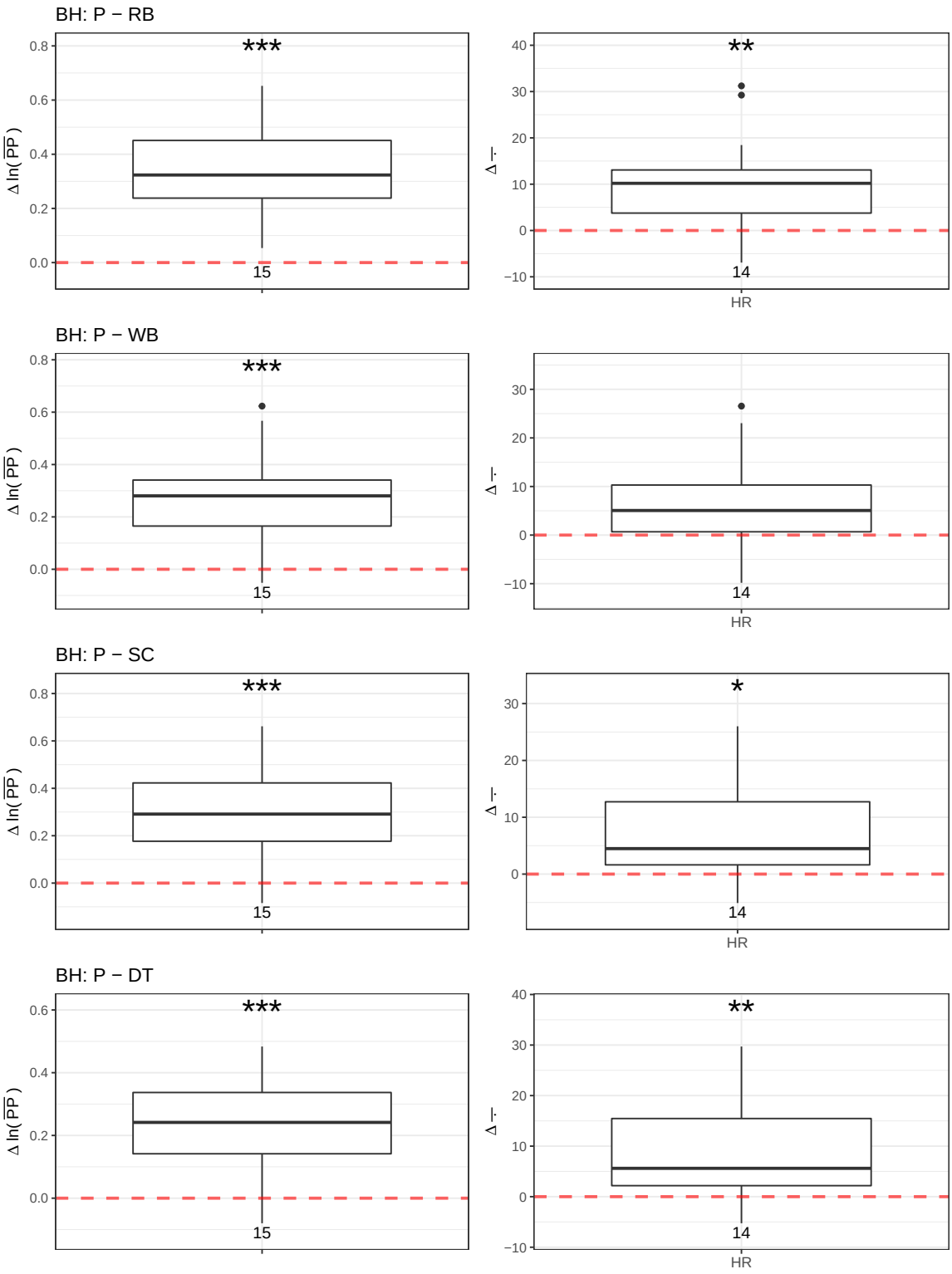
Batch-High (BH)

Sensor Channels per Session

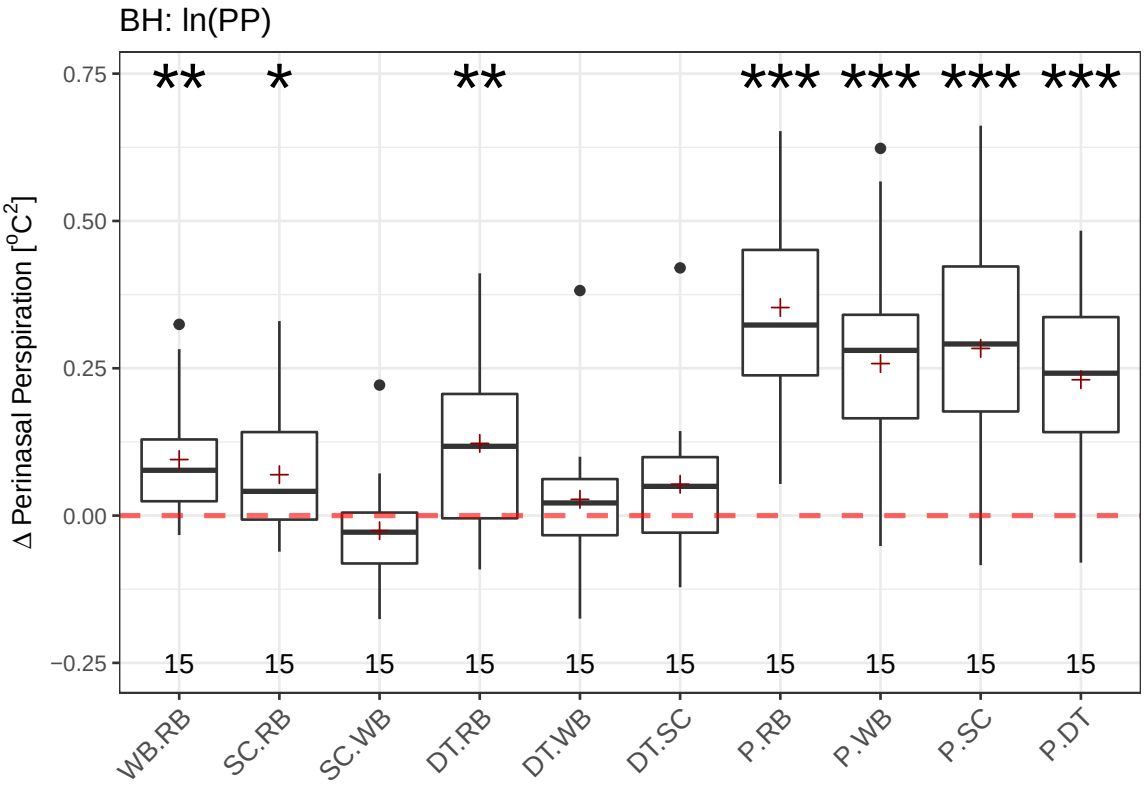



BH: SC − RB
*
**
0.4
0.3
0.2
0.1
0.0
−0.1
20
10
0
15
14
14
HR
BR
BH: SC − WB
0.3
0.2
0.1
0.0
−0.1
−0.2
10
0
−10
15
14
14
HR
BR


BH: DT − RB
**
0.4
0.2
0.0
Δ ln(PP)
15
10
5
0
−5
Δ
14
13
HR
BR
BH: DT − WB
0.4
0.2
0.0
−0.2
Δ ln(PP)
15
**
***
2.5
0.0
−2.5
−5.0
−7.5
Δ
14
13
HR
BR
BH: DT − SC
0.4
0.2
0.0
−0.2
Δ ln(PP)
15
**
0
−10
Δ
14
13
HR
BR

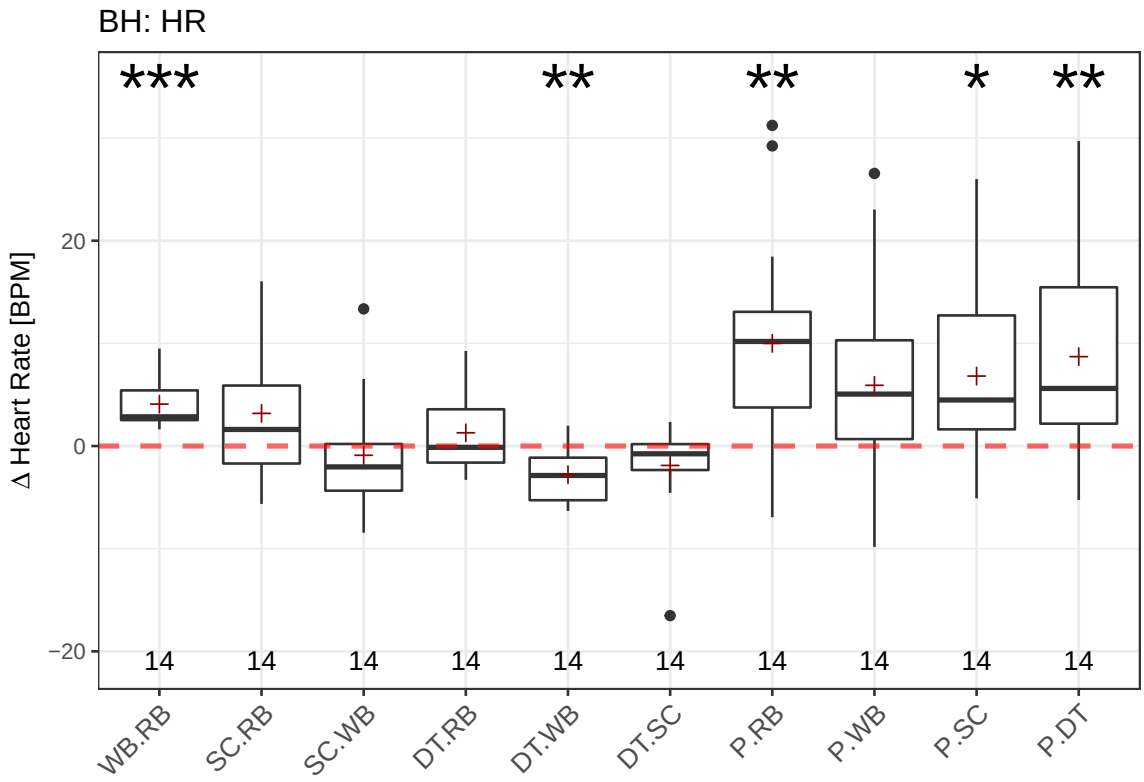

BH: P − RB
***
**
BH: P − WB
***
BH: P − SC
***
*
BH: P − DT
***
**
15
14
HR

Sensor Channel across Session



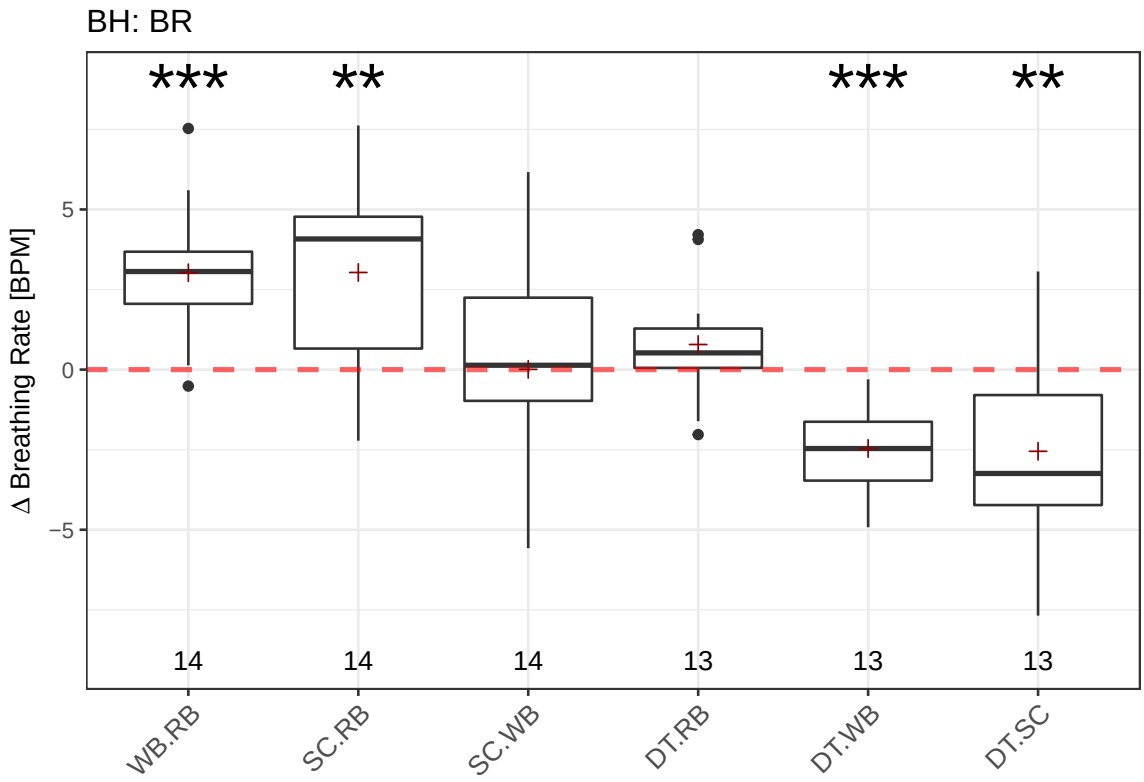

```
## Writing Baseline - Resting Baseline
## t-test p = 0.0039 < 0.01  **
##
## Stress Condition - Resting Baseline
## t-test p = 0.0215 < 0.05  *
##
## StressCondition - Writing Baseline
## t-test p = 0.3011 > 0.05
##
## Dual Task - Resting Baseline
## t-test p = 0.0032 < 0.01  **
##
## Dual Task - Writing Baseline
## t-test p = 0.3915 > 0.05
##
## Dual Task - Stress Condition
## t-test p = 0.1264 > 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
## t-test p = 0 < 0.001  ***
##
## Stress Condition - Resting Baseline
## t-test p = 0.0805 > 0.05
##
## StressCondition - Writing Baseline
## t-test p = 0.559 > 0.05
##
## Dual Task - Resting Baseline
## t-test p = 0.2422 > 0.05
##
## Dual Task - Writing Baseline
## t-test p = 0.0017 < 0.01  **
##
## Dual Task - Stress Condition
## t-test p = 0.1489 > 0.05
##
## Presentation - Resting Baseline
## t-test p = 0.0051 < 0.01  **
##
## Presentation - Writing Baseline
## t-test p = 0.05 > 0.05
##
## Presentation - Stress Condition
## t-test p = 0.0136 < 0.05  *
```

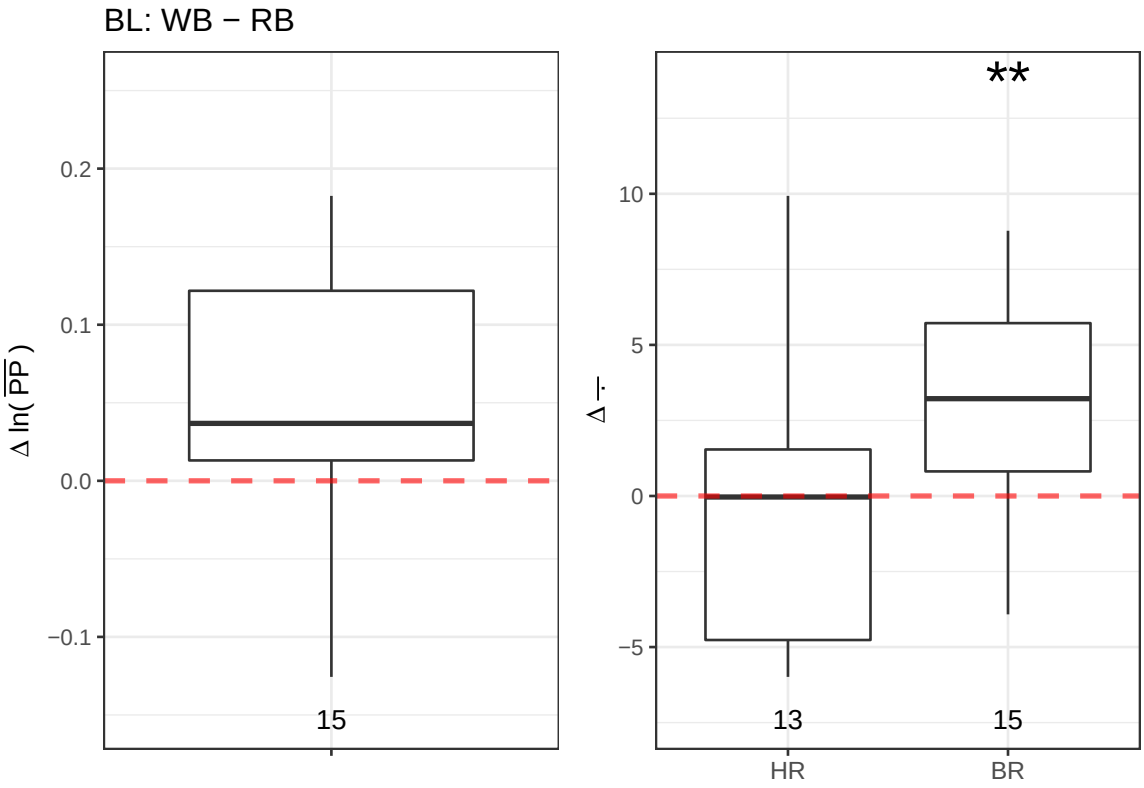
```
##
## Presentation - Dual Task
## t-test p = 0.0074 < 0.01  **
```

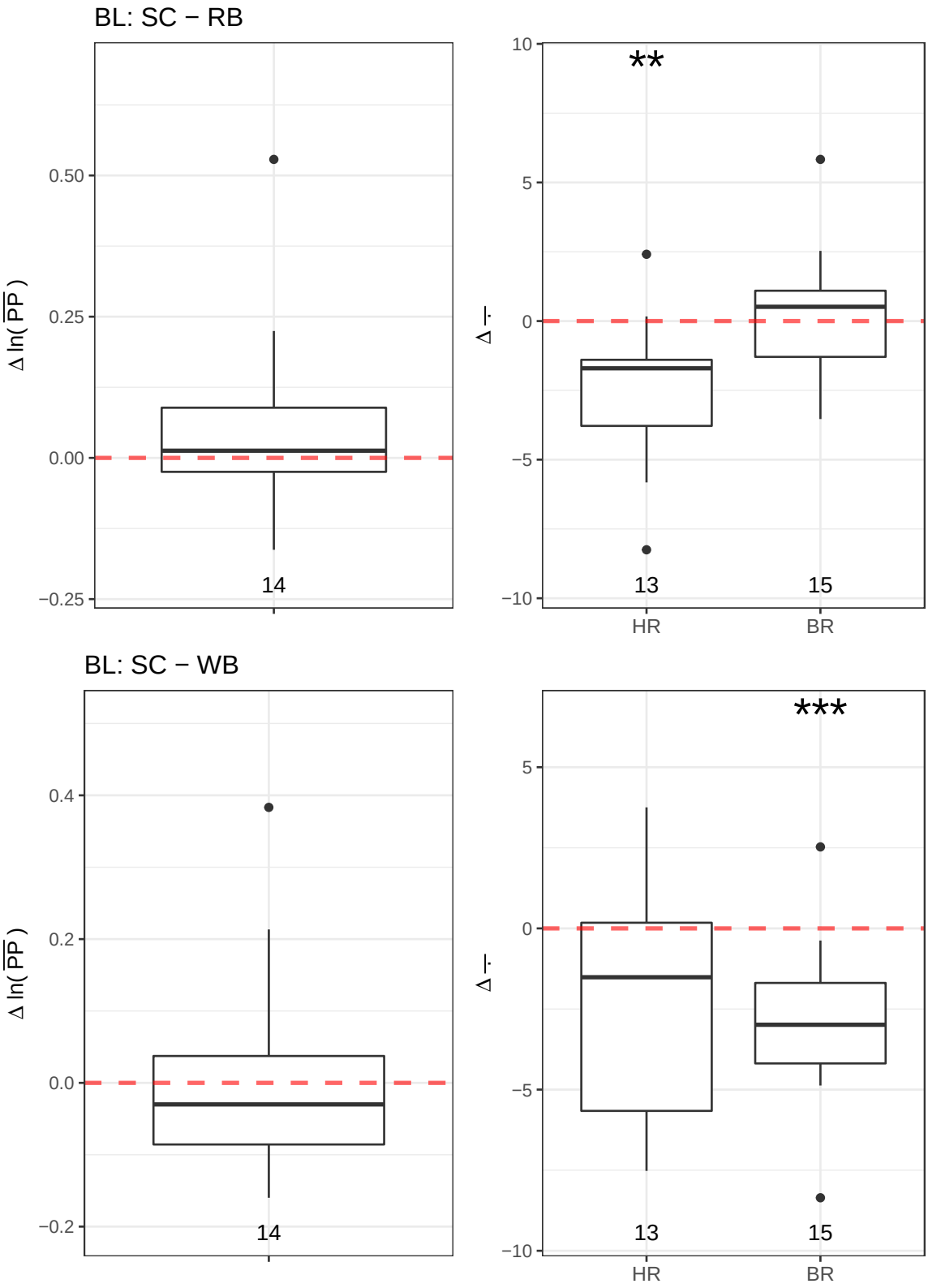


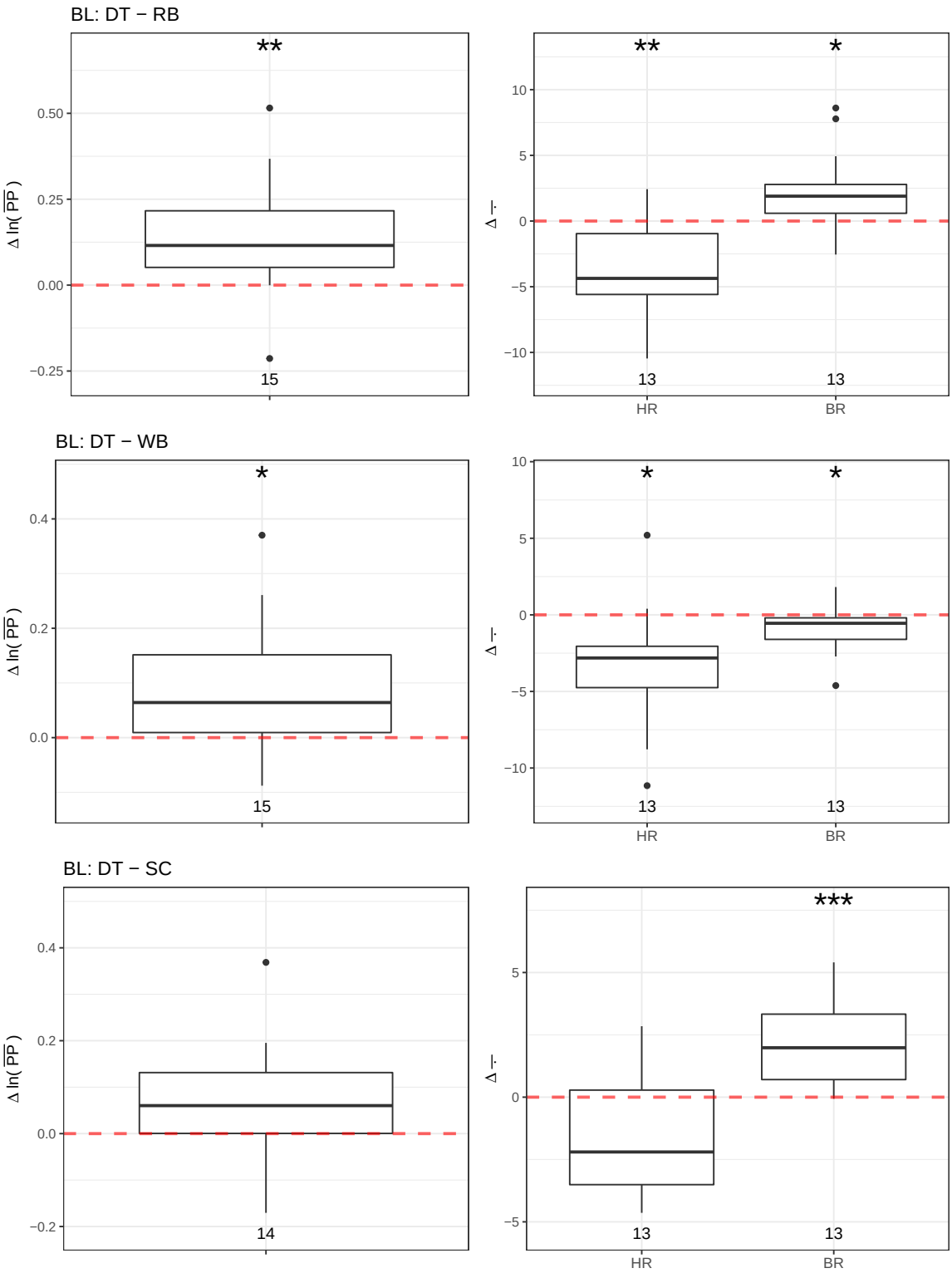

```
## Writing Baseline - Resting Baseline
## t-test p = 1e-04 < 0.001  ***
##
## Stress Condition - Resting Baseline
## t-test p = 0.0026 < 0.01  **
##
## StressCondition - Writing Baseline
## t-test p = 0.993 > 0.05
##
## Dual Task - Resting Baseline
## t-test p = 0.1451 > 0.05
##
## Dual Task - Writing Baseline
## t-test p = 0 < 0.001  ***
##
## Dual Task - Stress Condition
## t-test p = 0.0096 < 0.01  **
```

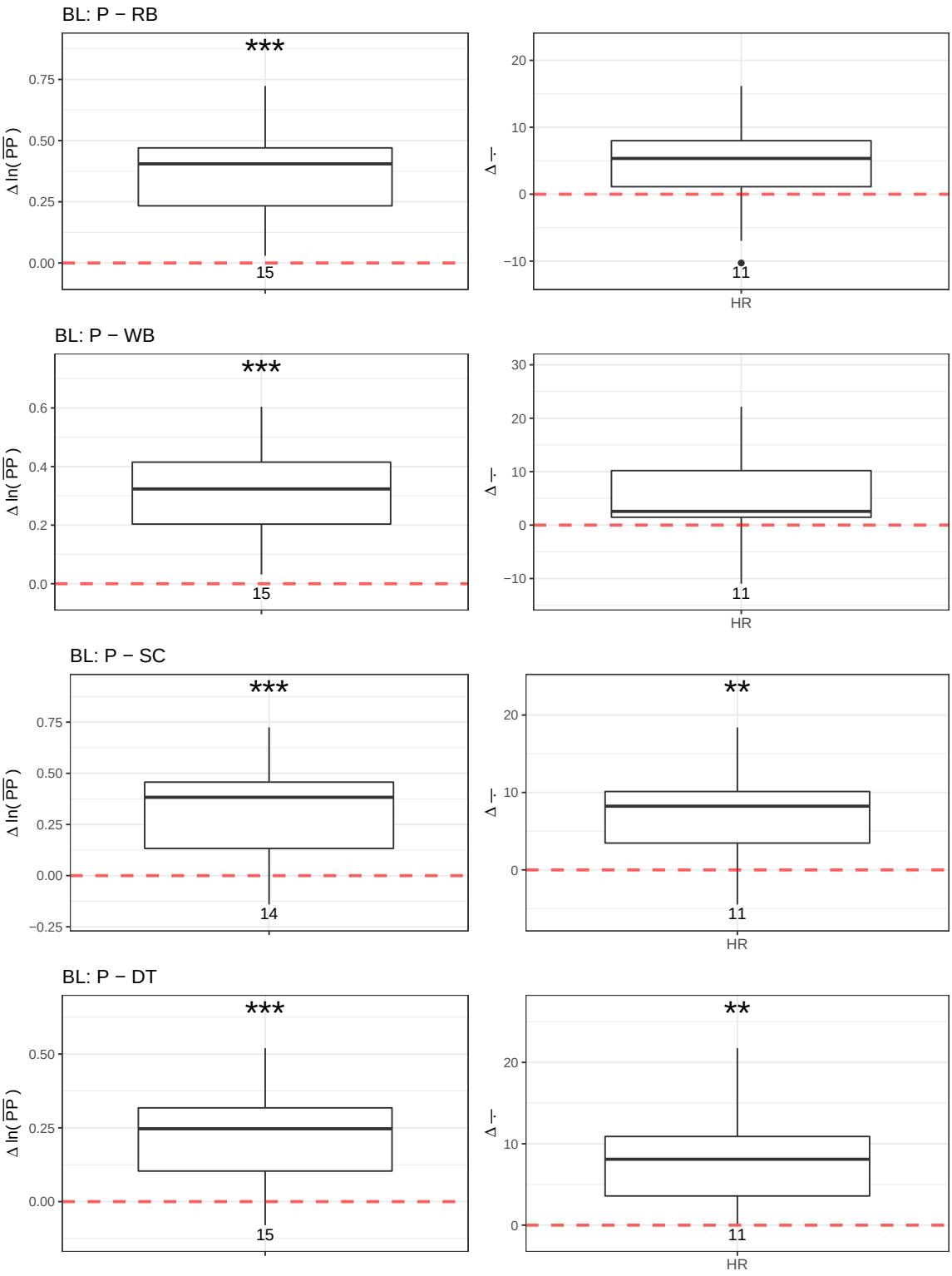
Batch-Low (BL)

Sensor Channels per Session

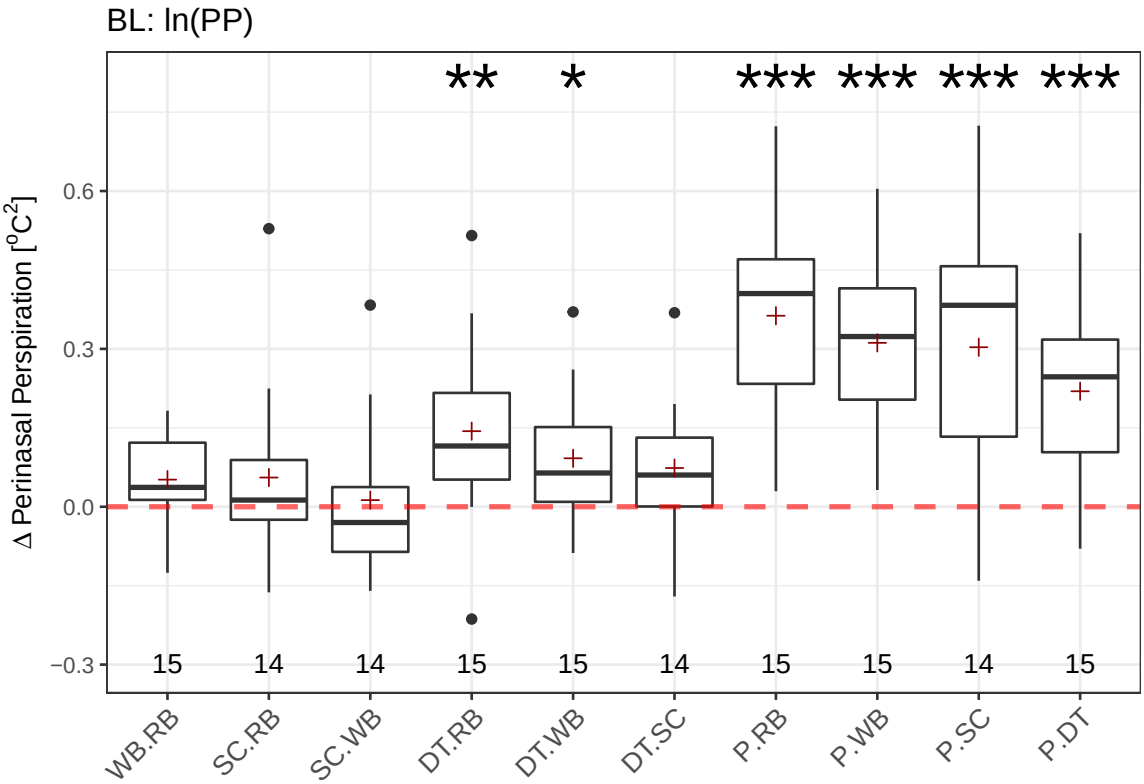



BL: SC − RB
Δ ln(PP)
0.50
0.25
0.00
−0.25
14
**
10
5
0
−5
−10
13
15
HR
BR
BL: SC − WB
Δ ln(PP)
0.4
0.2
0.0
−0.2
14
***
5
0
−5
−10
13
15
HR
BR


BL: DT − RB
**
0.50
0.25
0.00
−0.25
Δ ln(PP)
15
**
*
10
5
0
−5
−10
Δ
13
13
HR
BR
BL: DT − WB
*
0.4
0.2
0.0
Δ ln(PP)
15
*
*
10
5
0
−5
−10
Δ
13
13
HR
BR
BL: DT − SC
0.4
0.2
0.0
−0.2
Δ ln(PP)
14
***
5
0
−5
Δ
13
13
HR
BR

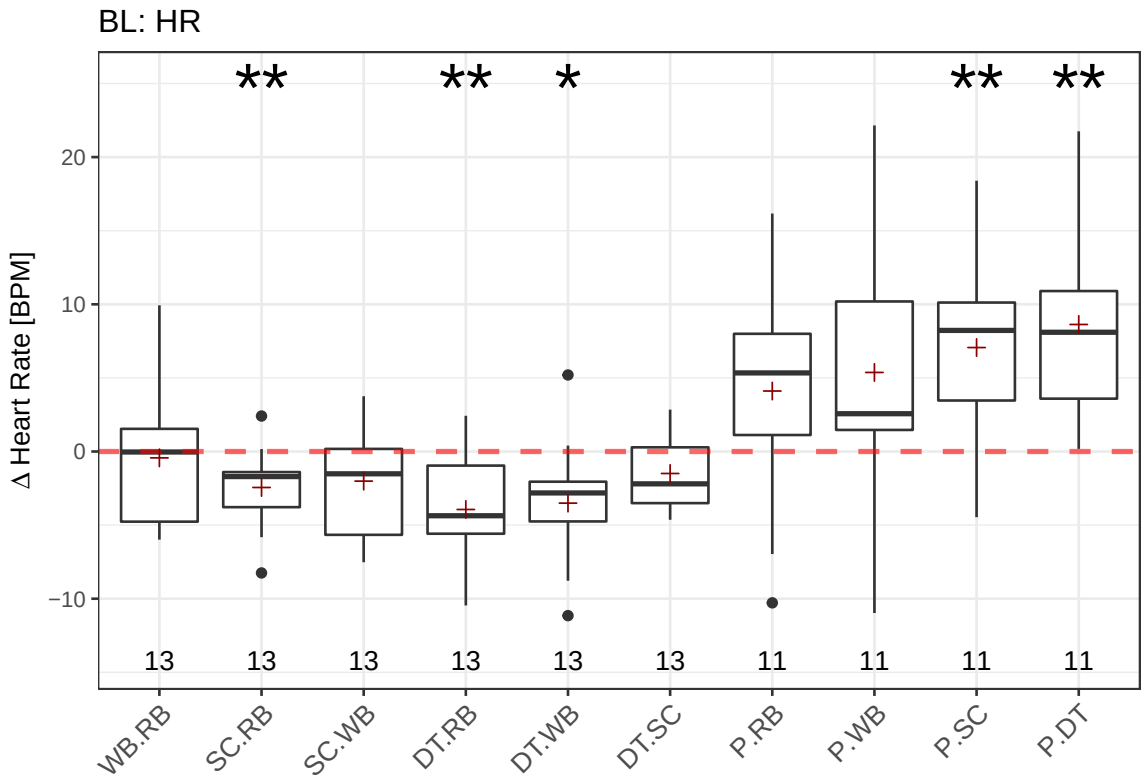

BL: P − RB
***
0.75
0.50
0.25
0.00
Δ ln(PP)
15
20
10
0
−10
Δ HR
11
HR
BL: P − WB
***
0.6
0.4
0.2
0.0
Δ ln(PP)
15
30
20
10
0
−10
Δ HR
11
HR
BL: P − SC
***
0.75
0.50
0.25
0.00
−0.25
Δ ln(PP)
14
**
20
10
0
Δ HR
11
HR
BL: P − DT
***
0.50
0.25
0.00
Δ ln(PP)
15
**
20
10
0
Δ HR
11
HR

Sensor Channel across Session



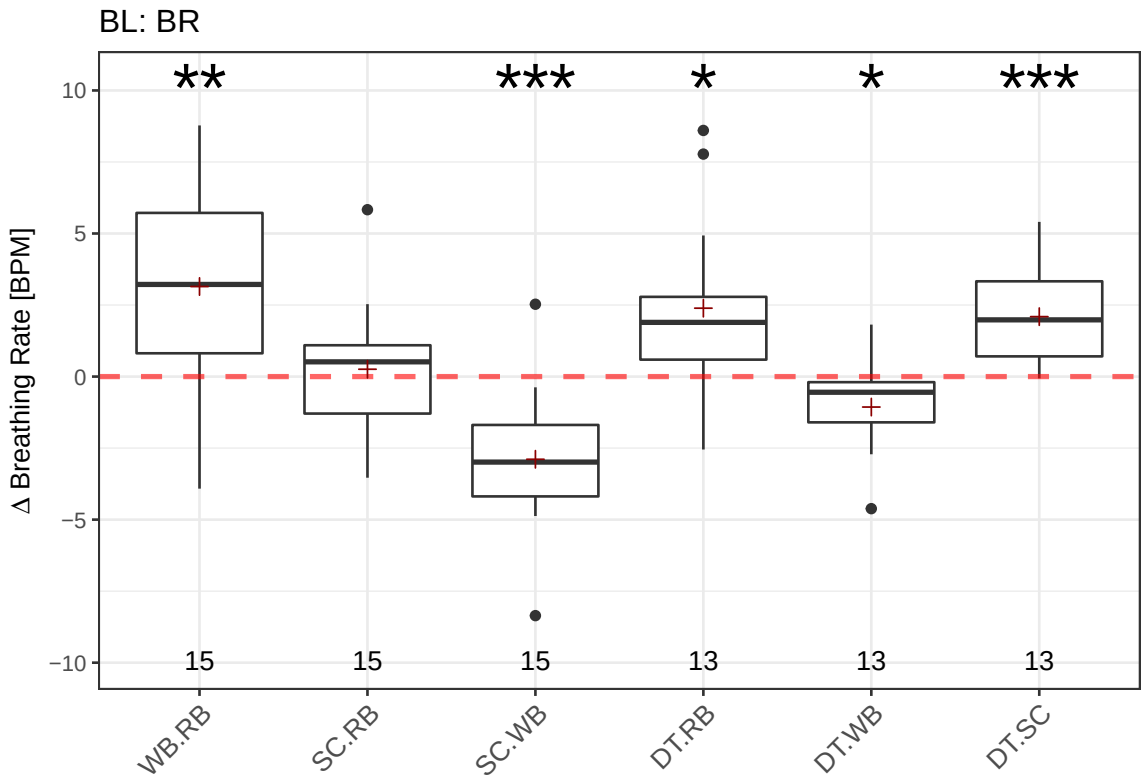

```
## Writing Baseline - Resting Baseline
## t-test p = 0.0524 > 0.05
##
## Stress Condition - Resting Baseline
## t-test p = 0.2437 > 0.05
##
## StressCondition - Writing Baseline
## t-test p = 0.7578 > 0.05
##
## Dual Task - Resting Baseline
## t-test p = 0.0068 < 0.01  **
##
## Dual Task - Writing Baseline
## t-test p = 0.0137 < 0.05  *
##
## Dual Task - Stress Condition
## t-test p = 0.0617 > 0.05
##
## Presentation - Resting Baseline
## t-test p = 0 < 0.001  ***
##
## Presentation - Writing Baseline
## t-test p = 0 < 0.001  ***
```

```
##
## Presentation - Stress Condition
## t-test p = 3e-04 < 0.001  ***
##
## Presentation - Dual Task
## t-test p = 2e-04 < 0.001  ***
```



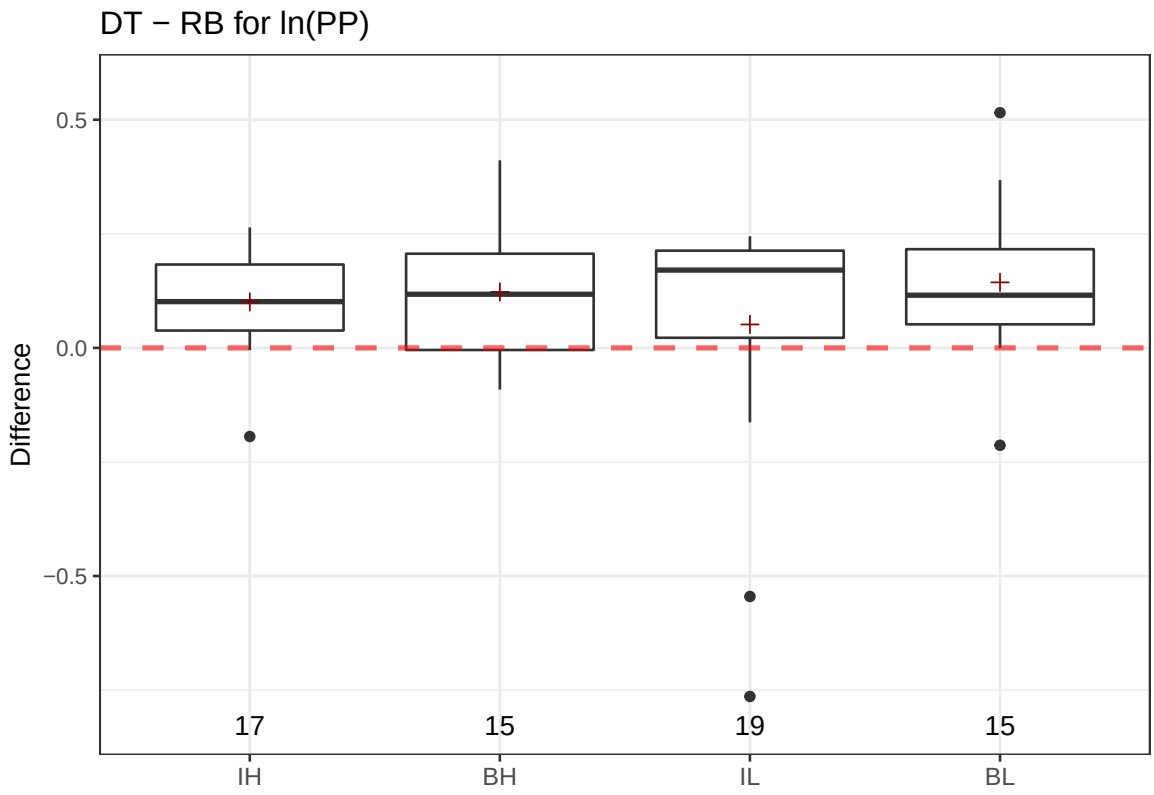

```
## Writing Baseline - Resting Baseline
## t-test p = 0.7394 > 0.05
##
## Stress Condition - Resting Baseline
## t-test p = 0.0068 < 0.01  **
##
## StressCondition - Writing Baseline
## t-test p = 0.081 > 0.05
##
## Dual Task - Resting Baseline
## t-test p = 0.0028 < 0.01  **
##
## Dual Task - Writing Baseline
## t-test p = 0.0103 < 0.05  *
##
## Dual Task - Stress Condition
## t-test p = 0.0577 > 0.05
##
## Presentation - Resting Baseline
## t-test p = 0.1093 > 0.05
##
## Presentation - Writing Baseline
## t-test p = 0.0833 > 0.05
##
## Presentation - Stress Condition
## t-test p = 0.0069 < 0.01  **
```

```
##
## Presentation - Dual Task
## t-test p = 0.0019 < 0.01  **
```

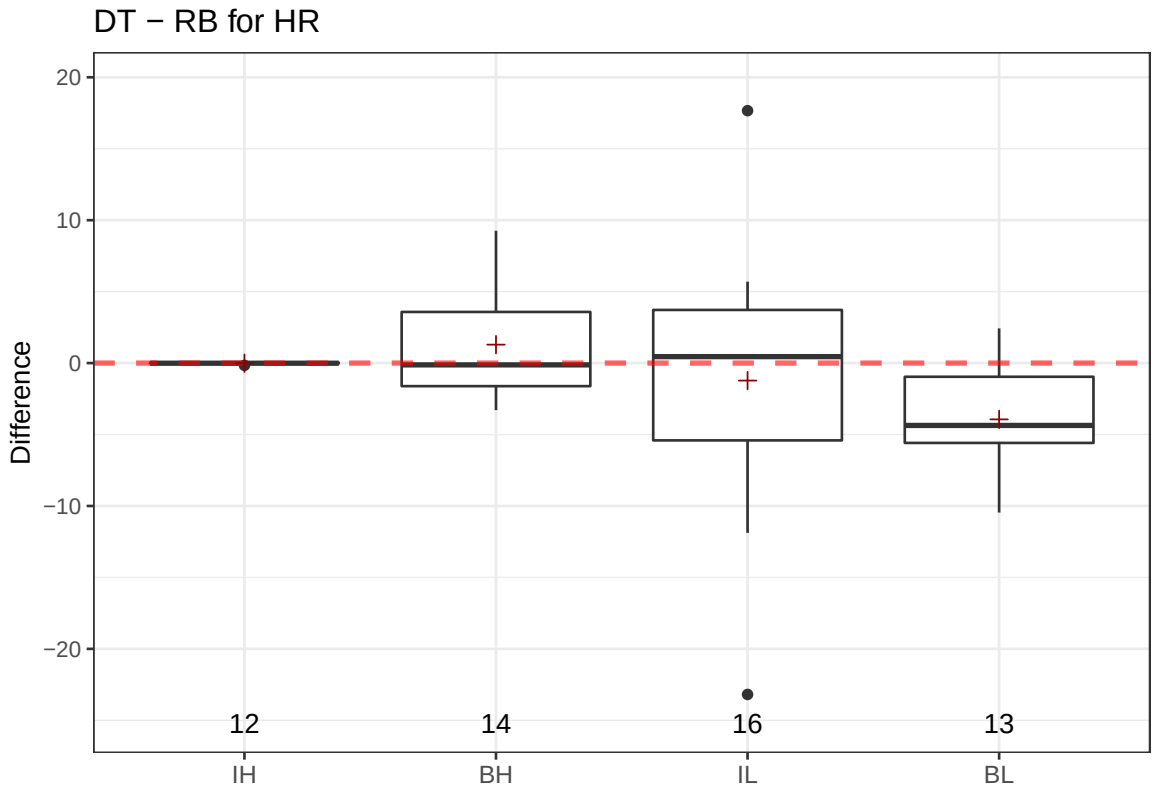



```
## Writing Baseline - Resting Baseline
## t-test p = 0.0022 < 0.01  **
##
## Stress Condition - Resting Baseline
## t-test p = 0.6729 > 0.05
##
## StressCondition - Writing Baseline
## t-test p = 5e-04 < 0.001  ***
##
## Dual Task - Resting Baseline
## t-test p = 0.0179 < 0.05  *
##
## Dual Task - Writing Baseline
## t-test p = 0.0295 < 0.05  *
##
## Dual Task - Stress Condition
## t-test p = 8e-04 < 0.001  ***
```

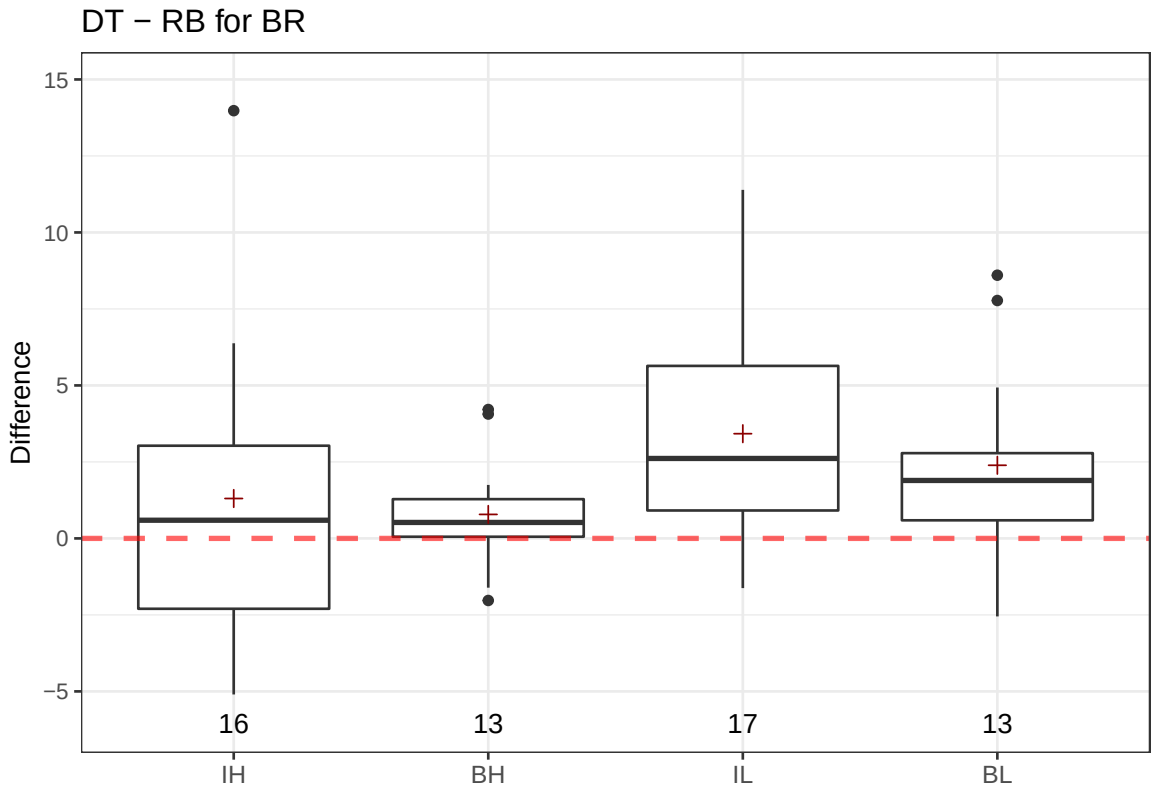
Across Sessions



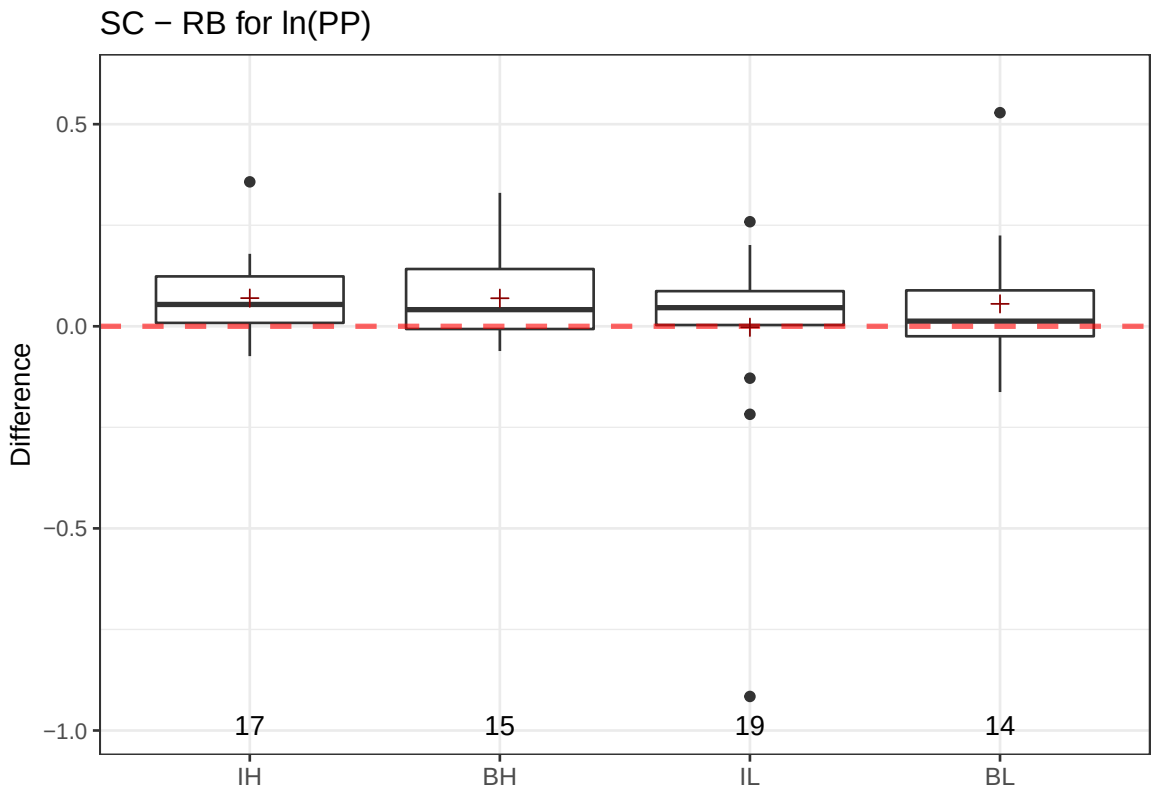

```
##             Df Sum Sq Mean Sq F value Pr(>F)
## Condition    3  0.081 0.02701   0.754  0.524
## Residuals   62  2.222 0.03584
##
## ---
##
##     Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = formula(paste(diff, "~ Condition")), data = anova_df)
##
## $Condition
##               diff        lwr        upr     p adj
## BL-BH  0.02105726 -0.1614514 0.20356593 0.9900928
## IH-BH -0.02173941 -0.1987988 0.15532002 0.9881176
## IL-BH -0.07120430 -0.2438402 0.10143163 0.6975664
## IH-BL -0.04279667 -0.2198561 0.13426276 0.9192577
## IL-BL -0.09226156 -0.2648975 0.08037437 0.4974272
## IL-IH -0.04946489 -0.2163295 0.11739968 0.8620509
```



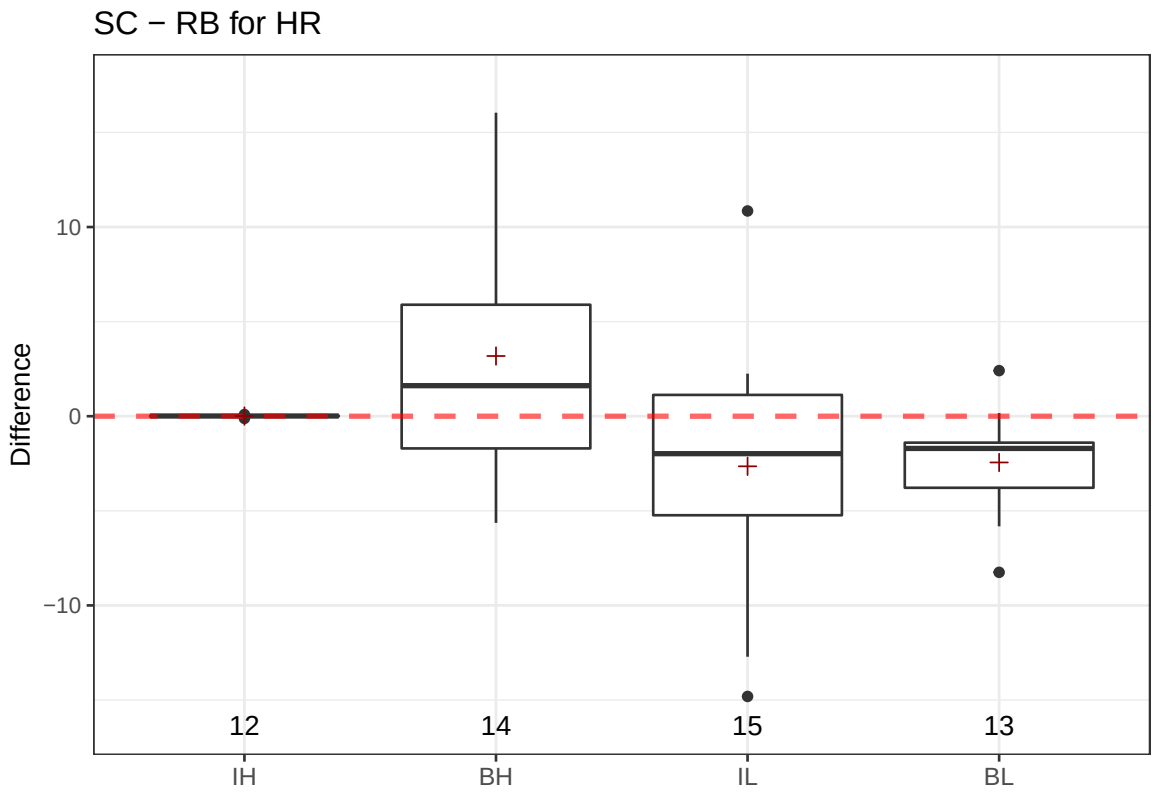

```
##             Df Sum Sq Mean Sq F value Pr(>F)
## Condition    3  198.2   66.07   2.109  0.111
## Residuals   51 1597.5   31.32
##
## ---
##
##     Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = formula(paste(diff, "~ Condition")), data = anova_df)
##
## $Condition
##            diff        lwr      upr     p adj
## BL-BH -5.229941 -10.954909 0.495027 0.0848672
## IH-BH -1.302302  -7.149650 4.545046 0.9342030
## IL-BH -2.514618  -7.954175 2.924938 0.6123653
## IH-BL  3.927639  -2.022602 9.877881 0.3076656
## IL-BL  2.715323  -2.834693 8.265339 0.5675874
## IL-IH -1.212316  -6.888485 4.463852 0.9413440
```



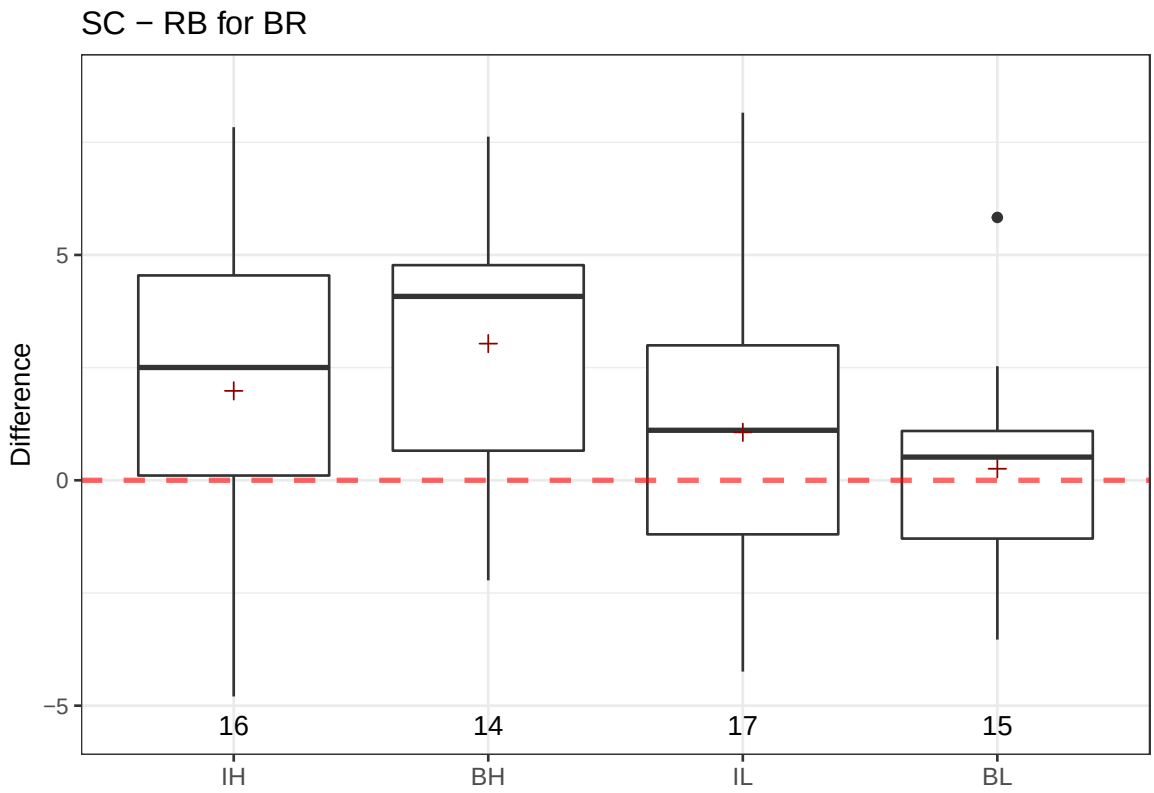

```
##             Df Sum Sq Mean Sq F value Pr(>F)
## Condition    3   63.3   21.09   1.505  0.223
## Residuals   55  770.5   14.01
##
## ---
##
##     Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = formula(paste(diff, "~ Condition")), data = anova_df)
##
## $Condition
##             diff       lwr      upr     p adj
## BL-BH  1.6064369 -2.282969 5.495843 0.6945016
## IH-BH  0.5202144 -3.182390 4.222819 0.9822184
## IL-BH  2.6386138 -1.014847 6.292075 0.2343805
## IH-BL -1.0862225 -4.788827 2.616382 0.8644195
## IL-BL  1.0321770 -2.621284 4.685638 0.8769147
## IL-IH  2.1183995 -1.335522 5.572321 0.3733521
```



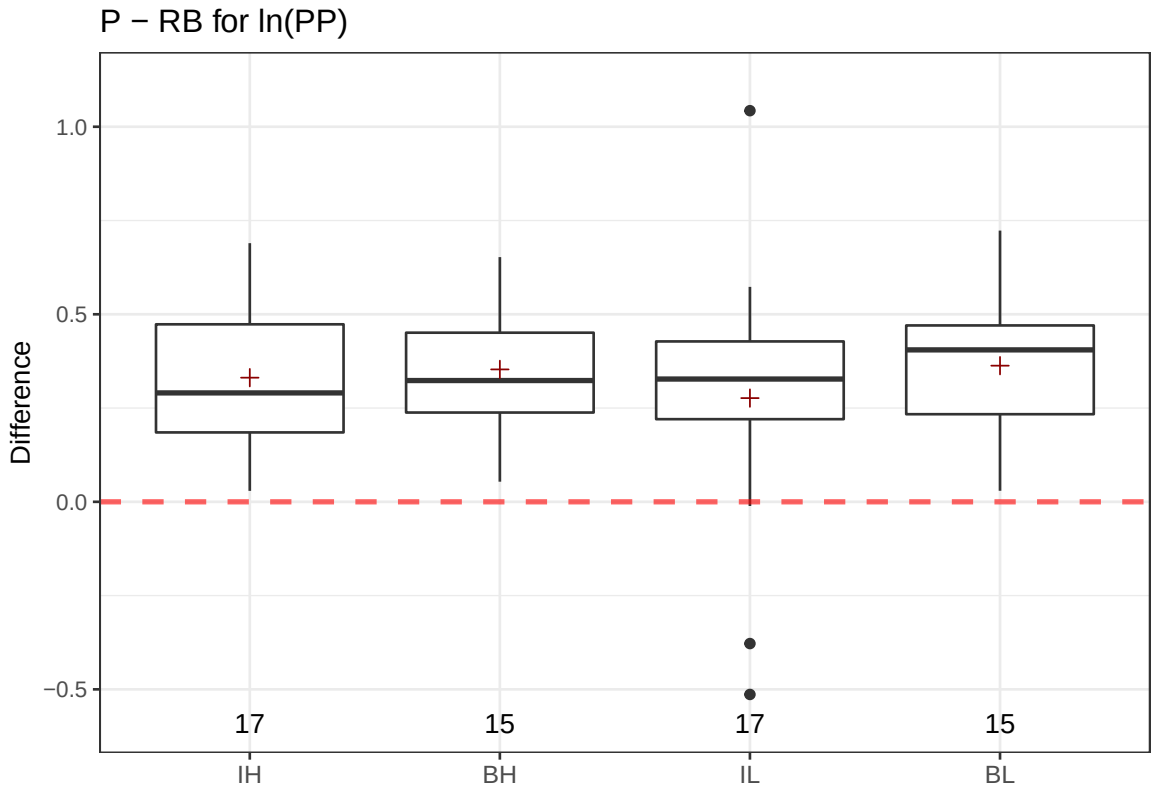

```
## [1] "Removed 0 subjects who had Stroop scores less than 0."
##
## ---
##               Df Sum Sq Mean Sq F value Pr(>F)
## Condition    3 0.0636 0.02119   0.729  0.538
## Residuals   61 1.7720 0.02905
##
## ---
##
##     Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = formula(paste(diff, "~ Condition")), data = anova_df)
##
## $Condition
##                 diff        lwr        upr     p adj
## BL-BH -0.0138865234 -0.1811753 0.15340225 0.9962397
## IH-BH  0.0002650717 -0.1592062 0.15973630 1.0000000
## IL-BH -0.0718404652 -0.2273276 0.08364667 0.6164622
## IH-BL  0.0141515951 -0.1483171 0.17662033 0.9956637
## IL-BL -0.0579539418 -0.2165139 0.10060604 0.7694924
## IL-IH -0.0721055369 -0.2223946 0.07818354 0.5870544
```



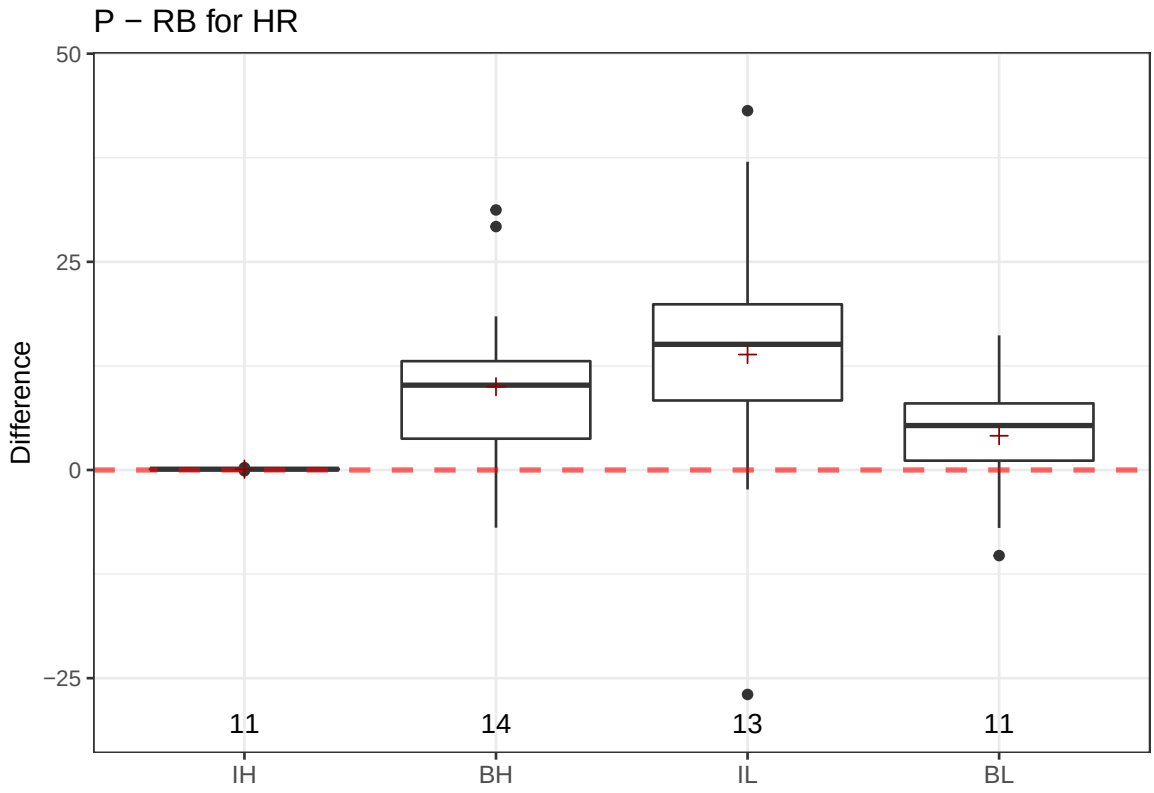

```
## [1] "Removed 0 subjects who had Stroop scores less than 0."
##
## ---
##               Df Sum Sq Mean Sq F value  Pr(>F)
## Condition    3  311.3  103.78   4.277 0.00917 **
## Residuals   50 1213.3   24.27
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ---
##
##     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 -5.6268272 -10.669112 -0.5845423 0.0231659
## IH-BH -3.1742515  -8.324323  1.9758196 0.3671271
## IL-BH -5.8309016 -10.695764 -0.9660394 0.0128837
## IH-BL  2.4525757  -2.788119  7.6932708 0.6024467
## IL-BL -0.2040744  -5.164774  4.7566249 0.9995259
## IL-IH -2.6566501  -7.726870  2.4135701 0.5098958
```




```
## [1] "Removed 0 subjects who had Stroop scores less than 0."
##
## ---
##               Df Sum Sq Mean Sq F value Pr(>F)
## Condition    3   62.9  20.966   2.165  0.102
## Residuals   58  561.7   9.684
##
## ---
##
##     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 -2.7764090 -5.835248 0.2824304 0.0881857
## IH-BH -1.0483755 -4.060715 1.9639642 0.7939702
## IL-BH -1.9675514 -4.938258 1.0031548 0.3068896
## IH-BL  1.7280336 -1.230269 4.6863359 0.4177864
## IL-BL  0.8088577 -2.107040 3.7247550 0.8831214
## IL-IH -0.9191759 -3.786256 1.9479043 0.8312418
```




```
##             Df Sum Sq Mean Sq F value Pr(>F)
## Condition    3  0.073 0.02428    0.38  0.768
## Residuals   60  3.830 0.06384
##
## ---
##
##     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  0.009966155 -0.2338316 0.2537639 0.9995437
## IH-BH -0.022049201 -0.2585678 0.2144694 0.9946916
## IL-BH -0.076479049 -0.3129976 0.1600395 0.8280576
## IH-BL -0.032015356 -0.2685339 0.2045032 0.9841704
## IL-BL -0.086445204 -0.3229638 0.1500734 0.7692651
## IL-IH -0.054429848 -0.2834380 0.1745783 0.9226342
```




```
##             Df Sum Sq Mean Sq F value Pr(>F)
## Condition    3   1343   447.8   3.483 0.0233 *
## Residuals   45   5785   128.6
## ---
## 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 -5.891227 -18.078140  6.295686 0.5742262
## IH-BH -9.902191 -22.089104  2.284722 0.1480013
## IL-BH  3.865329  -7.784787 15.515445 0.8125616
## IH-BL -4.010964 -16.908380  8.886452 0.8401169
## IL-BL  9.756556  -2.634881 22.147992 0.1685518
## IL-IH 13.767520   1.376083 26.158957 0.0241252
```

Summary

Condition	Difference	Measure	p	Test	n	Significance
BH	WB - RB	PP	0.0038869	t-test	15	**
BH	WB - RB	HR	0.0000470	t-test	14	***
BH	WB - RB	BR	0.0000993	t-test	14	***
BH	SC - RB	PP	0.0215038	t-test	15	*
BH	SC - RB	HR	0.0805282	t-test	14	
BH	SC - RB	BR	0.0026189	t-test	14	**
BH	SC - WB	PP	0.3011111	t-test	15	
BH	SC - WB	HR	0.5589881	t-test	14	
BH	SC - WB	BR	0.9929885	t-test	14	
BH	DT - RB	PP	0.0031738	t-test	15	**
BH	DT - RB	HR	0.2421935	t-test	14	
BH	DT - RB	BR	0.1450731	t-test	13	
BH	DT - WB	PP	0.3915045	t-test	15	
BH	DT - WB	HR	0.0017455	t-test	14	**
BH	DT - WB	BR	0.0000109	t-test	13	***
BH	DT - SC	PP	0.1264163	t-test	15	
BH	DT - SC	HR	0.1489480	t-test	14	
BH	DT - SC	BR	0.0095733	t-test	13	**
BH	P - RB	PP	0.0000019	t-test	15	***
BH	P - RB	HR	0.0051343	t-test	14	**
BH	P - WB	PP	0.0001211	t-test	15	***
BH	P - WB	HR	0.0500403	t-test	14	
BH	P - SC	PP	0.0001008	t-test	15	***
BH	P - SC	HR	0.0135531	t-test	14	*
BH	P - DT	PP	0.0000374	t-test	15	***
BH	P - DT	HR	0.0073807	t-test	14	**
BL	WB - RB	PP	0.0524247	t-test	15	
BL	WB - RB	HR	0.7393780	t-test	13	
BL	WB - RB	BR	0.0021717	t-test	15	**
BL	SC - RB	PP	0.2437167	t-test	14	
BL	SC - RB	HR	0.0068419	t-test	13	**
BL	SC - RB	BR	0.6729485	t-test	15	
BL	SC - WB	PP	0.7577805	t-test	14	
BL	SC - WB	HR	0.0810305	t-test	13	
BL	SC - WB	BR	0.0004782	t-test	15	***
BL	DT - RB	PP	0.0067535	t-test	15	**
BL	DT - RB	HR	0.0028318	t-test	13	**
BL	DT - RB	BR	0.0179329	t-test	13	*
BL	DT - WB	PP	0.0137203	t-test	15	*
BL	DT - WB	HR	0.0103391	t-test	13	*
BL	DT - WB	BR	0.0295293	t-test	13	*
BL	DT - SC	PP	0.0617118	t-test	14	
BL	DT - SC	HR	0.0577026	t-test	13	
BL	DT - SC	BR	0.0008051	t-test	13	***
BL	P - RB	PP	0.0000098	t-test	15	***

(continued)

Condition	Difference	Measure	p	Test	n	Significance
BL	P - RB	HR	0.1092566	t-test	11	
BL	P - WB	PP	0.0000054	t-test	15	***
BL	P - WB	HR	0.0833217	t-test	11	
BL	P - SC	PP	0.0003035	t-test	14	***
BL	P - SC	HR	0.0068502	t-test	11	**
BL	P - DT	PP	0.0001644	t-test	15	***
BL	P - DT	HR	0.0019303	t-test	11	**
IH	WB - RB	PP	0.0000999	t-test	17	***
IH	WB - RB	HR	0.1185091	Transformed t-test	12	
IH	WB - RB	BR	0.0086109	t-test	16	**
IH	SC - RB	PP	0.0145060	t-test	17	*
IH	SC - RB	HR	0.6094900	Transformed t-test	12	
IH	SC - RB	BR	0.0454605	t-test	16	*
IH	SC - WB	PP	0.2084476	t-test	17	
IH	SC - WB	HR	0.2597084	Transformed t-test	12	
IH	SC - WB	BR	0.0933387	t-test	16	
IH	DT - RB	PP	0.0016239	t-test	17	**
IH	DT - RB	HR	0.5734584	Transformed t-test	12	
IH	DT - RB	BR	0.2969312	t-test	16	
IH	DT - WB	PP	0.9946474	t-test	17	
IH	DT - WB	HR	0.0171595	Transformed t-test	12	*
IH	DT - WB	BR	0.0005234	t-test	16	***
IH	DT - SC	PP	0.3697148	t-test	17	
IH	DT - SC	HR	0.2853287	Transformed t-test	12	
IH	DT - SC	BR	0.3543299	t-test	16	
IH	P - RB	PP	0.0000079	t-test	17	***
IH	P - RB	HR	0.0079289	Transformed t-test	11	**
IH	P - WB	PP	0.0002411	t-test	17	***
IH	P - WB	HR	0.0152592	Transformed t-test	11	*
IH	P - SC	PP	0.0000697	t-test	17	***
IH	P - SC	HR	0.0026035	Transformed t-test	11	**
IH	P - DT	PP	0.0001591	t-test	17	***
IH	P - DT	HR	0.0000458	Transformed t-test	11	***
IL	WB - RB	PP	0.0110517	t-test	19	*
IL	WB - RB	HR	0.0339757	t-test	16	*
IL	WB - RB	BR	0.0005059	t-test	16	***
IL	SC - RB	PP	0.9653604	t-test	19	
IL	SC - RB	HR	0.1431695	t-test	15	
IL	SC - RB	BR	0.1931501	t-test	17	
IL	SC - WB	PP	0.0291272	t-test	19	*
IL	SC - WB	HR	0.0000012	t-test	15	***
IL	SC - WB	BR	0.0015261	t-test	16	**
IL	DT - RB	PP	0.4247691	t-test	19	
IL	DT - RB	HR	0.5956168	t-test	16	
IL	DT - RB	BR	0.0030795	t-test	17	**
IL	DT - WB	PP	0.3300145	t-test	19	
IL	DT - WB	HR	0.0013141	t-test	16	**

(continued)

Condition	Difference	Measure	p	Test	n	Significance
IL	DT - WB	BR	0.0203968	t-test	16	*
IL	DT - SC	PP	0.1283543	t-test	19	
IL	DT - SC	HR	0.2937107	t-test	15	
IL	DT - SC	BR	0.0062921	t-test	17	**
IL	P - RB	PP	0.0059327	t-test	17	**
IL	P - RB	HR	0.0133767	t-test	13	*
IL	P - WB	PP	0.0203817	t-test	17	*
IL	P - WB	HR	0.0132198	t-test	13	*
IL	P - SC	PP	0.0005328	t-test	17	***
IL	P - SC	HR	0.0032216	t-test	12	**
IL	P - DT	PP	0.0000890	t-test	17	***
IL	P - DT	HR	0.0012193	t-test	13	**