BL,RL,RS Data Tests

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2023-07-08

Packages

```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.2     v readr     2.1.4
## v forcats   1.0.0     v stringr   1.5.0
## v ggplot2   3.4.2     v tibble    3.2.1
## v lubridate 1.9.2     v tidyr     1.3.0
## v purrr     1.0.1
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

Read in data

```
BLdata <- read.csv("BLdata.csv")
RLdata <- read.csv("RLdata.csv")
RSdata <- read.csv("RSdata.csv")
```

Test's

Brachial Long:

Pre

```
kruskal.test(x = BLdata$syst_cacc_precpb, g = BLdata$syst_pacc_precpb)
```

1: CA_Syst - PA_Syst

```
##
##  Kruskal-Wallis rank sum test
##
## data:  BLdata$syst_cacc_precpb and BLdata$syst_pacc_precpb
## Kruskal-Wallis chi-squared = 57.483, df = 35, p-value = 0.00968
```

```
t.test(x = BLdata$syst_cacc_precpb, y = BLdata$syst_pacc_precpb)
```

```
##
##  Welch Two Sample t-test
```

```
##
## data:  BLdata$syst_cacc_precpb and BLdata$syst_pacc_precpb
## t = 0.69051, df = 130.16, p-value = 0.4911
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -2.797599  5.797599
## sample estimates:
## mean of x mean of y
##  96.22059  94.72059
```

```
kruskal.test(x = BLdata$map_cacc_precpb, g = BLdata$map_pacc_precpb)
```

2: CA_MAP - PA_MAP

```
##
##  Kruskal-Wallis rank sum test
##
## data:  BLdata$map_cacc_precpb and BLdata$map_pacc_precpb
## Kruskal-Wallis chi-squared = 56.364, df = 32, p-value = 0.004955
```

```
t.test(x = BLdata$map_cacc_precpb, y = BLdata$map_pacc_precpb)
```

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$map_cacc_precpb and BLdata$map_pacc_precpb
## t = 1.2573, df = 131.61, p-value = 0.2109
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -1.315215  5.903450
## sample estimates:
## mean of x mean of y
##  70.04412  67.75000
```

Post 2 Minutes

```
kruskal.test(x = BLdata$syst_cacc_postcpb2, g = BLdata$syst_pacc_postcpb2)
```

3: CA_Syst - PA_Syst

```
##
##  Kruskal-Wallis rank sum test
##
## data:  BLdata$syst_cacc_postcpb2 and BLdata$syst_pacc_postcpb2
## Kruskal-Wallis chi-squared = 55.308, df = 40, p-value = 0.05433
```

```
t.test(x = BLdata$syst_cacc_postcpb2, y = BLdata$syst_pacc_postcpb2)
```

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$syst_cacc_postcpb2 and BLdata$syst_pacc_postcpb2
## t = 1.2105, df = 133.44, p-value = 0.2282
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
```

```
##  -1.827199  7.591904
## sample estimates:
## mean of x mean of y
##  112.1324  109.2500
```

```
kruskal.test(x = BLdata$map_cacc_postcpb2, g = BLdata$map_pacc_postcpb2)
```

4: CA_MAP - PA_MAP

```
##
##  Kruskal-Wallis rank sum test
##
## data:  BLdata$map_cacc_postcpb2 and BLdata$map_pacc_postcpb2
## Kruskal-Wallis chi-squared = 50.159, df = 32, p-value = 0.02152
```

```
t.test(x = BLdata$map_cacc_postcpb2, y = BLdata$map_pacc_postcpb2)
```

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$map_cacc_postcpb2 and BLdata$map_pacc_postcpb2
## t = 3.4306, df = 126.91, p-value = 0.0008132
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##   2.974717 11.084106
## sample estimates:
## mean of x mean of y
##  82.11765  75.08824
```

Post 10 Minutes

```
kruskal.test(x = BLdata$syst_cacc_postcpb10, g = BLdata$syst_pacc_postcpb10)
```

5: CA_Syst - PA_Syst

```
##
##  Kruskal-Wallis rank sum test
##
## data:  BLdata$syst_cacc_postcpb10 and BLdata$syst_pacc_postcpb10
## Kruskal-Wallis chi-squared = 54.576, df = 35, p-value = 0.0186
```

```
t.test(x = BLdata$syst_cacc_postcpb10, y = BLdata$syst_pacc_postcpb10)
```

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$syst_cacc_postcpb10 and BLdata$syst_pacc_postcpb10
## t = 1.9376, df = 129.09, p-value = 0.05486
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.1000944  9.5706827
## sample estimates:
## mean of x mean of y
##  112.4559  107.7206
```

```
kruskal.test(x = BLdata$map_cacc_postcpb10, g = BLdata$map_pacc_postcpb10)
```

6: CA_MAP - PA_MAP

```
##
##  Kruskal-Wallis rank sum test
##
## data:  BLdata$map_cacc_postcpb10 and BLdata$map_pacc_postcpb10
## Kruskal-Wallis chi-squared = 49.611, df = 35, p-value = 0.05189
```

```
t.test(x = BLdata$map_cacc_postcpb10, y = BLdata$map_pacc_postcpb10)
```

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$map_cacc_postcpb10 and BLdata$map_pacc_postcpb10
## t = 1.5535, df = 133.8, p-value = 0.1227
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.839478  6.986537
## sample estimates:
## mean of x mean of y
##  76.16176  73.08824
```

Radial Long:

Pre

```
kruskal.test(x = RLdata$syst_cacc_precpb, g = RLdata$syst_pacc_precpb)
```

7: CA_Syst - PA_Syst

```
##
##  Kruskal-Wallis rank sum test
##
## data:  RLdata$syst_cacc_precpb and RLdata$syst_pacc_precpb
## Kruskal-Wallis chi-squared = 45.74, df = 35, p-value = 0.1057
```

```
t.test(x = RLdata$syst_cacc_precpb, y = RLdata$syst_pacc_precpb)
```

```
##
##  Welch Two Sample t-test
##
## data:  RLdata$syst_cacc_precpb and RLdata$syst_pacc_precpb
## t = 0.78231, df = 123.58, p-value = 0.4355
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -2.865978  6.612010
## sample estimates:
## mean of x mean of y
## 100.03175  98.15873
```

```
kruskal.test(x = RLdata$map_cacc_precpb, g = RLdata$map_pacc_precpb)
```

8: CA_MAP - PA_MAP

```
##
##  Kruskal-Wallis rank sum test
##
## data:  RLdata$map_cacc_precpb and RLdata$map_pacc_precpb
## Kruskal-Wallis chi-squared = 47.187, df = 33, p-value = 0.05216
```

```
t.test(x = RLdata$map_cacc_precpb, y = RLdata$map_pacc_precpb)
```

```
##
##  Welch Two Sample t-test
##
## data:  RLdata$map_cacc_precpb and RLdata$map_pacc_precpb
## t = 1.4817, df = 123.81, p-value = 0.141
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.9541752  6.6367149
## sample estimates:
## mean of x mean of y
##  70.23810  67.39683
```

Post 2 Minutes

```
kruskal.test(x = RLdata$syst_cacc_postcpb2, g = RLdata$syst_pacc_postcpb2)
```

9: CA_Syst - PA_Syst

```
##
##  Kruskal-Wallis rank sum test
##
## data:  RLdata$syst_cacc_postcpb2 and RLdata$syst_pacc_postcpb2
## Kruskal-Wallis chi-squared = 53.972, df = 42, p-value = 0.1019
```

```
t.test(x = RLdata$syst_cacc_postcpb2, y = RLdata$syst_pacc_postcpb2)
```

```
##
##  Welch Two Sample t-test
##
## data:  RLdata$syst_cacc_postcpb2 and RLdata$syst_pacc_postcpb2
## t = 0.91906, df = 115.11, p-value = 0.36
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -3.795763 10.367191
## sample estimates:
## mean of x mean of y
##  113.4762  110.1905
```

```
kruskal.test(x = RLdata$map_cacc_postcpb2, g = RLdata$map_pacc_postcpb2)
```

10: CA_MAP - PA_MAP

```
##
##  Kruskal-Wallis rank sum test
##
```

```
## data:  RLdata$map_cacc_postcpb2 and RLdata$map_pacc_postcpb2
## Kruskal-Wallis chi-squared = 53.75, df = 36, p-value = 0.02884
```

```
t.test(x = RLdata$map_cacc_postcpb2, y = RLdata$map_pacc_postcpb2)
```

```
##
##  Welch Two Sample t-test
##
## data:  RLdata$map_cacc_postcpb2 and RLdata$map_pacc_postcpb2
## t = 4.1421, df = 123.04, p-value = 6.344e-05
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##   5.577528 15.787551
## sample estimates:
## mean of x mean of y
##  84.90476  74.22222
```

Post 10 Minutes

```
RLdata <-
  RLdata %>%
  mutate(syst_pacc_postcpb10 = parse_number(syst_pacc_postcpb10))
```

11: CA_Syst - PA_Syst

```
## Warning: There was 1 warning in `mutate()`.
## i In argument: `syst_pacc_postcpb10 = parse_number(syst_pacc_postcpb10)`.
## Caused by warning:
## ! 1 parsing failure.
## row col expected actual
##  12  -- a number      .
```

```
kruskal.test(x = RLdata$syst_cacc_postcpb10, g = RLdata$syst_pacc_postcpb10)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  RLdata$syst_cacc_postcpb10 and RLdata$syst_pacc_postcpb10
## Kruskal-Wallis chi-squared = 42.977, df = 38, p-value = 0.2665
```

```
t.test(x = RLdata$syst_cacc_postcpb10, y = RLdata$syst_pacc_postcpb10)
```

```
##
##  Welch Two Sample t-test
##
## data:  RLdata$syst_cacc_postcpb10 and RLdata$syst_pacc_postcpb10
## t = 1.7777, df = 102.05, p-value = 0.07844
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.6458104 11.8014684
## sample estimates:
## mean of x mean of y
##  109.1746  103.5968
```

```
RLdata <-
  RLdata %>%
  mutate(map_pacc_postcpb10 = parse_number(map_pacc_postcpb10))
```

12: CA_MAP - PA_MAP

```
## Warning: There was 1 warning in `mutate()`.
## i In argument: `map_pacc_postcpb10 = parse_number(map_pacc_postcpb10)`.
## Caused by warning:
## ! 1 parsing failure.
## row col expected actual
##  12  -- a number      .
```

```
kruskal.test(x = RLdata$map_cacc_postcpb10, g = RLdata$map_pacc_postcpb10)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  RLdata$map_cacc_postcpb10 and RLdata$map_pacc_postcpb10
## Kruskal-Wallis chi-squared = 45.106, df = 28, p-value = 0.02152
```

```
t.test(x = RLdata$map_cacc_postcpb10, y = RLdata$map_pacc_postcpb10)
```

```
##
##  Welch Two Sample t-test
##
## data:  RLdata$map_cacc_postcpb10 and RLdata$map_pacc_postcpb10
## t = 4.0313, df = 120.28, p-value = 9.768e-05
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##   4.376132 12.823049
## sample estimates:
## mean of x mean of y
##  76.82540  68.22581
```

Radial Short:

Pre

```
kruskal.test(x = RSdata$syst_cacc_precpb, g = RSdata$syst_pacc_precpb)
```

13: CA_Syst - PA_Syst

```
##
##  Kruskal-Wallis rank sum test
##
## data:  RSdata$syst_cacc_precpb and RSdata$syst_pacc_precpb
## Kruskal-Wallis chi-squared = 47.521, df = 35, p-value = 0.07698
```

```
t.test(x = RSdata$syst_cacc_precpb, y = RSdata$syst_pacc_precpb)
```

```
##
##  Welch Two Sample t-test
##
## data:  RSdata$syst_cacc_precpb and RSdata$syst_pacc_precpb
```

```
## t = 0.46271, df = 131.62, p-value = 0.6443
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -3.901253  6.283606
## sample estimates:
## mean of x mean of y
##  99.13235  97.94118
```

```
kruskal.test(x = RSdata$map_cacc_precpb, g = RSdata$map_pacc_precpb)
```

14: CA_MAP - PA_MAP

```
##
##  Kruskal-Wallis rank sum test
##
## data:  RSdata$map_cacc_precpb and RSdata$map_pacc_precpb
## Kruskal-Wallis chi-squared = 47.393, df = 30, p-value = 0.02277
```

```
t.test(x = RSdata$map_cacc_precpb, y = RSdata$map_pacc_precpb)
```

```
##
##  Welch Two Sample t-test
##
## data:  RSdata$map_cacc_precpb and RSdata$map_pacc_precpb
## t = 1.3783, df = 131.46, p-value = 0.1705
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -1.152194  6.446312
## sample estimates:
## mean of x mean of y
##  68.86765  66.22059
```

Post 2 Minutes

```
kruskal.test(x = RSdata$syst_cacc_postcpb2, g = RSdata$syst_pacc_postcpb2)
```

15: CA_Syst - PA_Syst

```
##
##  Kruskal-Wallis rank sum test
##
## data:  RSdata$syst_cacc_postcpb2 and RSdata$syst_pacc_postcpb2
## Kruskal-Wallis chi-squared = 50.13, df = 49, p-value = 0.4284
```

```
t.test(x = RSdata$syst_cacc_postcpb2, y = RSdata$syst_pacc_postcpb2)
```

```
##
##  Welch Two Sample t-test
##
## data:  RSdata$syst_cacc_postcpb2 and RSdata$syst_pacc_postcpb2
## t = 2.6223, df = 129.68, p-value = 0.009779
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##   2.336228 16.693184
## sample estimates:
```

```
## mean of x mean of y
##  116.6176  107.1029
```

```
kruskal.test(x = RSdata$map_cacc_postcpb2, g = RSdata$map_pacc_postcpb2)
```

16: CA_MAP - PA_MAP

```
##
##  Kruskal-Wallis rank sum test
##
## data:  RSdata$map_cacc_postcpb2 and RSdata$map_pacc_postcpb2
## Kruskal-Wallis chi-squared = 46.383, df = 33, p-value = 0.0611
```

```
t.test(x = RSdata$map_cacc_postcpb2, y = RSdata$map_pacc_postcpb2)
```

```
##
##  Welch Two Sample t-test
##
## data:  RSdata$map_cacc_postcpb2 and RSdata$map_pacc_postcpb2
## t = 4.7758, df = 132.73, p-value = 4.667e-06
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##   6.900704 16.658120
## sample estimates:
## mean of x mean of y
##  85.02941  73.25000
```

Post 10 Minutes

```
kruskal.test(x = RSdata$syst_cacc_postcpb10, g = RSdata$syst_pacc_postcpb10)
```

17: CA_Syst - PA_Syst

```
##
##  Kruskal-Wallis rank sum test
##
## data:  RSdata$syst_cacc_postcpb10 and RSdata$syst_pacc_postcpb10
## Kruskal-Wallis chi-squared = 46.219, df = 44, p-value = 0.3808
```

```
t.test(x = RSdata$syst_cacc_postcpb10, y = RSdata$syst_pacc_postcpb10)
```

```
##
##  Welch Two Sample t-test
##
## data:  RSdata$syst_cacc_postcpb10 and RSdata$syst_pacc_postcpb10
## t = 2.8687, df = 124.73, p-value = 0.004842
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##   2.43953 13.29576
## sample estimates:
## mean of x mean of y
##  111.0588  103.1912
```

```
kruskal.test(x = RSdata$map_cacc_postcpb10, g = RSdata$map_pacc_postcpb10)
```

18: CA_MAP - PA_MAP

```
##
##  Kruskal-Wallis rank sum test
##
## data:  RSdata$map_cacc_postcpb10 and RSdata$map_pacc_postcpb10
## Kruskal-Wallis chi-squared = 48.683, df = 33, p-value = 0.03853
```

```
t.test(x = RSdata$map_cacc_postcpb10, y = RSdata$map_pacc_postcpb10)
```

```
##
##  Welch Two Sample t-test
##
## data:  RSdata$map_cacc_postcpb10 and RSdata$map_pacc_postcpb10
## t = 4.0809, df = 133.92, p-value = 7.667e-05
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##   4.281883 12.335764
## sample estimates:
## mean of x mean of y
##  76.61765  68.30882
```

Comparisons:

```
BLdata <-
  BLdata %>%
  mutate(CA_PA_systPreDiff = syst_cacc_precpb - syst_pacc_precpb,
         CA_PA_systPost2Diff =  syst_cacc_postcpb2 - syst_pacc_postcpb2,
         CA_PA_systPost10Diff = syst_cacc_postcpb10 - syst_pacc_postcpb10,
         CA_PA_mapPreDiff = map_cacc_precpb - map_pacc_precpb,
         CA_PA_mapPost2Diff =  map_cacc_postcpb2 - map_pacc_postcpb2,
         CA_PA_mapPost10Diff = map_cacc_postcpb10 - map_pacc_postcpb10
         )
```

```
RLdata <-
  RLdata %>%
  mutate(CA_PA_systPreDiff = syst_cacc_precpb - syst_pacc_precpb,
         CA_PA_systPost2Diff =  syst_cacc_postcpb2 - syst_pacc_postcpb2,
         CA_PA_systPost10Diff = syst_cacc_postcpb10 - syst_pacc_postcpb10,
         CA_PA_mapPreDiff = map_cacc_precpb - map_pacc_precpb,
         CA_PA_mapPost2Diff =  map_cacc_postcpb2 - map_pacc_postcpb2,
         CA_PA_mapPost10Diff = map_cacc_postcpb10 - map_pacc_postcpb10
         )
```

```
RSdata <-
  RSdata %>%
  mutate(CA_PA_systPreDiff = syst_cacc_precpb - syst_pacc_precpb,
         CA_PA_systPost2Diff =  syst_cacc_postcpb2 - syst_pacc_postcpb2,
         CA_PA_systPost10Diff = syst_cacc_postcpb10 - syst_pacc_postcpb10,
         CA_PA_mapPreDiff = map_cacc_precpb - map_pacc_precpb,
```

```
        CA_PA_mapPost2Diff =  map_cacc_postcpb2 - map_pacc_postcpb2,
        CA_PA_mapPost10Diff = map_cacc_postcpb10 - map_pacc_postcpb10
        )
```

Adding Proper Variables:

```
# BL and RL

BLdata$hyperlipid <-is.integer(BLdata$hyperlipid)
RLdata$hyperlipid <-is.integer(RLdata$hyperlipid)

BLdata$EF_pre <-is.double(BLdata$EF_pre)
RLdata$EF_pre <-is.double(RLdata$EF_pre)

BLdata$EF_post <-is.double(BLdata$EF_post)
RLdata$EF_post <-is.double(RLdata$EF_post)

BLdata$diast_pacc_precpb <-is.integer(BLdata$diast_pacc_precpb)
RLdata$diast_pacc_precp <-is.integer(RLdata$diast_pacc_precp)

BLdata$wave_pacc_postcpb10 <-is.integer(BLdata$wave_pacc_postcpb10)
RLdata$wave_pacc_postcpb10 <-is.integer(RLdata$wave_pacc_postcpb10)

BLdata$X.4 <- is.integer(BLdata$X.4)
RLdata$X.4 <- is.integer(RLdata$X.4)

BLRLdata <- bind_rows(BLdata, RLdata)
```

```
# BL and RS

BLdata$syst_pacc_cicu <-is.integer(BLdata$syst_pacc_cicu)
RSdata$syst_pacc_cicu <-is.integer(RSdata$syst_pacc_cicu)

BLdata$diast_pacc_cicu <-is.integer(BLdata$diast_pacc_cicu)
RSdata$diast_pacc_cicu <-is.integer(RSdata$diast_pacc_cicu)

BLdata$map_pacc_cicu <-is.integer(BLdata$map_pacc_cicu)
RSdata$map_pacc_cicu <-is.integer(RSdata$map_pacc_cicu)

BLdata$wave_pacc_cicu <-is.integer(BLdata$wave_pacc_cicu)
RSdata$wave_pacc_cicu <-is.integer(RSdata$wave_pacc_cicu)

BLRSdata <- bind_rows(BLdata, RSdata)
```

```
# RL and RS

RLdata$syst_pacc_cicu <- is.integer(RLdata$syst_pacc_cicu)
RSdata$syst_pacc_cicu <- is.integer(RSdata$syst_pacc_cicu)

RLdata$diast_pacc_cicu <- is.integer(RLdata$diast_pacc_cicu)
RSdata$diast_pacc_cicu <- is.integer(RSdata$diast_pacc_cicu)
```

```
RLdata$map_pacc_cicu <- is.integer(RLdata$map_pacc_cicu)
RSdata$map_pacc_cicu <- is.integer(RSdata$map_pacc_cicu)

RLdata$wave_pacc_cicu <- is.integer(RLdata$wave_pacc_cicu)
RSdata$wave_pacc_cicu <- is.integer(RSdata$wave_pacc_cicu)

RLRSdata <- bind_rows(RLdata, RSdata)
```

Setting Up Data Pools:

Pre

```
kruskal.test(x = BLRLdata$syst_cacc_precpb, g = BLRLdata$syst_cacc_precpb)
```

1v7: BL(CA_Syst - PA_Syst) Vs. RL(CA_Syst - PA_Syst)

```
##
##  Kruskal-Wallis rank sum test
##
## data:  BLRLdata$syst_cacc_precpb and BLRLdata$syst_cacc_precpb
## Kruskal-Wallis chi-squared = 130, df = 24, p-value < 2.2e-16
```

```
t.test(x = BLdata$CA_PA_systPreDiff, y = RLdata$CA_PA_systPreDiff)
```

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$CA_PA_systPreDiff and RLdata$CA_PA_systPreDiff
## t = -0.22809, df = 127.12, p-value = 0.8199
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -3.609129  2.863097
## sample estimates:
## mean of x mean of y
##  1.500000  1.873016
```

```
t.test(x = BLdata$CA_PA_mapPreDiff, y = RLdata$CA_PA_mapPreDiff)
```

2v8: BL(CA_MAP - PA_MAP) Vs. RL(CA_MAP - PA_MAP)

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$CA_PA_mapPreDiff and RLdata$CA_PA_mapPreDiff
## t = -0.42538, df = 119.38, p-value = 0.6713
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -3.094019  1.999714
## sample estimates:
## mean of x mean of y
##  2.294118  2.841270
```

```
kruskal.test(x = BLdata$CA_PA_systPreDiff, g = RSdata$CA_PA_systPreDiff)
```

1v13: BL(CA_Syst - PA_Syst) Vs. RS(CA_Syst - PA_Syst)

```
##
##  Kruskal-Wallis rank sum test
##
## data:  BLdata$CA_PA_systPreDiff and RSdata$CA_PA_systPreDiff
## Kruskal-Wallis chi-squared = 31.64, df = 29, p-value = 0.3359
```

```
t.test(x = BLdata$CA_PA_systPreDiff, y = RSdata$CA_PA_systPreDiff)
```

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$CA_PA_systPreDiff and RSdata$CA_PA_systPreDiff
## t = 0.19433, df = 133.89, p-value = 0.8462
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -2.834235  3.451882
## sample estimates:
## mean of x mean of y
##  1.500000  1.191176
```

```
kruskal.test(x = BLdata$CA_PA_mapPreDiff, g = RSdata$CA_PA_mapPreDiff)
```

2v14: BL(CA_MAP - PA_MAP) Vs. RS(CA_MAP - PA_MAP)

```
##
##  Kruskal-Wallis rank sum test
##
## data:  BLdata$CA_PA_mapPreDiff and RSdata$CA_PA_mapPreDiff
## Kruskal-Wallis chi-squared = 11.683, df = 23, p-value = 0.9751
```

```
t.test(x = BLdata$CA_PA_mapPreDiff, y = RSdata$CA_PA_mapPreDiff)
```

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$CA_PA_mapPreDiff and RSdata$CA_PA_mapPreDiff
## t = -0.31644, df = 134, p-value = 0.7522
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -2.558901  1.853019
## sample estimates:
## mean of x mean of y
##  2.294118  2.647059
```

```
t.test(x = RLdata$CA_PA_systPreDiff, y = RSdata$CA_PA_systPreDiff)
```

7v13: RL(CA_Syst - PA_Syst) Vs. RS(CA_Syst - PA_Syst)

```
##
##  Welch Two Sample t-test
```

```
##
## data:  RLdata$CA_PA_systPreDiff and RSdata$CA_PA_systPreDiff
## t = 0.41143, df = 127.89, p-value = 0.6814
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -2.597287  3.960966
## sample estimates:
## mean of x mean of y
##  1.873016  1.191176
```

```
t.test(x = RLdata$CA_PA_mapPreDiff, y = RSdata$CA_PA_mapPreDiff)
```

8v14:RL(CA_MAP - PA_MAP) Vs. RS(CA_MAP - PA_MAP)

```
##
##  Welch Two Sample t-test
##
## data:  RLdata$CA_PA_mapPreDiff and RSdata$CA_PA_mapPreDiff
## t = 0.15123, df = 119.13, p-value = 0.88
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -2.348554  2.736976
## sample estimates:
## mean of x mean of y
##  2.841270  2.647059
```

Post 2 Minutes

```
t.test(x = BLdata$CA_PA_systPost2Diff, y = RLdata$CA_PA_systPost2Diff)
```

3v9: BL(CA_Syst - PA_Syst) Vs. RL(CA_Syst - PA_Syst)

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$CA_PA_systPost2Diff and RLdata$CA_PA_systPost2Diff
## t = -0.1579, df = 108.17, p-value = 0.8748
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -5.466772  4.660049
## sample estimates:
## mean of x mean of y
##  2.882353  3.285714
```

```
t.test(x = BLdata$CA_PA_mapPost2Diff, y = RLdata$CA_PA_mapPost2Diff)
```

4v10: BL(CA_MAP - PA_MAP) Vs. RL(CA_MAP - PA_MAP)

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$CA_PA_mapPost2Diff and RLdata$CA_PA_mapPost2Diff
## t = -1.9785, df = 108.34, p-value = 0.05041
```

```
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -7.312868751  0.006612915
## sample estimates:
## mean of x mean of y
##  7.029412 10.682540
```

```
kruskal.test(x = BLdata$CA_PA_systPost2Diff, g = RSdata$CA_PA_systPost2Diff)
```

3v15: BL(CA_Syst - PA_Syst) Vs. RS(CA_Syst - PA_Syst)

```
##
##  Kruskal-Wallis rank sum test
##
## data:  BLdata$CA_PA_systPost2Diff and RSdata$CA_PA_systPost2Diff
## Kruskal-Wallis chi-squared = 36.279, df = 43, p-value = 0.756
```

```
t.test(x = BLdata$CA_PA_systPost2Diff, y = RSdata$CA_PA_systPost2Diff)
```

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$CA_PA_systPost2Diff and RSdata$CA_PA_systPost2Diff
## t = -2.3061, df = 104.92, p-value = 0.02307
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -12.3351050  -0.9296009
## sample estimates:
## mean of x mean of y
##  2.882353  9.514706
```

```
kruskal.test(x = BLdata$CA_PA_mapPost2Diff, g = RSdata$CA_PA_mapPost2Diff)
```

4v16: BL(CA_MAP - PA_MAP) Vs. RS(CA_MAP - PA_MAP)

```
##
##  Kruskal-Wallis rank sum test
##
## data:  BLdata$CA_PA_mapPost2Diff and RSdata$CA_PA_mapPost2Diff
## Kruskal-Wallis chi-squared = 29.965, df = 29, p-value = 0.4157
```

```
t.test(x = BLdata$CA_PA_mapPost2Diff, y = RSdata$CA_PA_mapPost2Diff)
```

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$CA_PA_mapPost2Diff and RSdata$CA_PA_mapPost2Diff
## t = -2.5215, df = 113.8, p-value = 0.01307
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -8.481834 -1.018166
## sample estimates:
## mean of x mean of y
##  7.029412 11.779412
```

```
t.test(x = RLdata$CA_PA_systPost2Diff, y = RSdata$CA_PA_systPost2Diff)
```

9v15: RL(CA_Syst - PA_Syst) Vs. RS(CA_Syst - PA_Syst)

```
##
##  Welch Two Sample t-test
##
## data:  RLdata$CA_PA_systPost2Diff and RSdata$CA_PA_systPost2Diff
## t = -1.8884, df = 127.11, p-value = 0.06125
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -12.7561160   0.2981328
## sample estimates:
## mean of x mean of y
##  3.285714  9.514706
```

```
t.test(x = RLdata$CA_PA_mapPost2Diff, y = RSdata$CA_PA_mapPost2Diff)
```

10v16: RL(CA_MAP - PA_MAP) Vs. RS(CA_MAP - PA_MAP)

```
##
##  Welch Two Sample t-test
##
## data:  RLdata$CA_PA_mapPost2Diff and RSdata$CA_PA_mapPost2Diff
## t = -0.4953, df = 128.99, p-value = 0.6212
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -5.478440  3.284695
## sample estimates:
## mean of x mean of y
##  10.68254  11.77941
```

Post 10 Minutes

```
t.test(x = BLdata$CA_PA_systPost10Diff, y = RLdata$CA_PA_systPost10Diff)
```

5v11: BL(CA_Syst - PA_Syst) Vs. RL(CA_Syst - PA_Syst)

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$CA_PA_systPost10Diff and RLdata$CA_PA_systPost10Diff
## t = -0.34502, df = 100.17, p-value = 0.7308
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -6.686219  4.705194
## sample estimates:
## mean of x mean of y
##  4.735294  5.725806
```

```
t.test(x = BLdata$CA_PA_mapPost10Diff, y = RLdata$CA_PA_mapPost10Diff)
```

6v12: BL(CA_MAP - PA_MAP) Vs. RL(CA_MAP - PA_MAP)

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$CA_PA_mapPost10Diff and RLdata$CA_PA_mapPost10Diff
## t = -2.9291, df = 111.06, p-value = 0.004126
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -9.584282 -1.849304
## sample estimates:
## mean of x mean of y
##  3.073529  8.790323
```

```
kruskal.test(x = BLdata$CA_PA_systPost10Diff, g = RSdata$CA_PA_systPost10Diff)
```

5v17: BL(CA_Syst - PA_Syst) Vs. RS(CA_Syst - PA_Syst)

```
##
##  Kruskal-Wallis rank sum test
##
## data:  BLdata$CA_PA_systPost10Diff and RSdata$CA_PA_systPost10Diff
## Kruskal-Wallis chi-squared = 39.647, df = 42, p-value = 0.5748
```

```
t.test(x = BLdata$CA_PA_systPost10Diff, y = RSdata$CA_PA_systPost10Diff)
```

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$CA_PA_systPost10Diff and RSdata$CA_PA_systPost10Diff
## t = -1.3074, df = 125.94, p-value = 0.1935
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -7.873795  1.609090
## sample estimates:
## mean of x mean of y
##  4.735294  7.867647
```

```
kruskal.test(x = BLdata$CA_PA_mapPost10Diff, g = RSdata$CA_PA_mapPost10Diff)
```

6v18: BL(CA_MAP - PA_MAP) Vs. RS(CA_MAP - PA_MAP)

```
##
##  Kruskal-Wallis rank sum test
##
## data:  BLdata$CA_PA_mapPost10Diff and RSdata$CA_PA_mapPost10Diff
## Kruskal-Wallis chi-squared = 33.381, df = 32, p-value = 0.4
```

```
t.test(x = BLdata$CA_PA_mapPost10Diff, y = RSdata$CA_PA_mapPost10Diff)
```

```
##
##  Welch Two Sample t-test
##
## data:  BLdata$CA_PA_mapPost10Diff and RSdata$CA_PA_mapPost10Diff
## t = -3.2246, df = 133.65, p-value = 0.001586
```

```
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -8.446458 -2.024130
## sample estimates:
## mean of x mean of y
##  3.073529  8.308824
```

```
t.test(x = RLdata$CA_PA_systPost10Diff, y = RSdata$CA_PA_systPost10Diff)
```

11v17: RL(CA_Syst - PA_Syst) Vs. RS(CA_Syst - PA_Syst)

```
##
##  Welch Two Sample t-test
##
## data:  RLdata$CA_PA_systPost10Diff and RSdata$CA_PA_systPost10Diff
## t = -0.68792, df = 117.09, p-value = 0.4929
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -8.307959  4.024278
## sample estimates:
## mean of x mean of y
##  5.725806  7.867647
```

```
t.test(x = RLdata$CA_PA_mapPost10Diff, y = RSdata$CA_PA_mapPost10Diff)
```

12v18: RL(CA_MAP - PA_MAP) Vs. RS(CA_MAP - PA_MAP)

```
##
##  Welch Two Sample t-test
##
## data:  RLdata$CA_PA_mapPost10Diff and RSdata$CA_PA_mapPost10Diff
## t = 0.24246, df = 114.4, p-value = 0.8089
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -3.452311  4.415309
## sample estimates:
## mean of x mean of y
##  8.790323  8.308824
```

Statistical Summary of Differences

Brachial Long

```
BLdata %>%
  summarise(Mean_PreSyst = mean(CA_PA_systPreDiff),
            SD_PreSyst = sd(CA_PA_systPreDiff),
            Mean_PreMAP = mean(CA_PA_mapPreDiff),
            SD_PreMAP = sd(CA_PA_mapPreDiff)
            )
```

Pre

```
##   Mean_PreSyst SD_PreSyst Mean_PreMAP SD_PreMAP
## 1          1.5   9.133341    2.294118   6.51762
```

```
BLdata %>%
  summarise(Mean_Post2Syst = mean(CA_PA_systPost2Diff),
            SD_Post2Syst = sd(CA_PA_systPost2Diff),
            Mean_Post2MAP = mean(CA_PA_mapPost2Diff),
            SD_Post2MAP = sd(CA_PA_mapPost2Diff)
            )
```

Post 2 Minutes

```
##   Mean_Post2Syst SD_Post2Syst Mean_Post2MAP SD_Post2MAP
## 1       2.882353     11.54036      7.029412    8.355837
```

```
BLdata %>%
  summarise(Mean_Post10Syst = mean(CA_PA_systPost10Diff),
            SD_Post10Syst = sd(CA_PA_systPost10Diff),
            Mean_Post10MAP = mean(CA_PA_mapPost10Diff),
            SD_Post10MAP = sd(CA_PA_mapPost10Diff)
            )
```

Post 10 Minutes

```
##   Mean_Post10Syst SD_Post10Syst Mean_Post10MAP SD_Post10MAP
## 1        4.735294      12.07516       3.073529     9.222484
```

Radial Long

```
RLdata %>%
  summarise(Mean_PreSyst = mean(CA_PA_systPreDiff),
            SD_PreSyst = sd(CA_PA_systPreDiff),
            Mean_PreMAP = mean(CA_PA_mapPreDiff),
            SD_PreMAP = sd(CA_PA_mapPreDiff)
            )
```

Pre

```
##   Mean_PreSyst SD_PreSyst Mean_PreMAP SD_PreMAP
## 1     1.873016   9.550362     2.84127  8.054665
```

```
RLdata %>%
  summarise(Mean_Post2Syst = mean(CA_PA_systPost2Diff),
            SD_Post2Syst = sd(CA_PA_systPost2Diff),
            Mean_Post2MAP = mean(CA_PA_mapPost2Diff),
            SD_Post2MAP = sd(CA_PA_mapPost2Diff)
            )
```

Post 2 Minutes

```
##   Mean_Post2Syst SD_Post2Syst Mean_Post2MAP SD_Post2MAP
## 1       3.285714     16.96241      10.68254    12.25117
```

```
RLdata %>%
  summarise(Mean_Post10Syst = mean(CA_PA_systPost10Diff,na.rm = TRUE),
            SD_Post10Syst = sd(CA_PA_systPost10Diff,na.rm = TRUE),
            Mean_Post10MAP = mean(CA_PA_mapPost10Diff,na.rm = TRUE),
            SD_Post10MAP = sd(CA_PA_mapPost10Diff,na.rm = TRUE)
            )
```

Post 10 Minutes

```
##   Mean_Post10Syst SD_Post10Syst Mean_Post10MAP SD_Post10MAP
## 1        5.725806      19.44405       8.790323     12.59474
```

Radial Short

```
RSdata %>%
  summarise(Mean_PreSyst = mean(CA_PA_systPreDiff),
            SD_PreSyst = sd(CA_PA_systPreDiff),
            Mean_PreMAP = mean(CA_PA_mapPreDiff),
            SD_PreMAP = sd(CA_PA_mapPreDiff)
            )
```

Pre

```
##   Mean_PreSyst SD_PreSyst Mean_PreMAP SD_PreMAP
## 1     1.191176   9.397137    2.647059  6.489405
```

```
RSdata %>%
  summarise(Mean_Post2Syst = mean(CA_PA_systPost2Diff),
            SD_Post2Syst = sd(CA_PA_systPost2Diff),
            Mean_Post2MAP = mean(CA_PA_mapPost2Diff),
            SD_Post2MAP = sd(CA_PA_mapPost2Diff)
            )
```

Post 2 Minutes

```
##   Mean_Post2Syst SD_Post2Syst Mean_Post2MAP SD_Post2MAP
## 1       9.514706     20.71951      11.77941    13.09534
```

```
RSdata %>%
  summarise(Mean_Post10Syst = mean(CA_PA_systPost10Diff),
            SD_Post10Syst = sd(CA_PA_systPost10Diff),
            Mean_Post10MAP = mean(CA_PA_mapPost10Diff),
            SD_Post10MAP = sd(CA_PA_mapPost10Diff)
            )
```

Post 10 Minutes

```
##   Mean_Post10Syst SD_Post10Syst Mean_Post10MAP SD_Post10MAP
## 1        7.867647       15.6376       8.308824     9.704988
```