Report Pilot CFTR

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Loading dataset

```
options(stringsAsFactors=FALSE)
dataset <- read.table("../data/CPET_FC_Luglio2018_1.csv", header=TRUE, sep="\t")
ds <- dataset[,-c(1,grep("PRED", colnames(dataset)))]
```

computing % on mean of patients

```
#on the mean
dds <- t(as.data.frame(apply(ds, 2, mean)))
post.idx <- grep("POST", colnames(ds))
change.val <- dds[,post.idx] - dds[,post.idx-1]
change.val.percentage <- (change.val/dds[,post.idx-1])*100
change.val.percentage <- t(as.data.frame(change.val.percentage))
colnames(change.val.percentage) <- gsub(".POST", ".Percentage", colnames(change.val.percentage))
write.xlsx(x=change.val.percentage, file="Percentage_Change_Values_on_Means.xls", row.names=FALSE)

change.val.percentage
```

```
##                       BMI.Percentage FEV1.Percentage FVC.Percentage
## change.val.percentage       5.194805       -21.90016      -12.85971
##                       FEV1_FVC.Percentage FEF25_75.Percentage
## change.val.percentage           -10.04159           -28.10219
##                       RV.Percentage FRC.Percentage TLC.Percentage
## change.val.percentage      37.42138       24.29907       7.372301
##                       RV_TLC.Percentage FRC_TLC.Percentage DLCO.Percentage
## change.val.percentage          26.51072           15.27166       -1.821301
##                       N.total.Exacerbations.Percentage
## change.val.percentage                         -55.55556
##                       Tot.energy.exp_cal.Percentage
## change.val.percentage                       5.40275
##                       Duration.Phys.Act.Percentage
## change.val.percentage                     36.69565
##                       Active.energy.exp_cal.Percentage No.Steps.Percentage
## change.val.percentage                         31.85563           -24.24856
##                       Avg.mets.Percentage Lying.Time.Percentage
## change.val.percentage            3.773585              2.477632
##                       Sleep.duration..Percentage Time.on.body.Percentage
## change.val.percentage                   6.806283               -1.012536
##                       Mild.activity.Percentage
## change.val.percentage                 52.58621
```

```
##                        Moderate.Activity.Percentage
## change.val.percentage                     -19.35484
##                        Vigorous.Activity.Percentage
## change.val.percentage                     -83.33333
##                        Moderate__Vigorous.Percentage VO2.rest.Percentage
## change.val.percentage                      -29.72973            9.251069
##                        VO2_Kg.rest.Percentage VO2.AT.Percentage
## change.val.percentage               8.254157          14.35675
##                        VO2_Kg.AT.Percentage VO2.peak.Percentage
## change.val.percentage             8.219178            21.34286
##                        VO2.peak_Kg.Percentage Watt.Max.Percentage
## change.val.percentage               16.28529           -11.45833
##                        Sforzomin.Percentage VE.rest.Percentage
## change.val.percentage            -4.545455          -24.49785
##                        VE.AT.Percentage VE.max.l_min.Percentage
## change.val.percentage        -10.48636               -3.309152
##                        VE_VCO2.LT.Percentage VE_VCO2max.Percentage
## change.val.percentage                    NA             -2.067574
##                        Fc.max.Percentage FR.rest.Percentage
## change.val.percentage         -4.303279          -7.164013
##                        FR.AT.Percentage FR.peak.Percentage
## change.val.percentage        -29.61036          -13.80338
##                        DeltaIC.Percentage Delta.SpO2.Percentage
## change.val.percentage                 NA                    40
```

computing % on each patient

```
#for each patient
post.idx <- grep("POST", colnames(ds))
change.val <- ds[,post.idx] - ds[,post.idx-1]
change.val.percentage <- (change.val/ds[,post.idx-1])*100
colnames(change.val.percentage) <- gsub(".POST", ".Percentage", colnames(change.val.percentage))
rownames(change.val.percentage) <- c(1:3)

write.xlsx(x=change.val.percentage, file="Percentage_Change_Values_on_Patients.xls", row.names=TRUE)

change.val.percentage
```

```
##   BMI.Percentage FEV1.Percentage FVC.Percentage FEV1_FVC.Percentage
## 1      11.255411       -17.25490      -6.415929          -11.347518
## 2       2.666667       -26.58228     -19.259259           -8.717949
## 3       1.687764       -24.03846     -15.897436          -10.112360
##   FEF25_75.Percentage RV.Percentage FRC.Percentage TLC.Percentage
## 1           -28.07018      14.47964      -14.51187       1.274788
## 2           -36.61972      50.81081       43.77880      22.103004
## 3           -21.34831      48.69565       64.61538       3.851444
##   RV_TLC.Percentage FRC_TLC.Percentage DLCO.Percentage
## 1          13.09904          -15.45624        35.81752
## 2          23.42569           17.55889       -14.12450
## 3          43.67089           58.37989       -20.75688
##   N.total.Exacerbations.Percentage Tot.energy.exp_cal.Percentage
## 1                       -100.00000                     -8.276754
```

```
## 2                       -50.00000                      9.645277
## 3                       -33.33333                     17.859953
##   Duration.Phys.Act.Percentage Active.energy.exp_cal.Percentage
## 1                    -3.114187                         -14.45171
## 2                    59.390863                          54.92021
## 3                   115.730337                         142.38095
##   No.Steps.Percentage Avg.mets.Percentage Lying.Time.Percentage
## 1           -36.81870           -9.523810              11.29707
## 2           -13.39847            5.555556               9.71564
## 3           -11.80067           21.428571             -10.66908
##   Sleep.duration..Percentage Time.on.body.Percentage
## 1                  24.046921               8.301307
## 2                   2.459016              -0.698324
## 3                  -2.961276              -9.893993
##   Mild.activity.Percentage Moderate.Activity.Percentage
## 1                 13.14554                    -36.66667
## 2                 84.43114                    -79.31034
## 3                 89.28571                    675.00000
##   Vigorous.Activity.Percentage Moderate__Vigorous.Percentage
## 1                       -93.75                     -48.68421
## 2                      -100.00                     -80.00000
## 3                       100.00                     560.00000
##   VO2.rest.Percentage VO2_Kg.rest.Percentage VO2.AT.Percentage
## 1           28.085503              15.864528         15.083942
## 2            9.920009               7.544141          6.168617
## 3           -8.712614               0.600000         23.519634
##   VO2_Kg.AT.Percentage VO2.peak.Percentage VO2.peak_Kg.Percentage
## 1             3.336921           29.100529               16.333333
## 2             4.395604           28.333403               26.281263
## 3            21.600000            5.555556                4.228122
##   Watt.Max.Percentage Sforzomin.Percentage VE.rest.Percentage
## 1               0.000            -5.555556          -25.99388
## 2               0.000            -4.166667          -12.34634
## 3            -34.375             -3.571429          -34.29952
##   VE.AT.Percentage VE.max.l_min.Percentage VE_VCO2.LT.Percentage
## 1       -12.114014                8.295545                    NA
## 2       -13.107152                8.636977              5.462583
## 3        -5.706522              -26.865672             -6.000000
##   VE_VCO2max.Percentage Fc.max.Percentage FR.rest.Percentage
## 1             -2.632414          3.205128          -21.26379
## 2             -2.467685          1.744186          -13.09131
## 3             -1.131626        -18.125000           17.29560
##   FR.AT.Percentage FR.peak.Percentage DeltaIC.Percentage
## 1      -32.9307057         -20.440882          -45.45455
## 2      -46.2561962          -1.449275                 NA
## 3        0.8196721         -23.058824         -112.08791
##   Delta.SpO2.Percentage
## 1              33.33333
## 2             250.00000
## 3             -40.00000
```