Linear Models

Linear Model - 2.1.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##  Data: physiological_questionnaire_df
##        AIC       BIC    logLik
##   -23.13683 -13.09892 18.56841
##
## Random effects:
##  Formula: ~1 | Participant_ID
##         (Intercept)   Residual
## StdDev:  0.07269271 0.08326459
##
## Fixed effects: PP ~ Day + NASA_summative
##                    Value  Std.Error DF   t-value p-value
## (Intercept)    -5.534694 0.05870453 23 -94.28054  0.0000
## DayDay1        -0.001960 0.04163420 23  -0.04709  0.9629
## DayDay2        -0.026501 0.04436243 23  -0.59738  0.5561
## DayDay3        -0.001307 0.03943975 23  -0.03315  0.9738
## NASA_summative  0.000096 0.00091203 23   0.10558  0.9168
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.056
## DayDay2         0.067  0.572
## DayDay3        -0.409  0.437  0.395
## NASA_summative -0.779 -0.333 -0.466  0.098
##
## Standardized Within-Group Residuals:
##         Min          Q1         Med          Q3         Max
## -3.53714678 -0.24828470  0.04956157  0.29999869  2.04891090
##
## Number of Observations: 36
## Number of Groups: 9


##                 numDF denDF  F-value p-value
## (Intercept)         1    23 39312.64  <.0001
## Day                 3    23     0.18  0.9081
## NASA_summative      1    23     0.01  0.9168
```

Linear Model - 2.2.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##   Data: physiological_questionnaire_df
##         AIC       BIC    logLik
##    -42.53027 -32.72188 28.26513
##
## Random effects:
##  Formula: ~1 | Participant_ID
##         (Intercept)    Residual
## StdDev:  0.08370278 0.05089243
##
## Fixed effects: E4_HR ~ Day + NASA_summative
##                     Value  Std.Error DF  t-value p-value
## (Intercept)      4.360065 0.04474749 22 97.43708  0.0000
## DayDay1          0.001095 0.02572826 22  0.04256  0.9664
## DayDay2         -0.027448 0.02813870 22 -0.97544  0.3399
## DayDay3          0.009909 0.02412903 22  0.41067  0.6853
## NASA_summative -0.000364 0.00061056 22 -0.59696  0.5566
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.003
## DayDay2         0.088  0.565
## DayDay3        -0.340  0.425  0.374
## NASA_summative -0.684 -0.361 -0.463  0.107
##
## Standardized Within-Group Residuals:
##        Min         Q1        Med         Q3        Max
## -1.7524449 -0.4852975  0.1068064  0.4376584  1.4345911
##
## Number of Observations: 35
## Number of Groups: 9


##                numDF denDF   F-value p-value
## (Intercept)        1    22 22038.315  <.0001
## Day                3    22     1.248  0.3164
## NASA_summative     1    22     0.356  0.5566
```

Linear Model - 2.3.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##  Data: physiological_questionnaire_df
##        AIC      BIC    logLik
##   68.94634 78.75472 -27.47317
##
## Random effects:
##  Formula: ~1 | Participant_ID
##         (Intercept) Residual
## StdDev:   0.4177661 0.351744
##
## Fixed effects: E4_EDA ~ Day + NASA_summative
##                    Value  Std.Error DF   t-value p-value
## (Intercept)    -1.7934425 0.27320551 22 -6.564445  0.0000
## DayDay1        -0.1925168 0.17698541 22 -1.087755  0.2885
## DayDay2         0.0186744 0.19307712 22  0.096720  0.9238
## DayDay3         0.3188103 0.16669982 22  1.912481  0.0689
## NASA_summative  0.0007025 0.00406538 22  0.172802  0.8644
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.024
## DayDay2         0.076  0.560
## DayDay3        -0.379  0.430  0.381
## NASA_summative -0.746 -0.350 -0.452  0.103
##
## Standardized Within-Group Residuals:
##        Min         Q1        Med         Q3        Max
## -1.7055994 -0.5052754 -0.1823618  0.5749157  1.6893575
##
## Number of Observations: 35
## Number of Groups: 9


##                numDF denDF   F-value p-value
## (Intercept)        1    22 128.30480  <.0001
## Day                3    22   3.07726  0.0487
## NASA_summative     1    22   0.02986  0.8644
```

Linear Model - 2.4.1 -> Random Effect

```
## Linear mixed-effects model fit by REML
##  Data: physiological_questionnaire_df
##        AIC     BIC    logLik
##   -20.30268 -11.496 17.15134
##
## Random effects:
##  Formula: ~1 | Participant_ID
##         (Intercept)   Residual
## StdDev:  0.08039971 0.07108449
##
## Fixed effects: iWatch_HR ~ Day + NASA_summative
##                    Value  Std.Error DF  t-value p-value
## (Intercept)     4.274398 0.06241651 19 68.48185  0.0000
## DayDay1        -0.007659 0.03940871 19 -0.19436  0.8480
## DayDay2        -0.021620 0.04243363 19 -0.50950  0.6163
## DayDay3         0.033529 0.03736956 19  0.89723  0.3808
## NASA_summative  0.000427 0.00088706 19  0.48153  0.6356
##  Correlation:
##                (Intr) DayDy1 DayDy2 DayDy3
## DayDay1        -0.042
## DayDay2         0.094  0.609
## DayDay3        -0.410  0.467  0.414
## NASA_summative -0.775 -0.336 -0.485  0.117
##
## Standardized Within-Group Residuals:
##         Min          Q1         Med          Q3         Max
## -1.48361984 -0.60235851  0.08616897  0.62213979  1.44972051
##
## Number of Observations: 31
## Number of Groups: 8


##                numDF denDF   F-value p-value
## (Intercept)        1    19 19040.776  <.0001
## Day                3    19     0.548  0.6557
## NASA_summative     1    19     0.232  0.6356
```