subsample

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December 17, 2018

```
#### select subsample data ITI
library(dplyr)
temp1 = subset(ITI_noout, TYPE == 'fa')
temp2 = sample_n(subset(ITI_noout, TYPE == 'fc'), nrow(temp1))
temp3 = sample_n(subset(ITI_noout, TYPE == 'ma'), nrow(temp1))
temp4 = sample_n(subset(ITI_noout, TYPE == 'mc'), nrow(temp1))
sub_ITI = rbind(temp1,temp2,temp3,temp4)
table(sub_ITI$sex, sub_ITI$diag)
```

```
##
##          ADHD Control
##   Female   98      98
##   Male     98      98
```

```
#### select subsample data ITI
temp1 = subset(ITI_noout_sd, TYPE == 'fa')
temp2 = sample_n(subset(ITI_noout_sd, TYPE == 'fc'), nrow(temp1))
temp3 = sample_n(subset(ITI_noout_sd, TYPE == 'ma'), nrow(temp1))
temp4 = sample_n(subset(ITI_noout_sd, TYPE == 'mc'), nrow(temp1))
sub_ITI_sd = rbind(temp1,temp2,temp3,temp4)
table(sub_ITI_sd$sex, sub_ITI_sd$diag)
```

```
##
##          ADHD Control
##   Female   98      98
##   Male     98      98
```

```
#### select subsample data NT
temp1 = subset(NT_noout, TYPE == 'fa')
temp2 = sample_n(subset(NT_noout, TYPE == 'fc'), nrow(temp1))
temp3 = sample_n(subset(NT_noout, TYPE == 'ma'), nrow(temp1))
temp4 = sample_n(subset(NT_noout, TYPE == 'mc'), nrow(temp1))
sub_NT = rbind(temp1,temp2,temp3,temp4)
table(sub_NT$sex, sub_NT$diag)
```

```
##
##          ADHD Control
##   Female   98      98
##   Male     98      98
```

```
ezANOVA(data = ITI_noout,
        wid = partno,
        between = .(sex, diag),
        dv = ITI,
        type = 3)
```

```
## $ANOVA
##     Effect DFn DFd           F           p p<.05           ges
## 2      sex   1 939 8.627864610 0.003391483     * 0.009104697036
## 3     diag   1 939 0.003726074 0.951339090       0.000003968114
```

```
## 4 sex:diag   1 939 0.017191498 0.895711352       0.000018307969
##
## $`Levene's Test for Homogeneity of Variance`
##   DFn DFd       SSn      SSd        F         p p<.05
## 1   3 939 0.2030816 43.43747 1.463358 0.2230441
```

```
ezANOVA(data = sub_ITI,
        wid = partno,
        between = .(sex, diag),
        dv = ITI,
        type = 3)
```

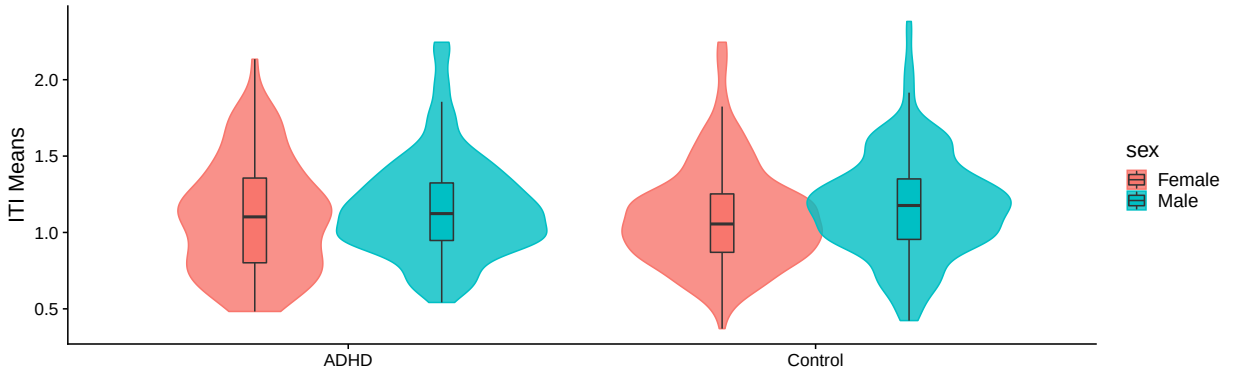
```
## $ANOVA
##     Effect DFn DFd          F           p p<.05          ges
## 2      sex   1 388 9.09281845 0.002734955     * 0.0228984712
## 3     diag   1 388 0.04671082 0.829002433       0.0001203742
## 4 sex:diag   1 388 0.07206789 0.788492060       0.0001857075
##
## $`Levene's Test for Homogeneity of Variance`
##   DFn DFd       SSn      SSd        F        p p<.05
## 1   3 388 0.2463124 17.65945 1.803929 0.145913
```

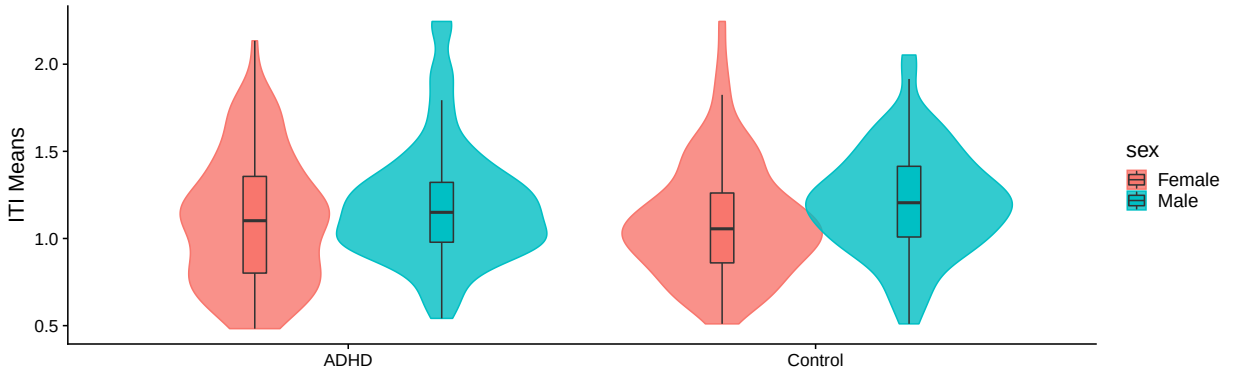
```
dodge = position_dodge(width = 0.8)

ITI_plot = ggplot(ITI_noout, aes(diag,y=ITI, fill = sex)) +
  geom_violin(aes(fill=sex,color=sex),alpha=.8, position = dodge) +
  geom_boxplot(outlier.shape = NA,position=dodge, width=0.1)+
  theme +
  xlab("Regular") +
  ylab("ITI Means")

ITI_plot_sub = ggplot(sub_ITI, aes(diag,y=ITI, fill = sex)) +
  geom_violin(aes(fill=sex,color=sex),alpha=.8, position = dodge) +
  geom_boxplot(outlier.shape = NA,position=dodge, width=0.1)+
  theme +
  xlab("Sub-Analysis") +
  ylab("ITI Means")

plot_grid(ITI_plot,ITI_plot_sub, ncol = 1)
```






```
ezANOVA(data = ITI_noout_sd,
        wid = partno,
        between = .(sex, diag),
        dv = ITI,
        type = 3)
```

```
## $ANOVA
##     Effect DFn DFd           F          p p<.05            ges
## 2      sex   1 939 3.316743712 0.06889563       0.0035197758442
## 3     diag   1 939 4.688178173 0.03062208     * 0.0049679314432
## 4 sex:diag   1 939 0.000868469 0.97649617       0.0000009248863
##
## $`Levene's Test for Homogeneity of Variance`
##   DFn DFd       SSn      SSd        F         p p<.05
## 1   3 939 0.7924448 142.2662 1.743459 0.1564699
```

```
ezANOVA(data = sub_ITI_sd,
        wid = partno,
        between = .(sex, diag),
        dv = ITI,
        type = 3)
```

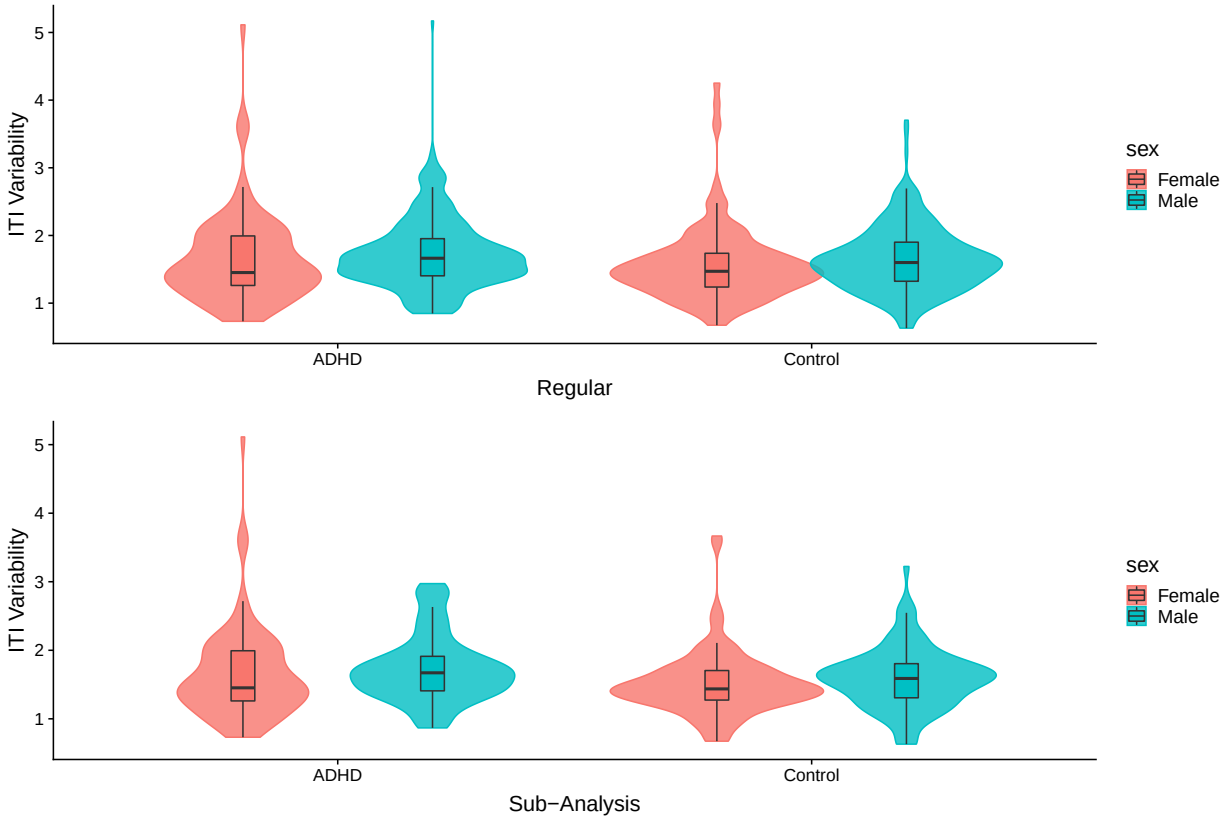
```
## $ANOVA
##     Effect DFn DFd            F          p p<.05            ges
## 2      sex   1 388 2.2718261181 0.13255833       0.0058211378995
## 3     diag   1 388 6.7879210596 0.00953069     * 0.0171938418010
## 4 sex:diag   1 388 0.0002087365 0.98848022       0.0000005379803
##
```

```
## $`Levene's Test for Homogeneity of Variance`
##   DFn DFd      SSn      SSd        F          p p<.05
## 1   3 388 1.273759 59.36042 2.775241 0.04115047     *
```

```
ITI_plot_sd = ggplot(ITI_noout_sd, aes(diag,y=ITI, fill = sex)) +
  geom_violin(aes(fill=sex,color=sex),alpha=.8, position = dodge) +
  geom_boxplot(outlier.shape = NA,position=dodge, width=0.1)+
  theme +
  xlab("Regular") +
  ylab("ITI Variability")

ITI_plot_sd_sub = ggplot(sub_ITI_sd, aes(diag,y=ITI, fill = sex)) +
  geom_violin(aes(fill=sex,color=sex),alpha=.8, position = dodge) +
  geom_boxplot(outlier.shape = NA,position=dodge, width=0.1)+
  theme +
  xlab("Sub-Analysis") +
  ylab("ITI Variability")

plot_grid(ITI_plot_sd,ITI_plot_sd_sub, ncol = 1)
```




```
ezANOVA(data = NT_noout,
        wid = partno,
        between = .(sex, diag),
        dv = NT,
        type = 3)
```

```
## $ANOVA
##     Effect DFn DFd           F           p p<.05         ges
```

```
## 2      sex   1 942 11.24800141 0.0008288679     * 0.01179965905
## 3     diag   1 942  0.06180031 0.8037269591       0.00006560112
## 4 sex:diag   1 942  0.17912890 0.6722195315       0.00019012191
##
## $`Levene's Test for Homogeneity of Variance`
##   DFn DFd        SSn      SSd        F          p p<.05
## 1   3 942 0.01703209 1.868918 2.861588 0.03590594     *
```

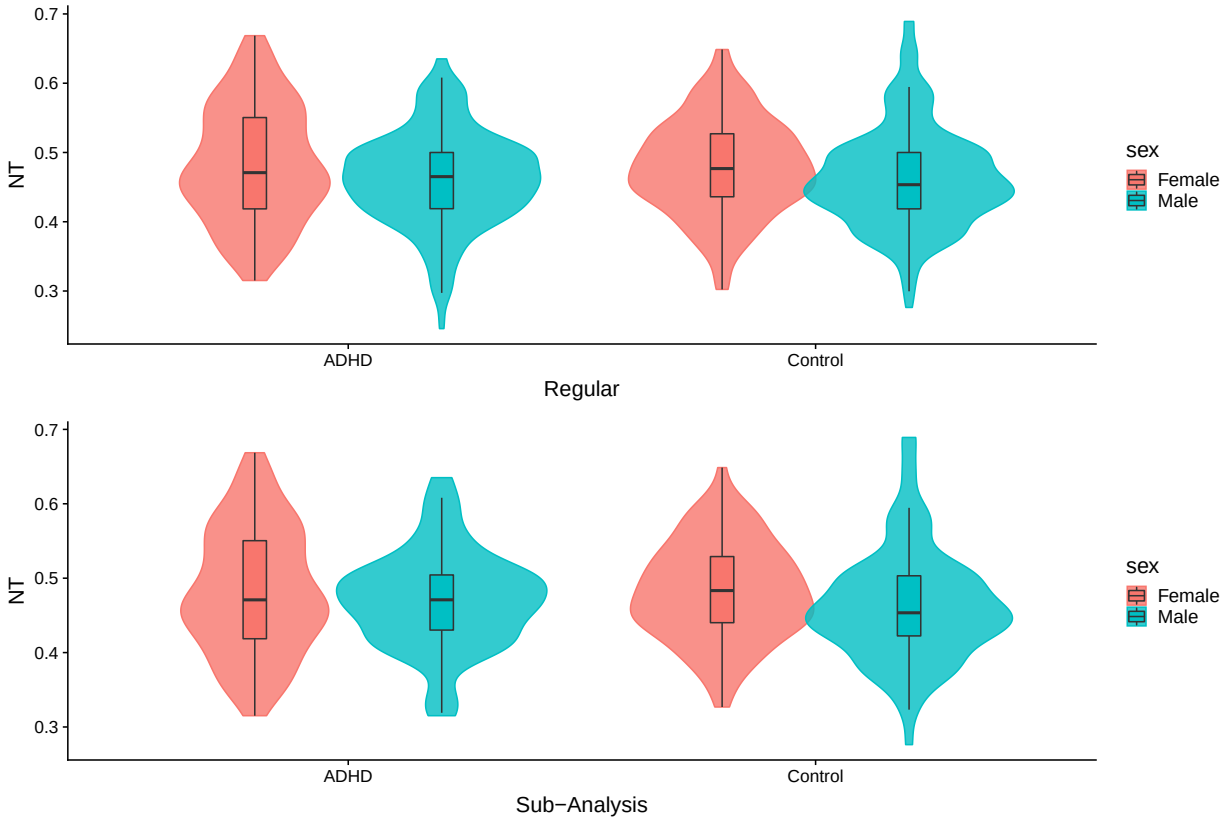
```
ezANOVA(data = sub_NT,
        wid = partno,
        between = .(sex, diag),
        dv = NT,
        type = 3)
```

```
## $ANOVA
##     Effect DFn DFd         F         p p<.05          ges
## 2      sex   1 388 4.3088200 0.0385734     * 0.0109832351
## 3     diag   1 388 0.3282365 0.5670312       0.0008452552
## 4 sex:diag   1 388 0.3230802 0.5700912       0.0008319881
##
## $`Levene's Test for Homogeneity of Variance`
##   DFn DFd        SSn       SSd        F          p p<.05
## 1   3 388 0.01753748 0.7844685 2.891359 0.03527617     *
```

```
NT_plot = ggplot(NT_noout, aes(diag,y=NT, fill = sex)) +
  geom_violin(aes(fill=sex,color=sex),alpha=.8, position = dodge) +
  geom_boxplot(outlier.shape = NA,position=dodge, width=0.1)+
  theme +
  xlab("Regular") +
  ylab("NT")

NT_plot_sub = ggplot(sub_NT, aes(diag,y=NT, fill = sex)) +
  geom_violin(aes(fill=sex,color=sex),alpha=.8, position = dodge) +
  geom_boxplot(outlier.shape = NA,position=dodge, width=0.1)+
  theme +
  xlab("Sub-Analysis") +
  ylab("NT")

plot_grid(NT_plot,NT_plot_sub, ncol = 1)
```


0.7
0.6
0.5
0.4
0.3
NT
ADHD
Control
Regular
sex
Female
Male
0.7
0.6
0.5
0.4
0.3
NT
ADHD
Control
Sub−Analysis
sex
Female
Male