ABCD Analysis

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Compute RT for VSL

t.test for rt slope

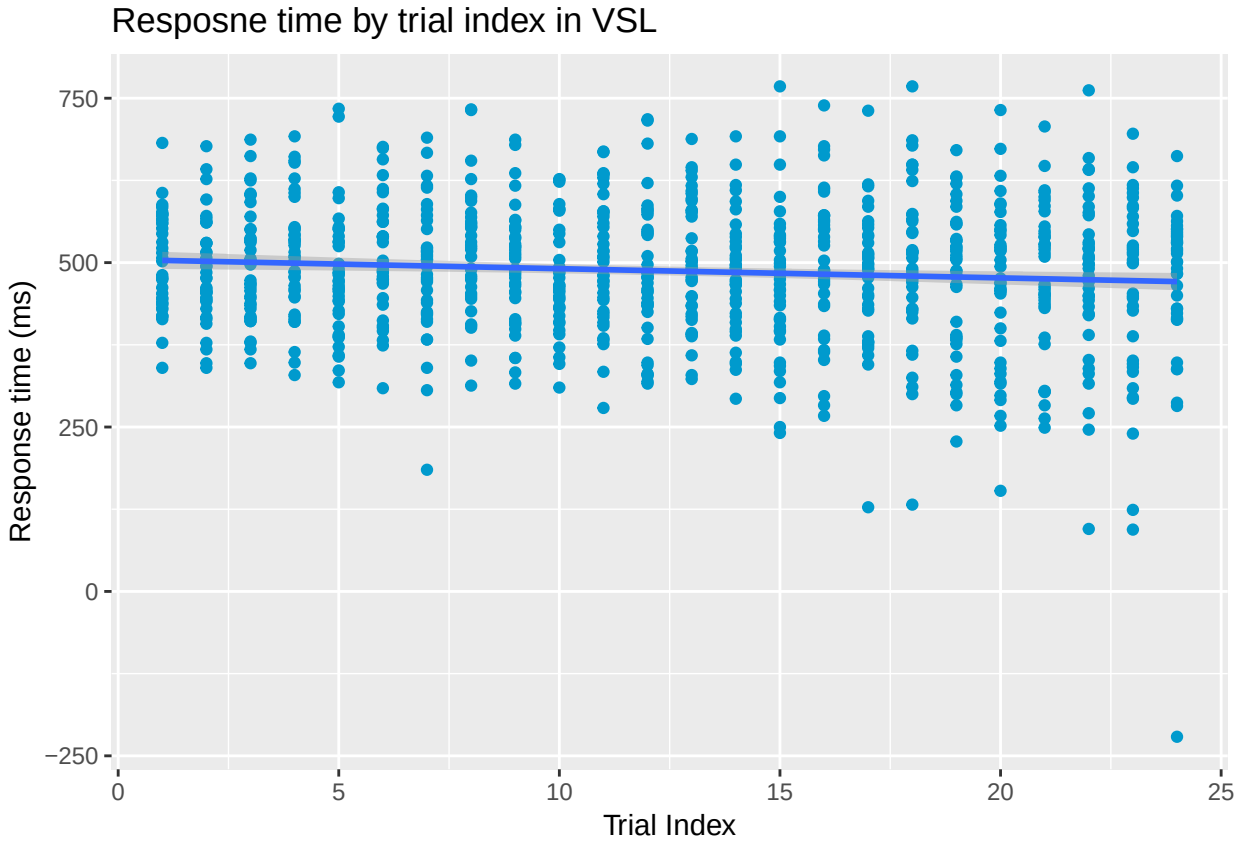
```
##
##  One Sample t-test
##
## data:  subj_table$rt_slope[subj_table$group == "DD"]
## t = -2.305, df = 15, p-value = 0.01794
## alternative hypothesis: true mean is less than 0
## 95 percent confidence interval:
##        -Inf -0.5692046
## sample estimates:
## mean of x
## -2.376937
##
##
##  One Sample t-test
##
## data:  subj_table$rt_slope[subj_table$group == "TYP"]
## t = -0.83727, df = 22, p-value = 0.2057
## alternative hypothesis: true mean is less than 0
## 95 percent confidence interval:
##       -Inf 0.5534928
## sample estimates:
##  mean of x
## -0.5266957
```

Linear regression model

```
##
## Call:
## lm(formula = rt_col ~ reindex * group_cond, data = fam_trial_vsl)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -706.63  -61.83    2.20   63.98  302.39
##
## Coefficients:
##                         Estimate Std. Error t value Pr(>|t|)
## (Intercept)             514.2307    11.0962  46.343  < 2e-16 ***
## reindex                  -2.7014     0.7829  -3.450 0.000585 ***
## group_condTYP           -15.7552    14.3685  -1.097 0.273145
## reindex:group_condTYP   2.1662     1.0117   2.141 0.032530 *
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 103.5 on 909 degrees of freedom
## Multiple R-squared:  0.01634,    Adjusted R-squared:  0.0131
## F-statistic: 5.034 on 3 and 909 DF,  p-value: 0.001827
```

Plot of VSL



Compute RT for TSL

t.test for RT Slope

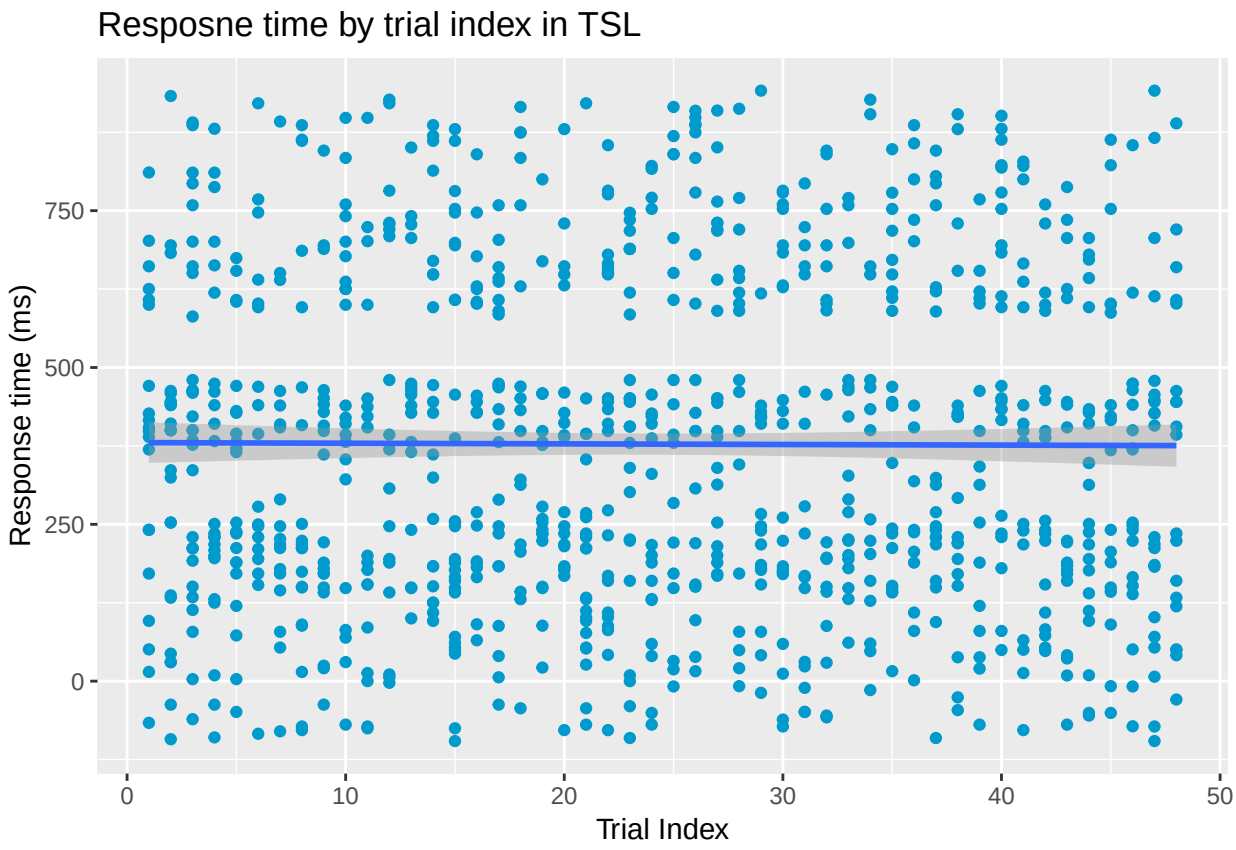
```
##
##  One Sample t-test
##
## data:  subj_table$rt_slope[subj_table$group == "DD"]
## t = -0.42265, df = 14, p-value = 0.3395
## alternative hypothesis: true mean is less than 0
## 95 percent confidence interval:
##      -Inf 2.011029
## sample estimates:
##  mean of x
```

```
## -0.6349333
##
##
##  One Sample t-test
##
## data:  subj_table$rt_slope[subj_table$group == "TYP"]
## t = 1.2279, df = 23, p-value = 0.8841
## alternative hypothesis: true mean is less than 0
## 95 percent confidence interval:
##      -Inf 5.079512
## sample estimates:
## mean of x
##  2.120208
```

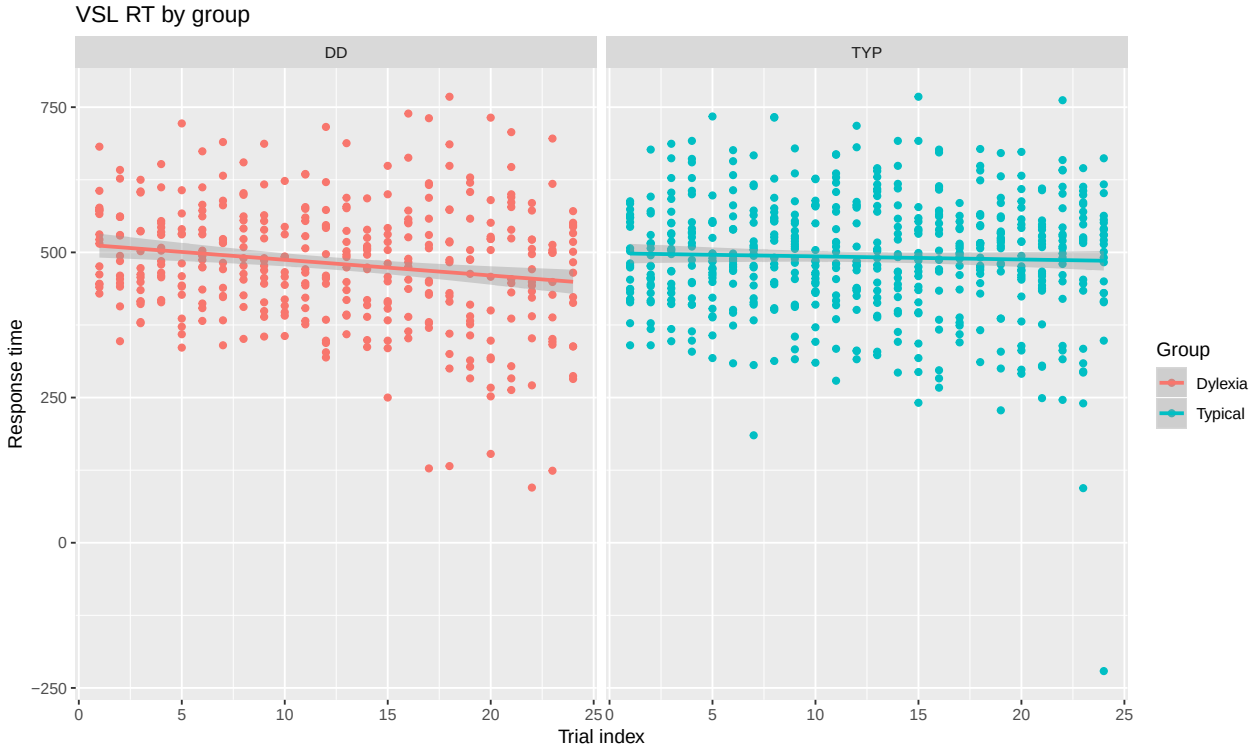
Linear regression model

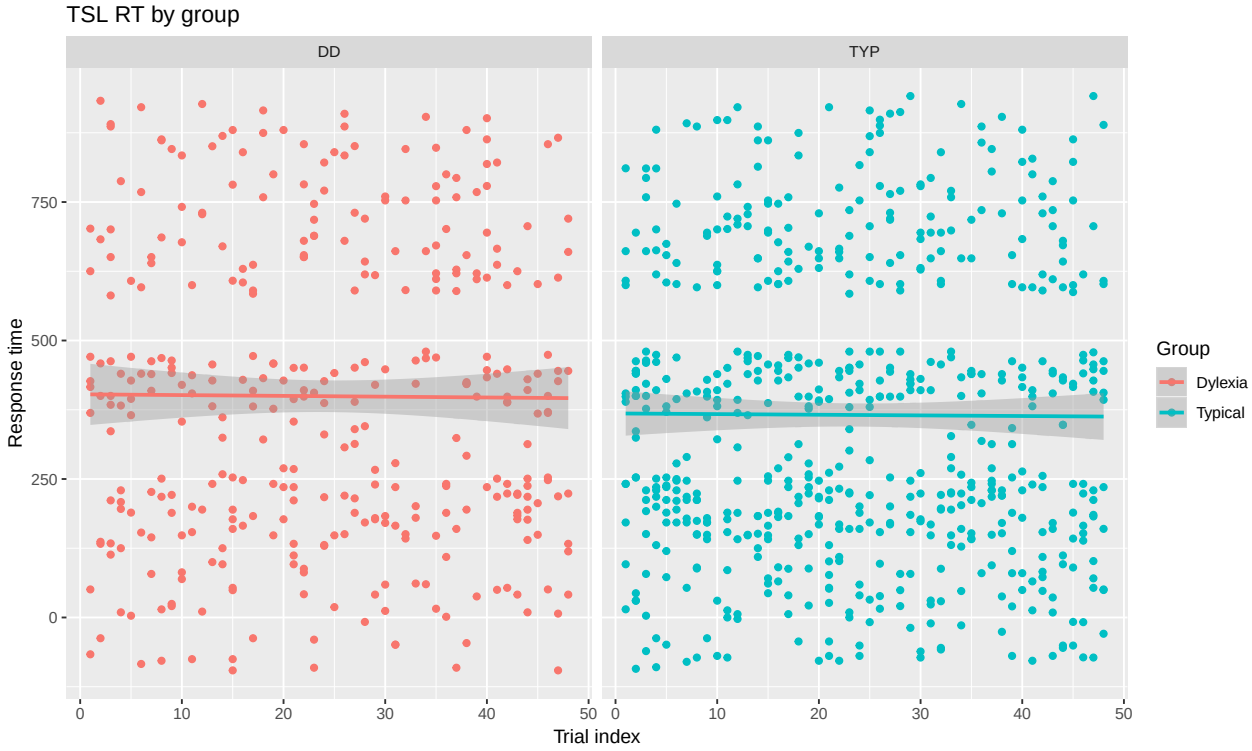
```
##
## Call:
## lm(formula = rt_col ~ reindex * group_cond, data = fam_trial_tsl)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -496.28 -208.30   -2.63  234.85  578.46
##
## Coefficients:
##                         Estimate Std. Error t value Pr(>|t|)
## (Intercept)           402.91799   28.36564  14.204   <2e-16 ***
## reindex                -0.14315    1.01007  -0.142    0.887
## group_condTYP         -34.58686   35.42633  -0.976    0.329
## reindex:group_condTYP   0.02711    1.27263   0.021    0.983
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 267.2 on 963 degrees of freedom
## Multiple R-squared:  0.003756,   Adjusted R-squared:  0.0006521
## F-statistic:  1.21 on 3 and 963 DF,  p-value: 0.3049
```

Plot of TSL


Resposne time by trial index in TSL
Response time (ms)
750
500
250
0
0
10
20
30
40
50
Trial Index

Plot by group





Compute accuracy

```
##
##  One Sample t-test
##
## data:  DD_acc_vsl
## t = 4.0241, df = 15, p-value = 0.0005519
## alternative hypothesis: true mean is greater than 0.5
## 95 percent confidence interval:
##  0.6168584       Inf
## sample estimates:
## mean of x
## 0.7070625
```

```
##
##  One Sample t-test
##
## data:  DD_acc_tsl
## t = 2.2116, df = 14, p-value = 0.02206
## alternative hypothesis: true mean is greater than 0.5
## 95 percent confidence interval:
##  0.5105882       Inf
## sample estimates:
## mean of x
##     0.552
```

```
##
##  One Sample t-test
##
## data:  TYP_acc_vsl
## t = 3.5474, df = 22, p-value = 0.0009032
## alternative hypothesis: true mean is greater than 0.5
## 95 percent confidence interval:
##  0.5883823       Inf
## sample estimates:
## mean of x
## 0.6713043
```

```
##
##  One Sample t-test
##
## data:  TYP_acc_tsl
## t = 6.2175, df = 23, p-value = 1.208e-06
## alternative hypothesis: true mean is greater than 0.5
## 95 percent confidence interval:
##  0.616952      Inf
## sample estimates:
## mean of x
## 0.6614583
```

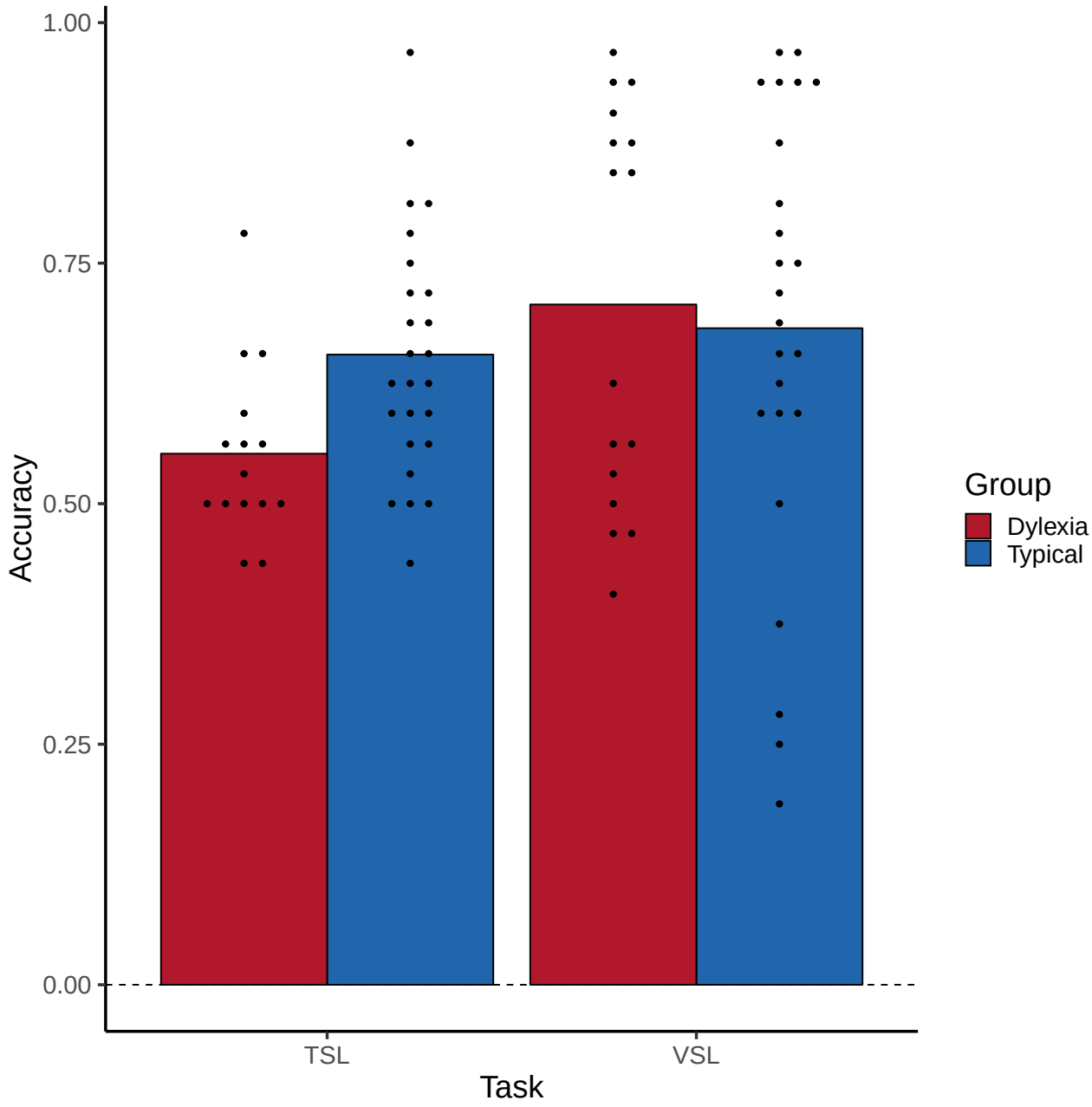
A t-test to compare between Dylexia and Typical group

In tsl

```
##
##  Two Sample t-test
##
## data:  DD_acc_tsl and TYP_acc_tsl
## t = -2.8948, df = 37, p-value = 0.006331
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.18607415 -0.03284251
## sample estimates:
## mean of x mean of y
## 0.5520000 0.6614583
```

In vsl

```
##
##  Two Sample t-test
##
## data:  DD_acc_vsl and TYP_acc_vsl
## t = 0.49588, df = 37, p-value = 0.6229
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.1103510  0.1818673
## sample estimates:
## mean of x mean of y
## 0.7070625 0.6713043
```


1.00
0.75
0.50
0.25
0.00
Accuracy
TSL
VSL
Task
Group
Dylexia
Typical