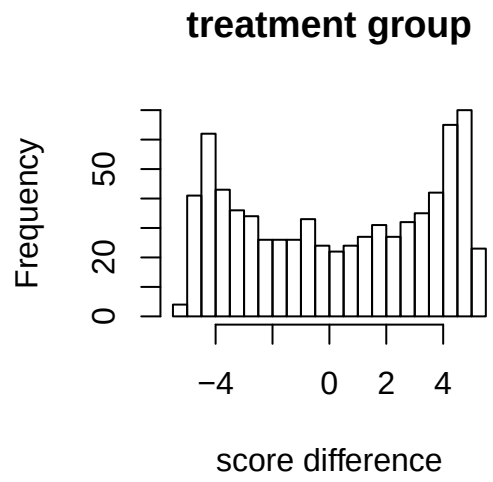
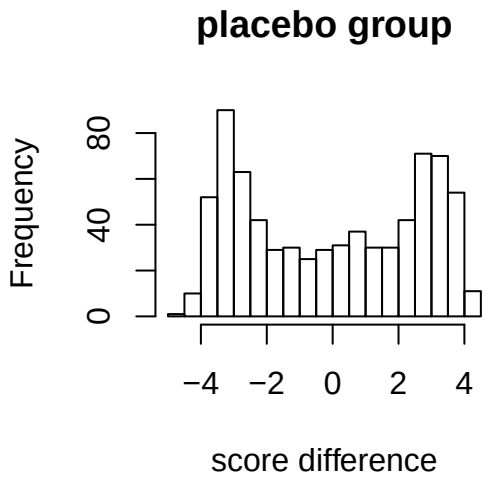
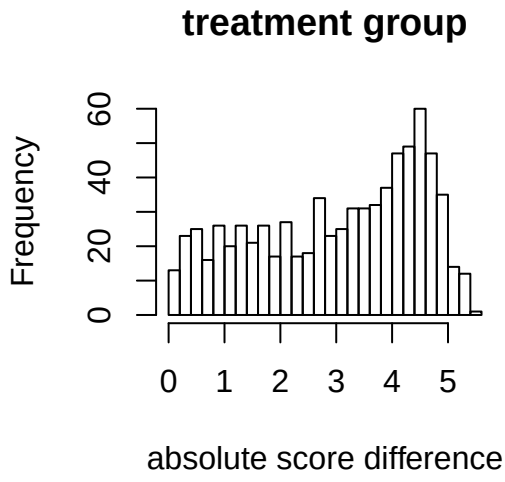
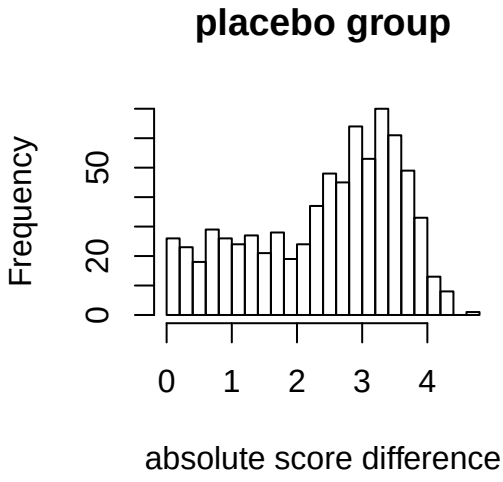
measurement of performance (integral)

2020-01-29









The mean value and the mean absolute values of the s_1 are

```
round(mean(rules1),3)
```

```
## [1] 0.323
```

```
round(mean(abs(rules1)),3)
```

```
## [1] 3.024
```

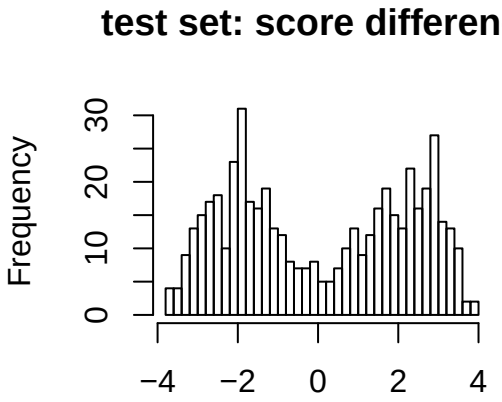
The mean value and the mean absolute values of the s_2 are

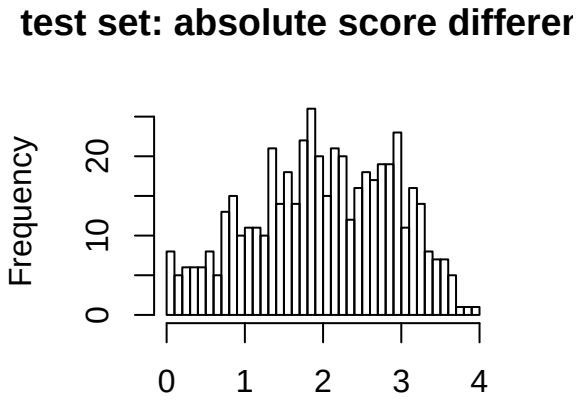
```
round(mean(rules2),3)
```

```
## [1] -0.036
```

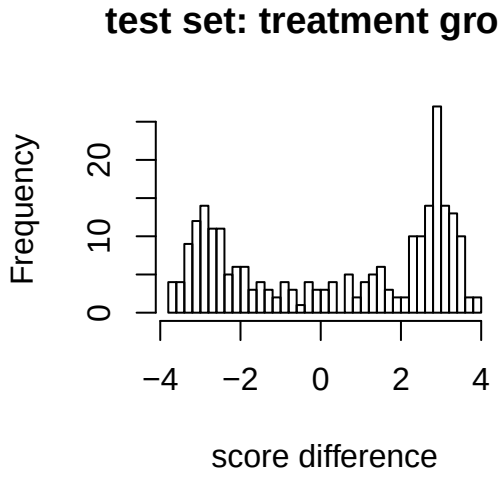
```
round(mean(abs(rules2)),3)
```

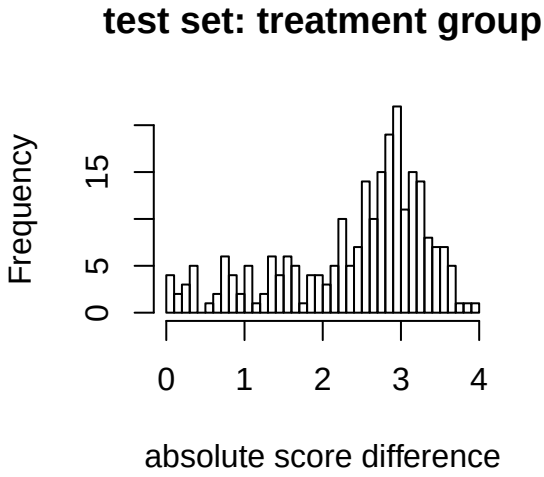
```
## [1] 2.423
```

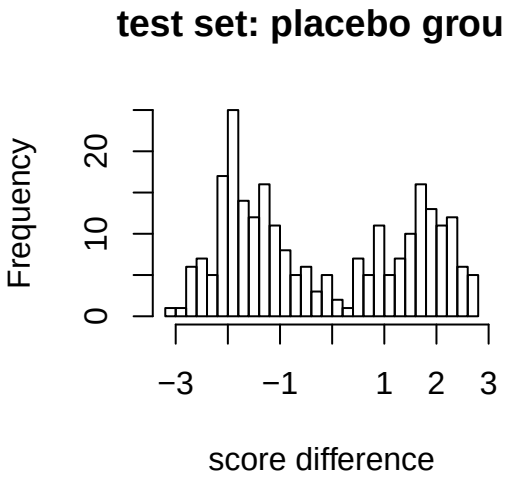


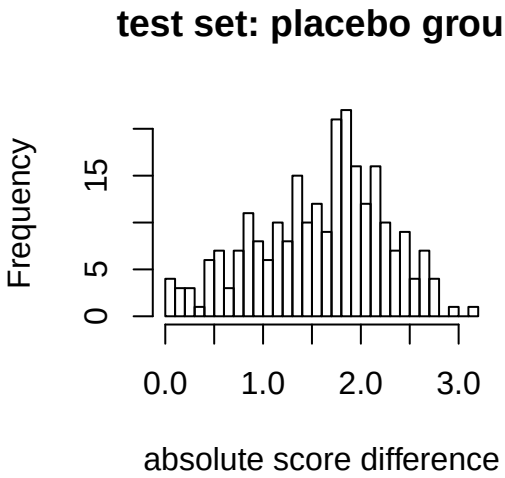


The score differences in the testing dataset with the true assignment:









If we use the score difference to decide the assignment, the AUC is

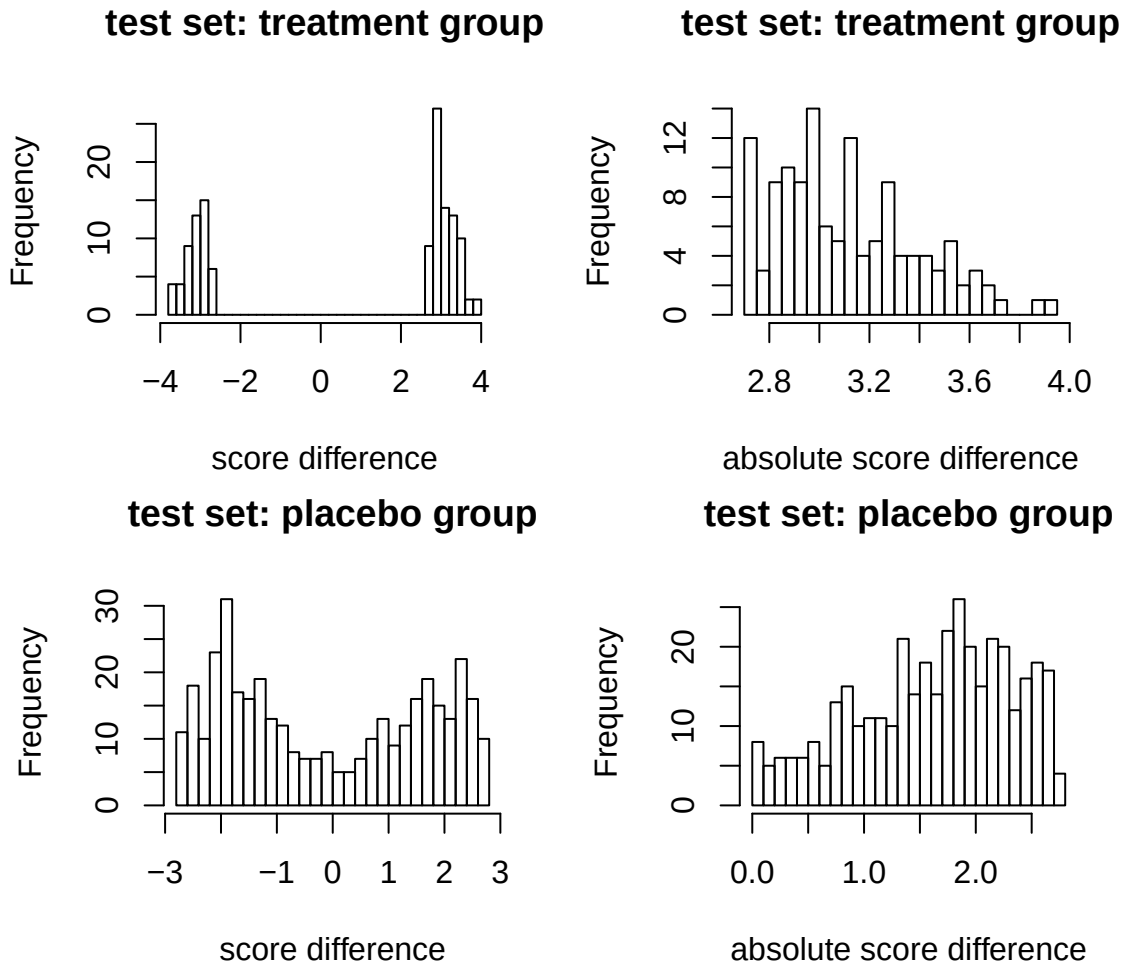
```
##
## Call:
## roc.default(response = trt_est, predictor = trt_test)
##
## Data: trt_test in 246 controls (trt_est 1) < 254 cases (trt_est 2).
```

```
## Area under the curve: 0.5579
```

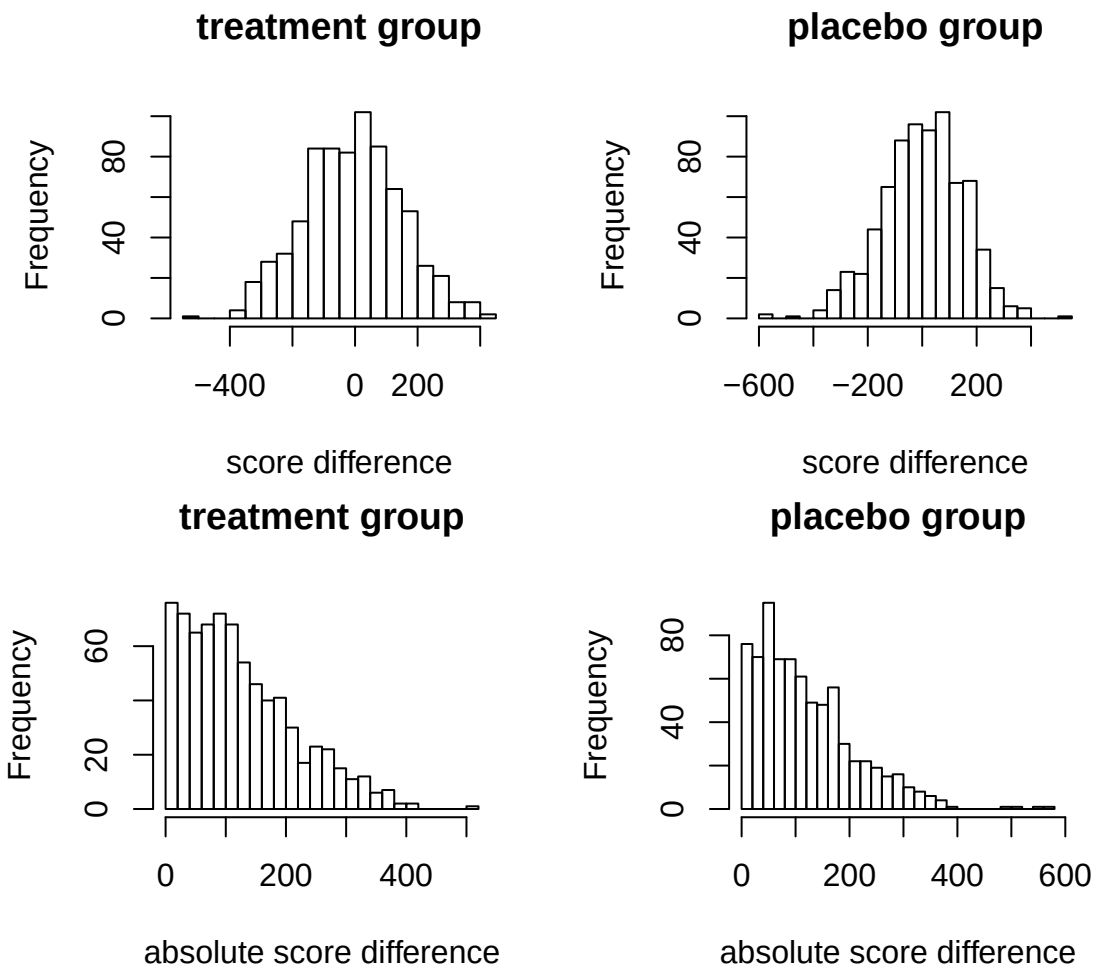
If we use the absolute score difference to decide the assignment, the AUC is

```
##
## Call:
## roc.default(response = trt_est, predictor = trt_test)
##
## Data: trt_test in 128 controls (trt_est 1) < 372 cases (trt_est 2).
## Area under the curve: 0.8086
```

The score differences in the testing dataset with the estimated assignment:



2



The mean value and the mean absolute values of the s_1 are

```
round(mean(rules1),3)
```

```
## [1] -6.408
```

```
round(mean(abs(rules1)),3)
```

```
## [1] 124.551
```

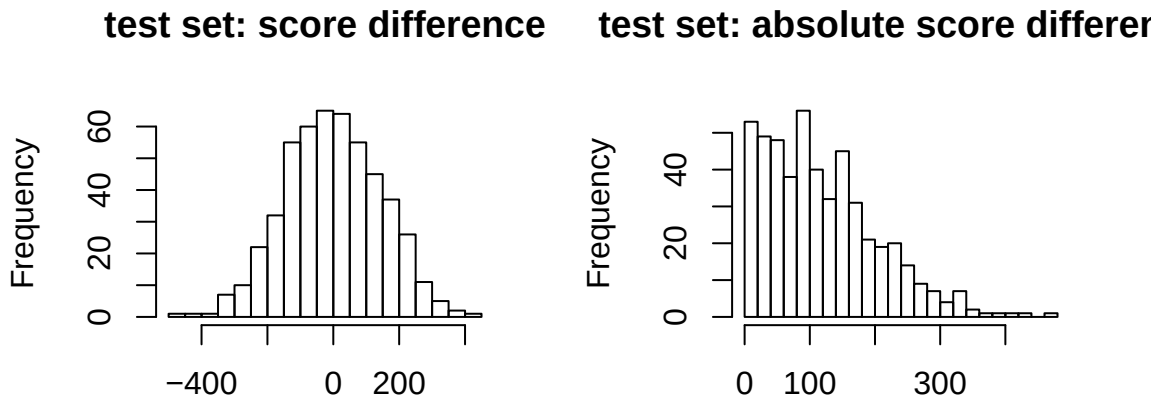
The mean value and the mean absolute values of the s_2 are

```
round(mean(rules2),3)
```

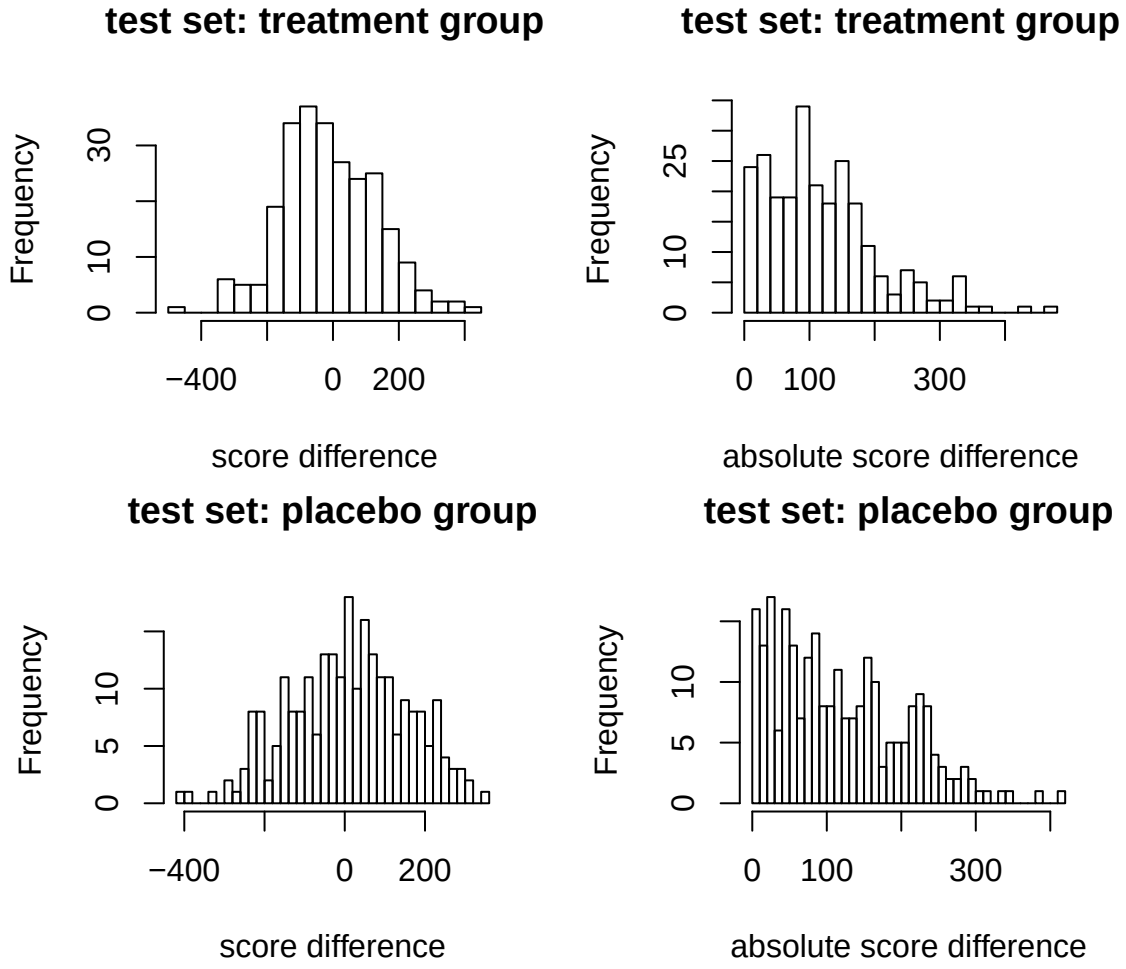
```
## [1] 3.279
```

```
round(mean(abs(rules2)),3)
```

```
## [1] 118.703
```



The score differences in the testing dataset with the true assignment:



If we use the score difference to decide the assignment, the AUC is

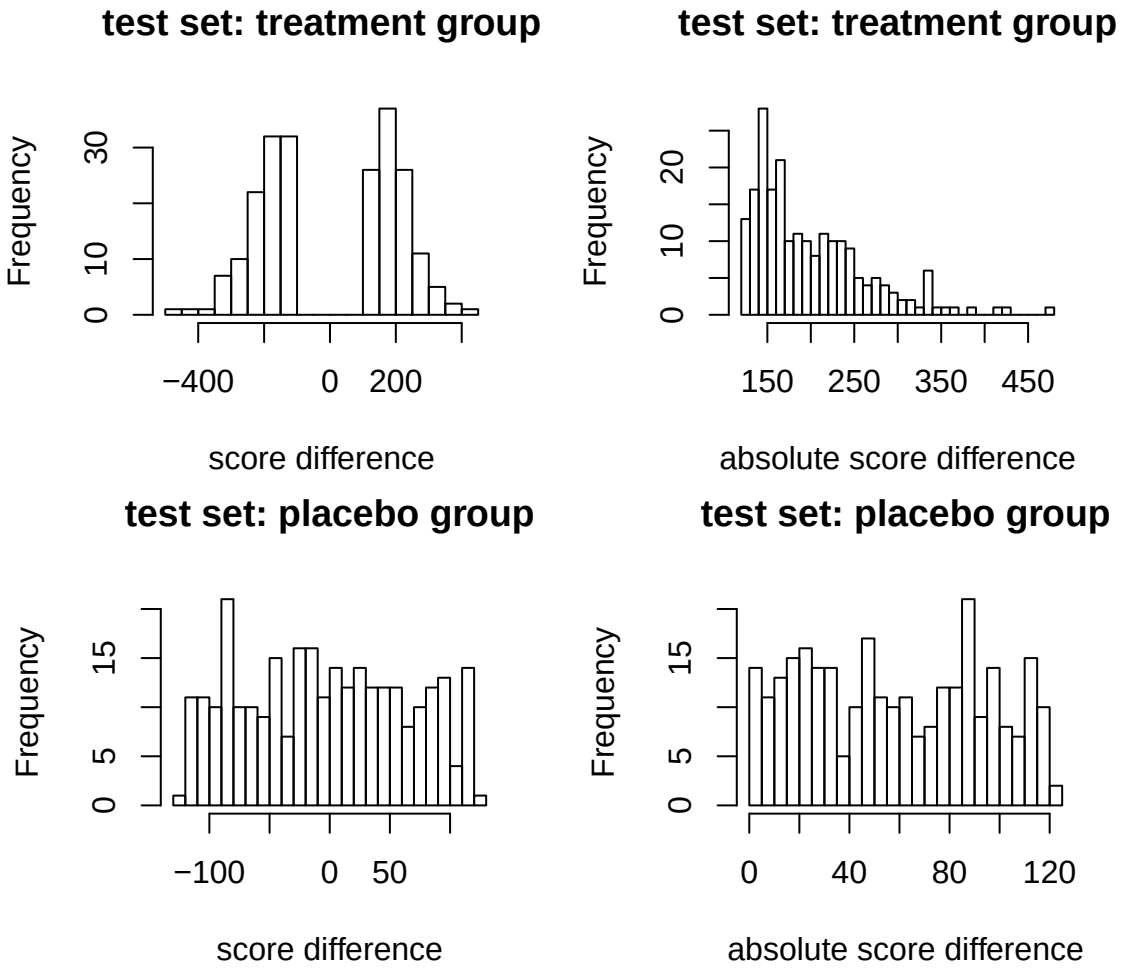
```
##
## Call:
## roc.default(response = trt_est, predictor = trt_test)
##
## Data: trt_test in 252 controls (trt_est 1) < 248 cases (trt_est 2).
```

```
## Area under the curve: 0.556
```

If we use the absolute score difference to decide the assignment, the AUC is

```
##
## Call:
## roc.default(response = trt_est, predictor = trt_test)
##
## Data: trt_test in 214 controls (trt_est 1) < 286 cases (trt_est 2).
## Area under the curve: 0.5
```

The score differences in the testing dataset with the estimated assignment:



Discovering linear biosignatures for treatment response based on maximizing Kullback-Leibler Divergence in linear mixed-effect models