SPAN MRI Analytics Pilot Data Report: Lesion Volume Evaluation in Iowa Data

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Full Table of Lesion Volumes

```
print(df[,c("subject", "auto", "manual", "manual_personA", "manual_personB")])
```

```
##    subject      auto manual manual_personA manual_personB
## 1   VH1919 20.979003 20.010           20.1          19.92
## 2   QC3809  9.865126 13.440           15.5          11.38
## 3   KX0579 28.525503 23.080           21.4          24.76
## 4   FR4979 15.568877 12.335           13.4          11.27
## 5   AM5399 19.787627 19.255           17.8          20.71
## 6   AM5398  0.000000  0.000            0.0           0.00
## 7   FR4960  0.000000  1.625            2.0           1.25
## 8   KX0560 15.045752 17.480           16.1          18.86
## 9   QC3810  1.667250  1.160            1.2           1.12
## 10  VH1900  2.409750  7.595            7.6           7.59
```

Manual Volume Mean and Standard Deviation

```
mean(df$manual)
```

```
## [1] 11.598
```

```
sd(df$manual)
```

```
## [1] 8.555128
```

Automated Volume Mean and Standard Deviation

```
mean(df$auto)
```

```
## [1] 11.38489
```

```
sd(df$auto)
```

```
## [1] 10.13184
```

Comparing the two manual segmentations

Correlation

```
cor(df$manual_personA, df$manual_personB)
```

```
## [1] 0.9693932
```

```
cor.test(df$manual_personA, df$manual_personB)
```

```
##
##  Pearson's product-moment correlation
##
## data:  df$manual_personA and df$manual_personB
## t = 11.168, df = 8, p-value = 3.7e-06
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  0.8719917 0.9929606
## sample estimates:
##       cor
## 0.9693932
```

Root-mean-square error

```
mean((df$manual_personA - df$manual_personB)**2)**(0.5)
```

```
## [1] 2.22459
```

Comparing automated and manual segmentations

Correlation

```
cor(df$manual, df$auto)
```

```
## [1] 0.9570602
```

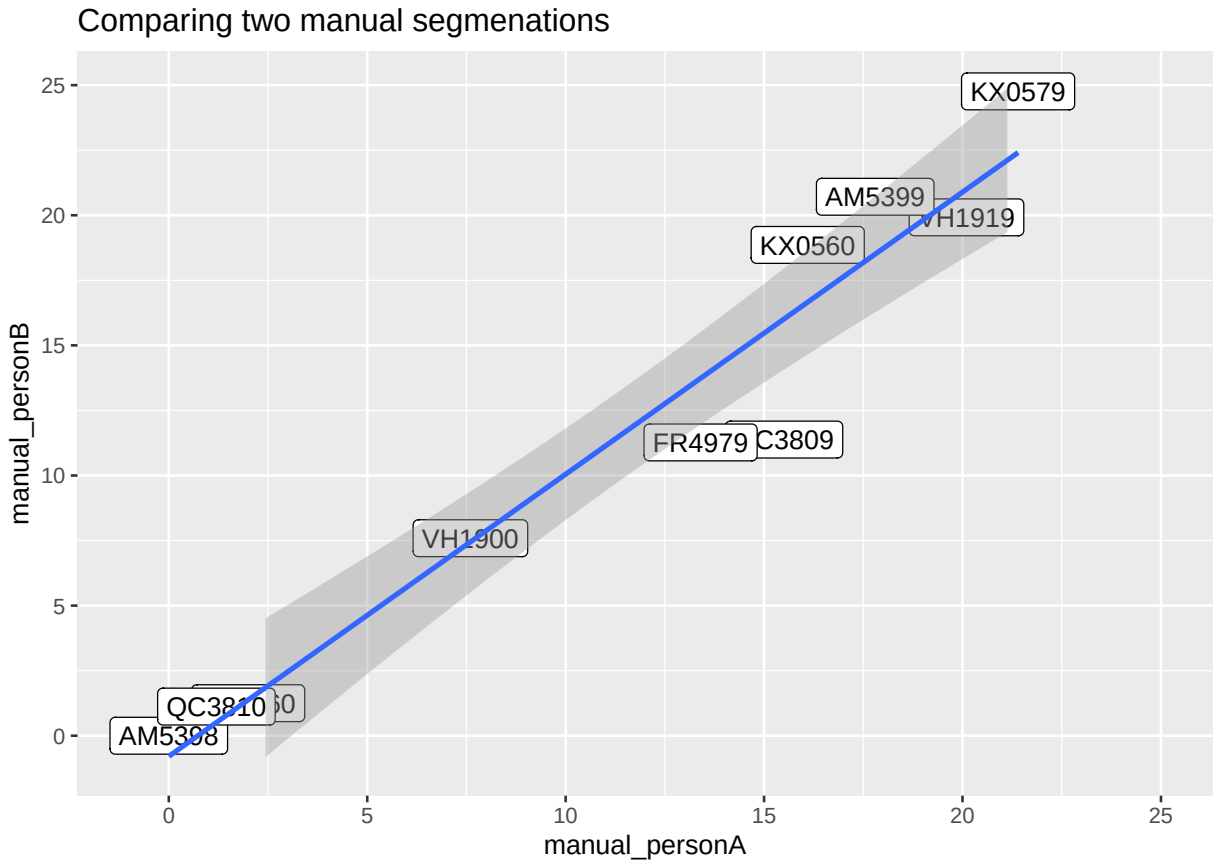
```
cor.test(df$manual, df$auto)
```

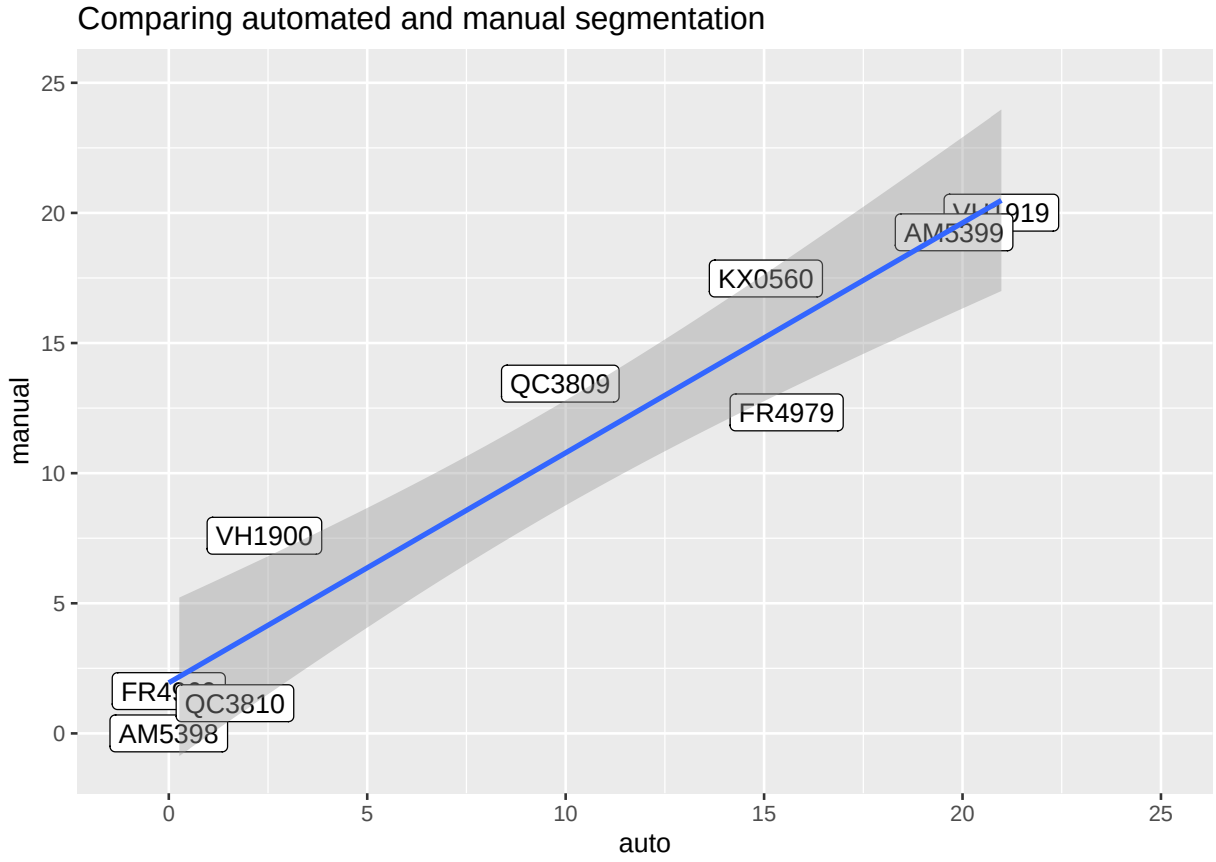
```
##
##  Pearson's product-moment correlation
##
## data:  df$manual and df$auto
## t = 9.338, df = 8, p-value = 1.412e-05
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  0.8239203 0.9900762
## sample estimates:
##       cor
## 0.9570602
```

Root-mean-square error

```
mean((df$manual - df$auto)**2)**(0.5)
```

```
## [1] 2.997068
```


Comparing two manual segmenations
manual_personB
manual_personA
KX0579
AM5399
VH1919
KX0560
FR4979
VH1900
QC3810
AM5398
0
5
10
15
20
25


Comparing automated and manual segmentation
manual
auto
AM5399
KX0560
QC3809
FR4979
VH1900
QC3810
AM5398
0
5
10
15
20
25