---

title: “DEEPPD FD-mean” output: pdf_document: default html_document: default date: “2024-06-19”

```
# set the wd to where tsv file is located
setwd("/projects/jbyambadorj/DEEP_study/data/processed/DEEPPD/mriqc")

# set up
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.2     v readr     2.1.4
## v forcats   1.0.0     v stringr   1.5.0
## v ggplot2   3.5.1     v tibble    3.2.1
## v lubridate 1.9.2     v tidyr     1.3.0
## v purrr     1.0.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(ggplot2)
library(dplyr)
library(stringr)
library(scales)
```

```
##
## Attaching package: 'scales'
##
## The following object is masked from 'package:purrr':
##
##     discard
##
## The following object is masked from 'package:readr':
##
##     col_factor
```

```
data <- read.table('group_bold.tsv', header = TRUE, sep="\t")
data.frame(data)
data
```

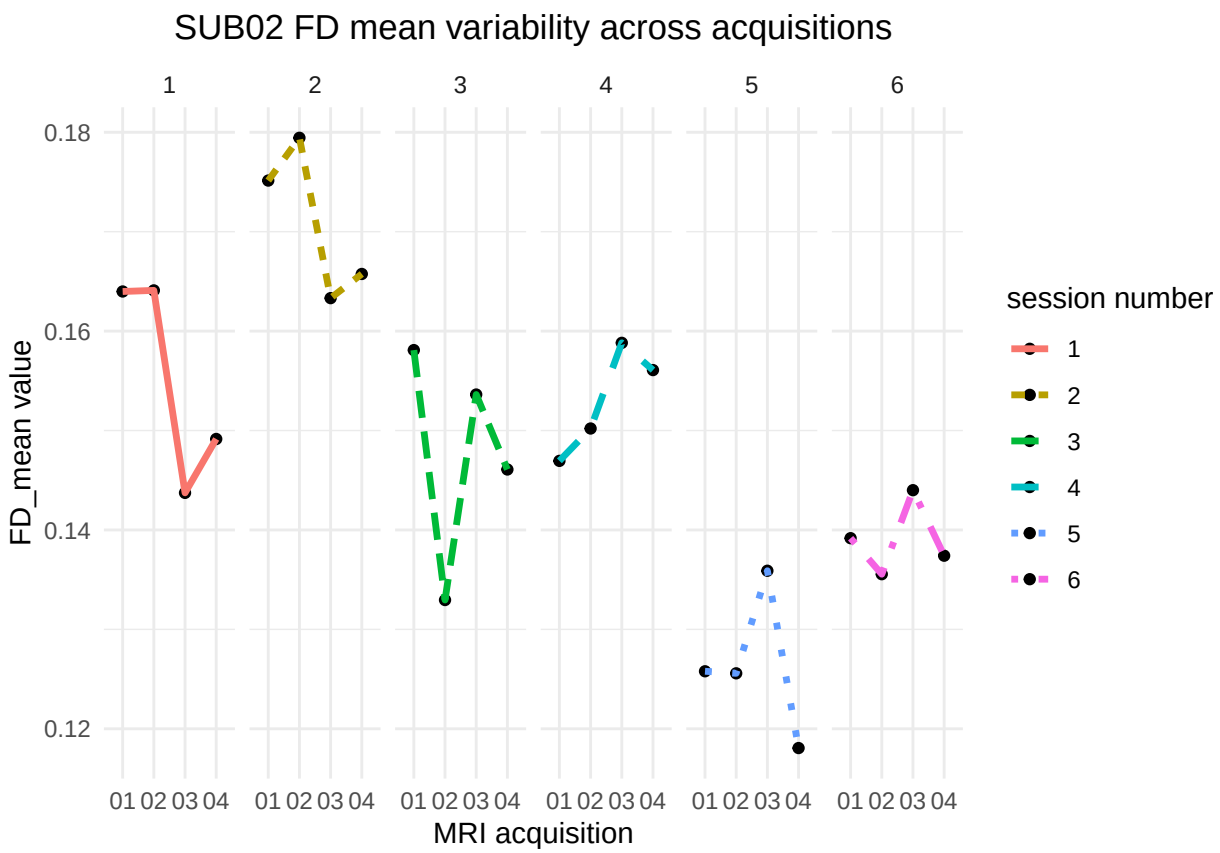
```
# select fd_mean column only

fd_mean_data = select(data, bids_name, fd_mean)

bids_name = pull(fd_mean_data, bids_name)
score = pull(fd_mean_data, fd_mean)


# create new column ses_number
myvar = c()

for (sub in 2:8) {
  for (j in 1:6) {
    for (i in 1:4)
    {
      myvar = c(myvar, c(j))
```

```
    }
  }
}

# append extra ses06 to sub04 since it has 5 runs.

myvar = append(myvar, 6, 72)
fd_mean_data$ses_number = myvar

fd_mean_data
```

```
# create new column id which contains run_number in the df

temp = c()

for (sub_num in 2:8) {
  for (ses_num in 1:6) {
    for (run_num in 1:4) {
      temp = append(temp, paste("0", run_num,
                                sep=""))
    }
  }
}

# correct extra run05 in sub04-ses06
temp = append(temp, "05", 72)
fd_mean_data$run_id = temp

# change run05 of sub05/ses04 (entry 89) into run04
# since run 03 is missing
```

Script for generating fd_mean vs acq_session plot for sub-CMH-0000002

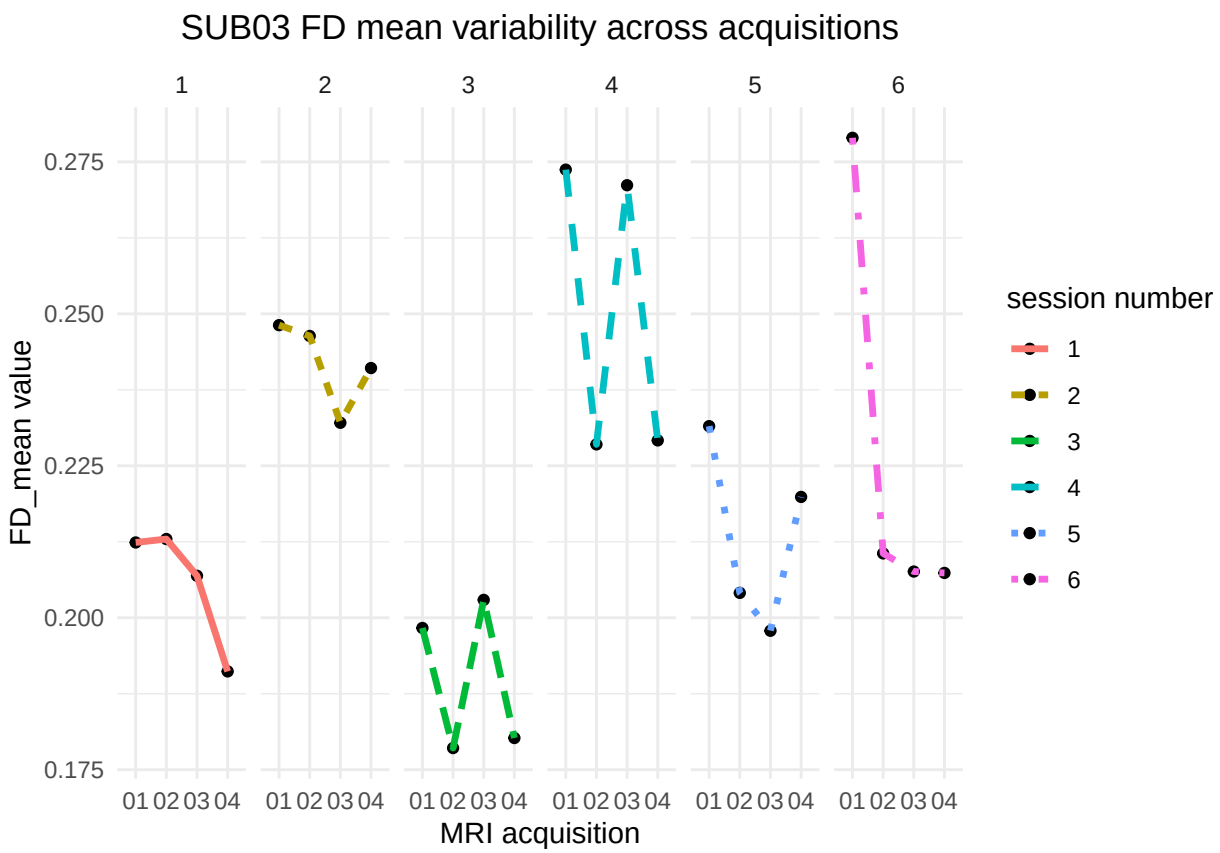
```
# The following reads off only from sub 02 data.

slice(fd_mean_data, 1:24) %>%
  group_by(ses_number) %>%
  ggplot() +
  geom_point(aes(x = run_id, y = fd_mean, fill = as.factor(ses_number))) +
  geom_line(aes(x = run_id, y = fd_mean, color = as.factor(ses_number),
                group = ses_number, linetype = as.factor(ses_number)),
            position = position_dodge(width = 0), lwd = 1.2) +
  theme_minimal() +
  theme(plot.title = element_text(hjust = 0.5)) +
  labs(
    x = "MRI acquisition",
    y = "FD_mean value",
    title = "SUB02 FD mean variability across acquisitions",
    color = "session number",
    fill = "session number",
    linetype = "session number") +

  facet_wrap(facets = "ses_number", nrow = 1, scale = "free_x")
```



SUB-CMH-0000003 Plot

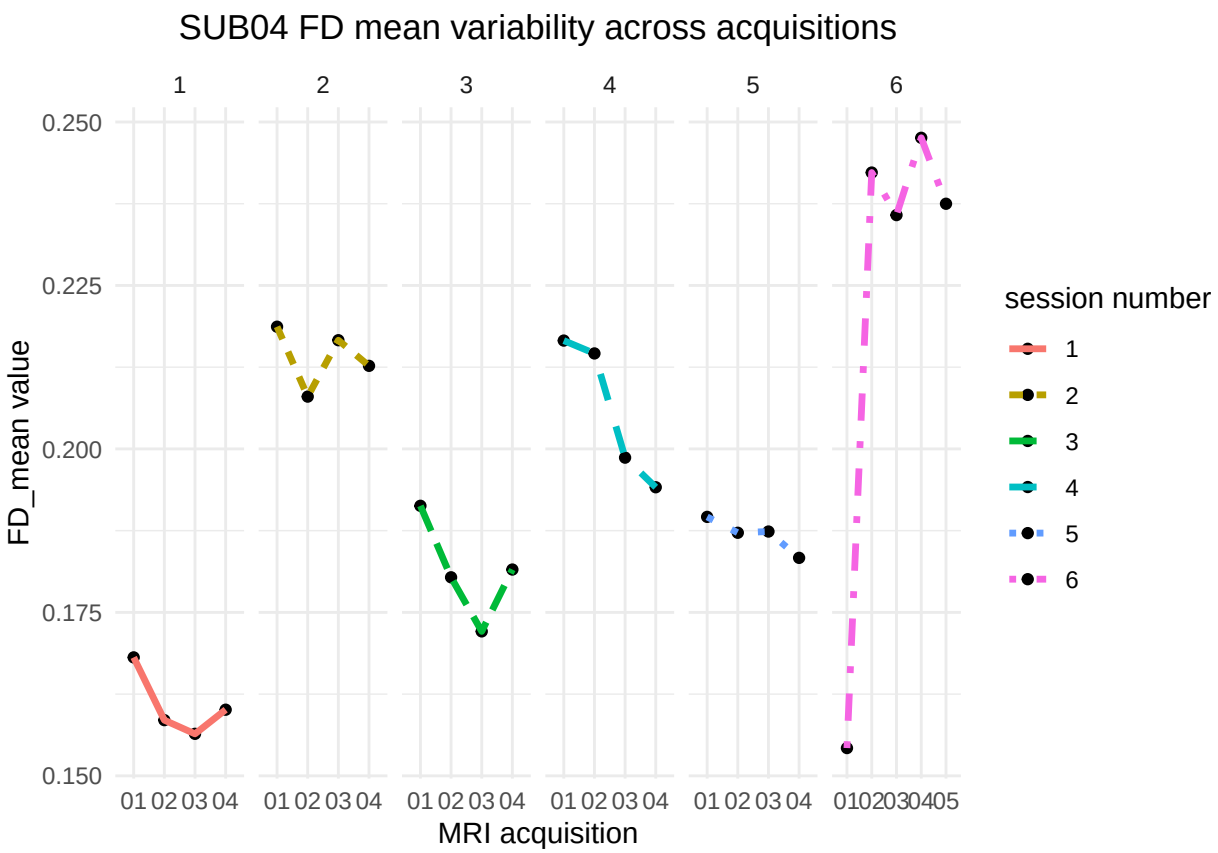
SUB-03 is a patient

```
slice(fd_mean_data, 25:48) %>%
  group_by(ses_number) %>%
  ggplot() +
  geom_point(aes(x = run_id, y = fd_mean, fill = as.factor(ses_number))) +
  geom_line(aes(x = run_id, y = fd_mean, color = as.factor(ses_number),
                group = ses_number, linetype = as.factor(ses_number)),
            position = position_dodge(width = 0), lwd = 1.2) +
  theme_minimal() +
  theme(plot.title = element_text(hjust = 0.5)) +
  labs(
    x = "MRI acquisition",
    y = "FD_mean value",
    title = "SUB03 FD mean variability across acquisitions",
    color = "session number",
    fill = "session number",
    linetype = "session number") +

  facet_wrap(facets = "ses_number", nrow = 1, scale = "free_x")
```



SUBJECT 04 FD_MEAN PLOT ## SUB04 is a patient

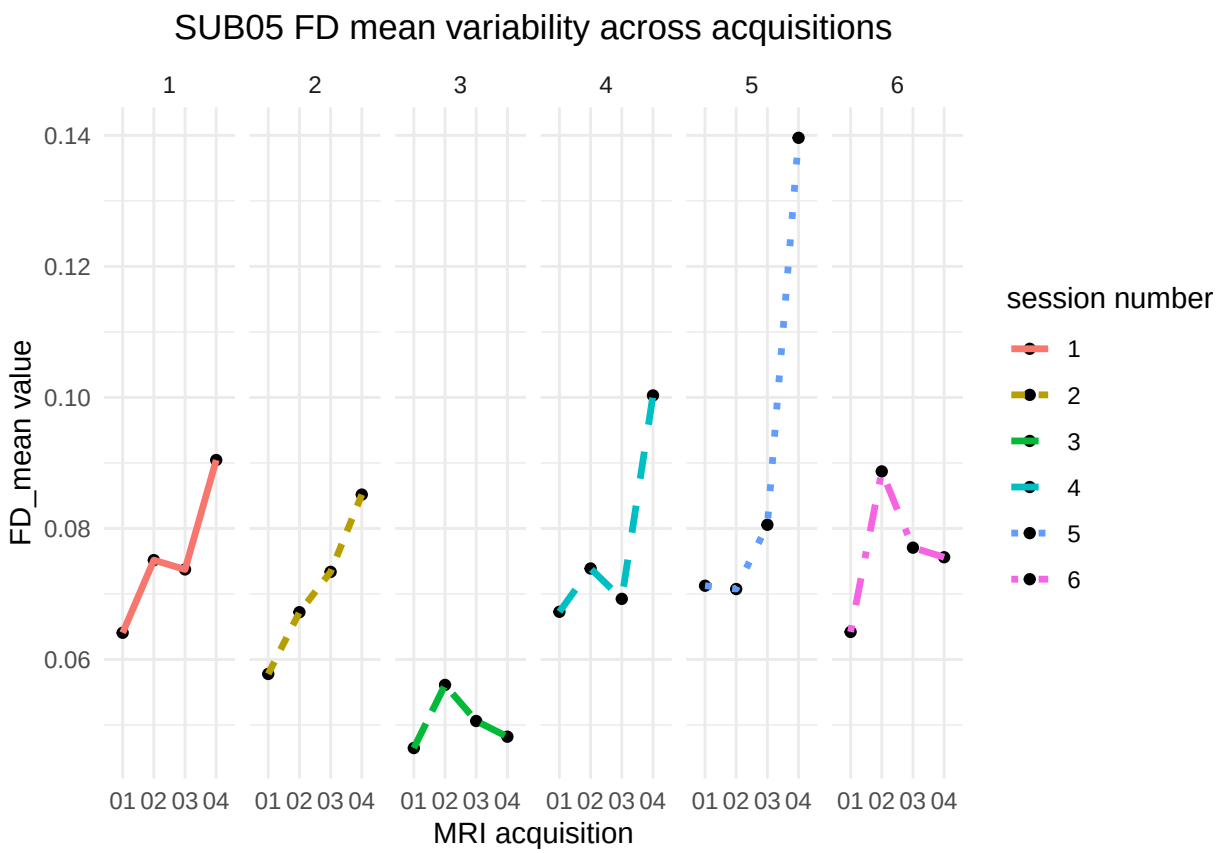
```
slice(fd_mean_data, 49:73) %>%
  group_by(ses_number) %>%
  ggplot() +
  geom_point(aes(x = run_id, y = fd_mean, fill = as.factor(ses_number))) +
  geom_line(aes(x = run_id, y = fd_mean, color = as.factor(ses_number),
                group = ses_number, linetype = as.factor(ses_number)),
            position = position_dodge(width = 0), lwd = 1.2) +
  theme_minimal() +
  theme(plot.title = element_text(hjust = 0.5)) +
  labs(
    x = "MRI acquisition",
    y = "FD_mean value",
    title = "SUB04 FD mean variability across acquisitions",
    color = "session number",
    fill = "session number",
    linetype = "session number") +

  facet_wrap(facets = "ses_number", nrow = 1, scale = "free_x")
```



SUB-CMH000005 FD_MEAN PLOT

SUB-05 is a Patient

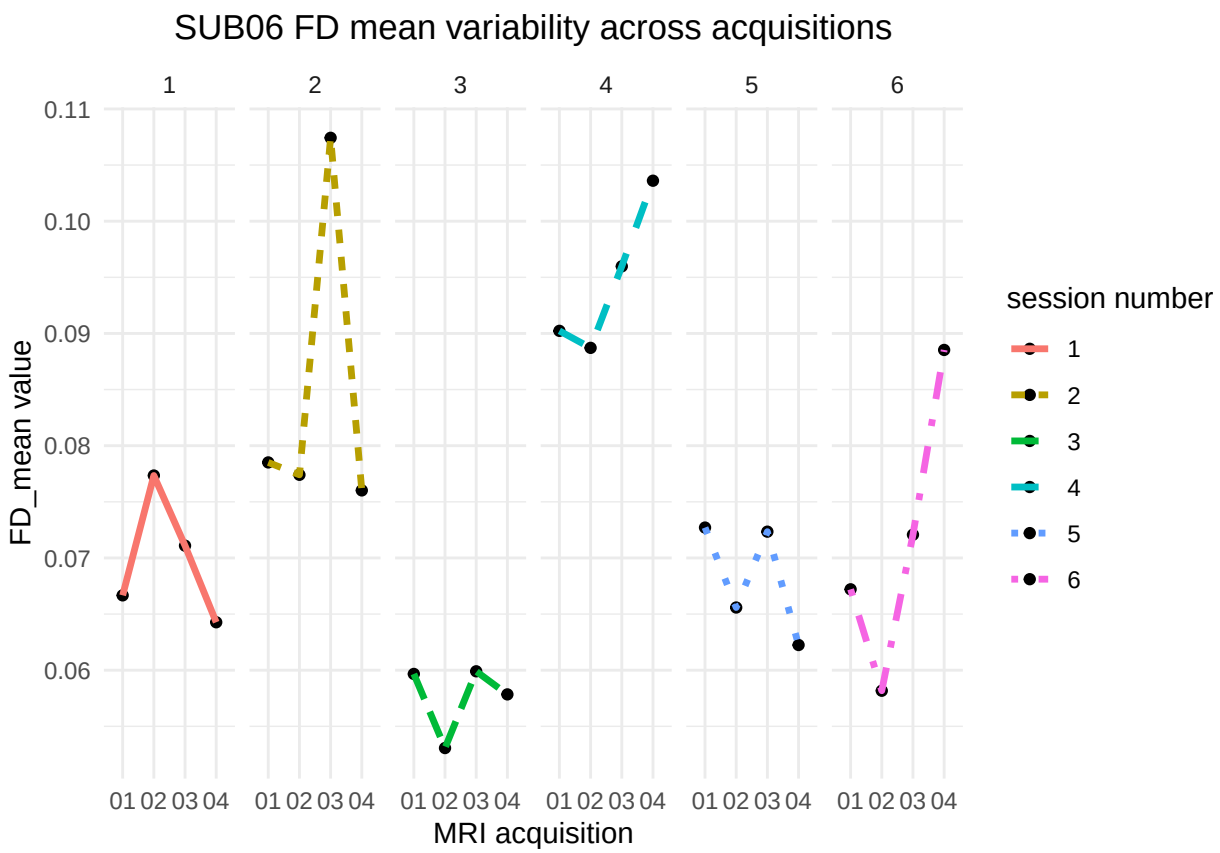
```
slice(fd_mean_data, 74:97) %>%
  group_by(ses_number) %>%
  ggplot() +
  geom_point(aes(x = run_id, y = fd_mean, fill = as.factor(ses_number))) +
  geom_line(aes(x = run_id, y = fd_mean, color = as.factor(ses_number),
                group = ses_number, linetype = as.factor(ses_number)),
            position = position_dodge(width = 0), lwd = 1.2) +
  theme_minimal() +
  theme(plot.title = element_text(hjust = 0.5)) +
  labs(
    x = "MRI acquisition",
    y = "FD_mean value",
    title = "SUB05 FD mean variability across acquisitions",
    color = "session number",
    fill = "session number",
    linetype = "session number") +

  facet_wrap(facets = "ses_number", nrow = 1, scale = "free_x")
```



SUB-CMH000006 FD_MEAN PLOT

Note: Not sure if SUB06 is a patient or control

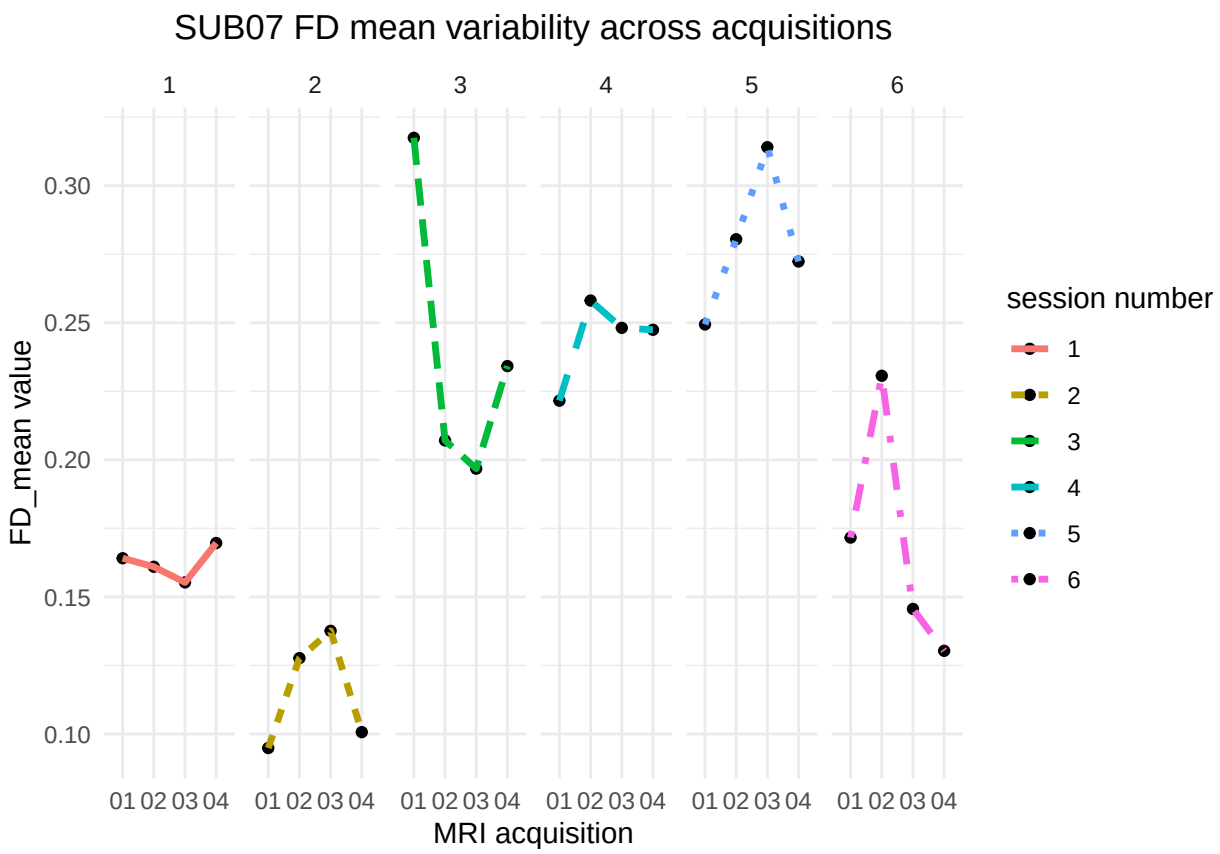
```
slice(fd_mean_data, 98:121) %>%
  group_by(ses_number) %>%
  ggplot() +
  geom_point(aes(x = run_id, y = fd_mean, fill = as.factor(ses_number))) +
  geom_line(aes(x = run_id, y = fd_mean, color = as.factor(ses_number),
                group = ses_number, linetype = as.factor(ses_number)),
            position = position_dodge(width = 0), lwd = 1.2) +
  theme_minimal() +
  theme(plot.title = element_text(hjust = 0.5)) +
  labs(
    x = "MRI acquisition",
    y = "FD_mean value",
    title = "SUB06 FD mean variability across acquisitions",
    color = "session number",
    fill = "session number",
    linetype = "session number") +

  facet_wrap(facets = "ses_number", nrow = 1, scale = "free_x")
```



CMH-SUB000007 FD_MEAN PLOT

CMH-SUB07 is a CONTROL

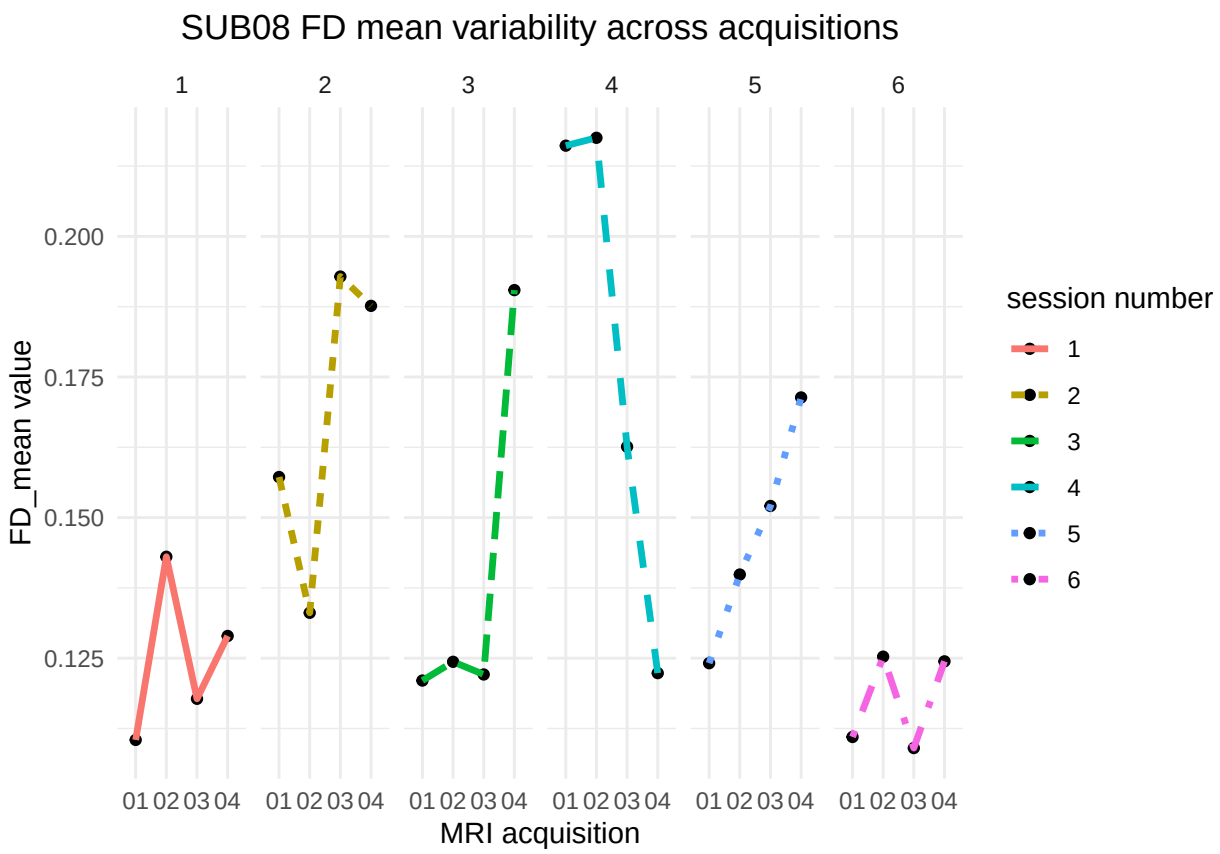
```
slice(fd_mean_data, 122:145) %>%
  group_by(ses_number) %>%
  ggplot() +
  geom_point(aes(x = run_id, y = fd_mean, fill = as.factor(ses_number))) +
  geom_line(aes(x = run_id, y = fd_mean, color = as.factor(ses_number),
                group = ses_number, linetype = as.factor(ses_number)),
            position = position_dodge(width = 0), lwd = 1.2) +
  theme_minimal() +
  theme(plot.title = element_text(hjust = 0.5)) +
  labs(
    x = "MRI acquisition",
    y = "FD_mean value",
    title = "SUB07 FD mean variability across acquisitions",
    color = "session number",
    fill = "session number",
    linetype = "session number") +

  facet_wrap(facets = "ses_number", nrow = 1, scale = "free_x")
```



CMH-SUB0000008 FD_MEAN PLOT

Not sure if SUB-08 is a patient or control.

```
slice(fd_mean_data, 146:169) %>%
  group_by(ses_number) %>%
  ggplot() +
  geom_point(aes(x = run_id, y = fd_mean, fill = as.factor(ses_number))) +
  geom_line(aes(x = run_id, y = fd_mean, color = as.factor(ses_number),
                group = ses_number, linetype = as.factor(ses_number)),
            position = position_dodge(width = 0), lwd = 1.2) +
  theme_minimal() +
  theme(plot.title = element_text(hjust = 0.5)) +
  labs(
    x = "MRI acquisition",
    y = "FD_mean value",
    title = "SUB08 FD mean variability across acquisitions",
    color = "session number",
    fill = "session number",
    linetype = "session number") +

  facet_wrap(facets = "ses_number", nrow = 1, scale = "free_x")
```


SUB08 FD mean variability across acquisitions
1
2
3
4
5
6
0.200
0.175
0.150
0.125
FD_mean value
01 02 03 04
MRI acquisition
session number
1
2
3
4
5
6