

Descriptive Stats

```
xls_path <- '../..data/ESSG extraction June 2022_2nd report 5Y - ONLY DPS.xlsx'
```

Filters

```
discarded_patients <- readLines('five_years/discarded_patients')

clinical_data %<>%
  .[, followup_2y :=
    !is.na(`2 YEAR VISIT - Date of visit`) |
    !is.na(`3 YEAR VISIT - Date of visit`)] %>%
  .[, followup_5y :=
    !is.na(`5 YEAR VISIT - Date of visit`) |
    !is.na(`6 YEAR VISIT - Date of visit`)]

# clinical_data %<>%
#   .[Site != 'ANK Op'] %>%
#   .[`Vital status` == 'Alive'] %>%
#   .[!(`Code of the patient` %in% discarded_patients)] %>%
#   .[`st1. Date of Stage` %>% as.Date() < as.Date('2015-3-15')]

total <- clinical_data[, `Code of the patient` %>% uniqueN]
patients_2y <- clinical_data[followup_2y==TRUE, `Code of the patient` %>% uniqueN]
patients_5y <- clinical_data[followup_5y==TRUE, `Code of the patient` %>% uniqueN]
```

- Number of Patients: 585
- Number of patients with visit in 2 years: 434
- Number of patients with visit in 5 years: 224

```
clinical_data %<>%
  .[followup_2y==TRUE] %>%
  .[`st1. Date of Stage` %>% as.Date() < as.Date('2016-6-1')]
```

Total Patients for the analysis: 260

Demographics

Age

```
[1] "mean"
[1] 56.01154
[1] "sd"
[1] 18.35146
```

```

Gender
[1] "table"
variable
Female   Male
    204    56
[1] "proportion"
variable
    Female    Male
0.7846154 0.2153846

```

```

Prior Spine Surgery
[1] "table"
variable
No Yes
169 91
[1] "proportion"
variable
No Yes
0.65 0.35

```

```

Height (cm)_First Visit
[1] "mean"
[1] 162.8301
[1] "sd"
[1] 9.095643

```

```

Weight (kgs)_First Visit
[1] "mean"
[1] 66.53462
[1] "sd"
[1] 12.69948

```

```

BMI_First Visit
[1] "mean"
[1] 25.09981
[1] "sd"
[1] 4.563928

```

```

ASA classification
[1] "table"
variable
  1  2  3  4
59 142 59 0
[1] "proportion"
variable
      1      2      3      4
0.2269231 0.5461538 0.2269231 0.0000000

```

Tobacco use_First Visit

[1] "table"

variable

Current User: 1 pack per day	Current User: 2 packs per day
16	1
Current User: 3 packs or more per day	Current User: Less than 1pk per day
3	40
Ex-User: 0-6 months	Ex-User: 1 year or greater
5	2
Ex-User: 2 yrs or greater	Ex-User: 6-12 months
28	2
Non-User	
163	

[1] "proportion"

variable

Current User: 1 pack per day	Current User: 2 packs per day
0.061538462	0.003846154
Current User: 3 packs or more per day	Current User: Less than 1pk per day
0.011538462	0.153846154
Ex-User: 0-6 months	Ex-User: 1 year or greater
0.019230769	0.007692308
Ex-User: 2 yrs or greater	Ex-User: 6-12 months
0.107692308	0.007692308
Non-User	
0.626923077	

ESSG Diagnosis

[1] "table"

variable

Congenital	Degenerative
7	114
Failed-back	Idiopathic
18	95
Neuromuscular	Other: radiotherapy induced
5	1
Post-traumatic	Scheuermann
7	9
Syndromic	
4	

[1] "proportion"

variable

Congenital	Degenerative
0.026923077	0.438461538
Failed-back	Idiopathic
0.069230769	0.365384615
Neuromuscular	Other: radiotherapy induced
0.019230769	0.003846154
Post-traumatic	Scheuermann
0.026923077	0.034615385
Syndromic	
0.015384615	

Surgical Approach

[1] "table"

variable

Anterior-Posterior	Posterior	Posterior-Anterior
5	250	5

[1] "proportion"

variable

Anterior-Posterior	Posterior	Posterior-Anterior
0.01923077	0.96153846	0.01923077

Radiology

Static Major curve Cobb angle

[1] "mean"

[1] 42.39179

[1] "sd"

[1] 20.56321

6W. Static Major curve Cobb angle

[1] "mean"

[1] 22.12236

[1] "sd"

[1] 14.49691

2Y. Static Major curve Cobb angle

[1] "mean"

[1] 23.92011

[1] "sd"

[1] 17.18999

5Y. Static Major curve Cobb angle

[1] "mean"

[1] 22.61644

[1] "sd"

[1] 17.98226

Static Major curve Cobb angle tests

preop vs 6w p-value

1.775593e-30

6w vs 2y p-value

0.2604328

6w vs 5y p-value

0.8171321

2y vs 5y p-value

0.5676023

Coronal Balance (C7PL to CSVL)

```
[1] "mean"
[1] 22.33362
[1] "sd"
[1] 20.32074
```

```
6W. Coronal Balance (C7PL to CSVL)
[1] "mean"
[1] 21.00852
[1] "sd"
[1] 17.20664
```

```
2Y. Coronal Balance (C7PL to CSVL)
[1] "mean"
[1] 18.85208
[1] "sd"
[1] 15.48205
```

```
5Y. Coronal Balance (C7PL to CSVL)
[1] "mean"
[1] 19.59847
[1] "sd"
[1] 16.26871
```

```
Coronal Balance (C7PL to CSVL) tests
preop vs 6w p-value
0.4654842
6w vs 2y p-value
0.2059004
```

```
6w vs 5y p-value
0.5129082
2y vs 5y p-value
0.7253921
```

```
Sagittal Balance
[1] "mean"
[1] 49.05664
[1] "sd"
[1] 61.89167
```

```
6W. Sagittal Balance
[1] "mean"
[1] 25.85922
[1] "sd"
[1] 41.20393
```

```
2Y. Sagittal Balance
[1] "mean"
```

```
[1] 31.81892
[1] "sd"
[1] 48.21584
```

5Y. Sagittal Balance

```
[1] "mean"
[1] 34.69048
[1] "sd"
[1] 47.65116
```

Sagittal Balance tests

preop vs 6w p-value

2.510545e-06

6w vs 2y p-value

0.199871

6w vs 5y p-value

0.1397754

2y vs 5y p-value

0.6513763

Sagittal T2-T5

```
[1] "mean"
[1] 12.73878
[1] "sd"
[1] 10.34602
```

6W. Sagittal T2-T5

```
[1] "mean"
[1] 14.31248
[1] "sd"
[1] 9.250246
```

2Y. Sagittal T2-T5

```
[1] "mean"
[1] 14.7418
[1] "sd"
[1] 10.1651
```

5Y. Sagittal T2-T5

```
[1] "mean"
[1] 15.02824
[1] "sd"
[1] 11.25594
```

Sagittal T2-T5 tests

preop vs 6w p-value

0.08313513

6w vs 2y p-value
0.6622497

6w vs 5y p-value
0.6035325
2y vs 5y p-value
0.8419077

Sagittal T5-T12
[1] "mean"
[1] 32.96492
[1] "sd"
[1] 18.1127

6W. Sagittal T5-T12
[1] "mean"
[1] 35.69605
[1] "sd"
[1] 13.91589

2Y. Sagittal T5-T12
[1] "mean"
[1] 38.54772
[1] "sd"
[1] 17.48335

5Y. Sagittal T5-T12
[1] "mean"
[1] 42.16682
[1] "sd"
[1] 16.39336

Sagittal T5-T12 tests
preop vs 6w p-value
0.06511992
6w vs 2y p-value
0.07568404

6w vs 5y p-value
0.001657973
2y vs 5y p-value
0.1011708

Sagittal T2-T12
[1] "mean"
[1] 40.48218
[1] "sd"
[1] 18.77018

6W. Sagittal T2-T12

```
[1] "mean"  
[1] 45.33738  
[1] "sd"  
[1] 14.807
```

2Y. Sagittal T2-T12

```
[1] "mean"  
[1] 48.005  
[1] "sd"  
[1] 15.9886
```

5Y. Sagittal T2-T12

```
[1] "mean"  
[1] 51.35529  
[1] "sd"  
[1] 16.49139
```

Sagittal T2-T12 tests

preop vs 6w p-value

0.001814424

6w vs 2y p-value

0.08680246

6w vs 5y p-value

0.003979729

2y vs 5y p-value

0.1198131

Lordosis (top of L1-S1)

```
[1] "mean"  
[1] -43.91152  
[1] "sd"  
[1] 20.46163
```

6W. Lordosis (top of L1-S1)

```
[1] "mean"  
[1] -51.20455  
[1] "sd"  
[1] 15.15762
```

2Y. Lordosis (top of L1-S1)

```
[1] "mean"  
[1] -51.05429  
[1] "sd"  
[1] 16.55966
```

5Y. Lordosis (top of L1-S1)


```
[1] "mean"  
[1] -52.3891  
[1] "sd"  
[1] 15.73434
```

Lordosis (top of L1-S1) tests
preop vs 6w p-value
6.875235e-06
6w vs 2y p-value
0.9215772

6w vs 5y p-value
0.5402094
2y vs 5y p-value
0.5140072

Pelvic Incidence
[1] "mean"
[1] 55.6207
[1] "sd"
[1] 13.62823

6W. Pelvic Incidence
[1] "mean"
[1] 54.99855
[1] "sd"
[1] 13.07877

2Y. Pelvic Incidence
[1] "mean"
[1] 54.91515
[1] "sd"
[1] 14.1555

5Y. Pelvic Incidence
[1] "mean"
[1] 55.82067
[1] "sd"
[1] 12.55407

Pelvic Incidence tests
preop vs 6w p-value
0.603049
6w vs 2y p-value
0.9496152

6w vs 5y p-value
0.602177
2y vs 5y p-value

0.5892807

Pelvic Tilt

```
[1] "mean"
[1] 22.75004
[1] "sd"
[1] 10.30519
```

6W. Pelvic Tilt

```
[1] "mean"
[1] 19.34814
[1] "sd"
[1] 9.409235
```

2Y. Pelvic Tilt

```
[1] "mean"
[1] 20.53083
[1] "sd"
[1] 9.429965
```

5Y. Pelvic Tilt

```
[1] "mean"
[1] 22.54236
[1] "sd"
[1] 9.603285
```

Pelvic Tilt tests

preop vs 6w p-value

0.0001424316

6w vs 2y p-value

0.1940398

6w vs 5y p-value

0.00776175

2y vs 5y p-value

0.1020266

Sacral Slope

```
[1] "mean"
[1] 33.33685
[1] "sd"
[1] 10.83705
```

6W. Sacral Slope

```
[1] "mean"
[1] 35.51189
[1] "sd"
[1] 10.26095
```

2Y. Sacral Slope

```
[1] "mean"  
[1] 34.46995  
[1] "sd"  
[1] 11.74755
```

5Y. Sacral Slope

```
[1] "mean"  
[1] 33.27876  
[1] "sd"  
[1] 10.51547
```

Sacral Slope tests
preop vs 6w p-value
0.02156465
6w vs 2y p-value
0.3307225

6w vs 5y p-value
0.08652345
2y vs 5y p-value
0.3951805

RLL

```
[1] "mean"  
[1] -19.59184  
[1] "sd"  
[1] 19.7676
```

6W. RLL

```
[1] "mean"  
[1] -11.87792  
[1] "sd"  
[1] 13.80319
```

2Y. RLL

```
[1] "mean"  
[1] -11.92485  
[1] "sd"  
[1] 14.83654
```

5Y. RLL

```
[1] "mean"  
[1] -11.21989  
[1] "sd"  
[1] 13.79993
```

RLL tests
preop vs 6w p-value
6.165043e-07
6w vs 2y p-value
0.9730591

6w vs 5y p-value
0.7013579
2y vs 5y p-value
0.697301

Global Tilt
[1] "mean"
[1] 27.58839
[1] "sd"
[1] 16.5439

6W. Global Tilt
[1] "mean"
[1] 21.00552
[1] "sd"
[1] 12.02162

2Y. Global Tilt
[1] "mean"
[1] 23.11808
[1] "sd"
[1] 13.31595

5Y. Global Tilt
[1] "mean"
[1] 25.35551
[1] "sd"
[1] 14.14173

Global Tilt tests
preop vs 6w p-value
1.144002e-06
6w vs 2y p-value
0.1043622

6w vs 5y p-value
0.01208549
2y vs 5y p-value
0.2162239

T1 Sagittal Tilt
[1] "mean"
[1] -1.332452
[1] "sd"

[1] 6.048663

6W. T1 Sagittal Tilt

[1] "mean"

[1] -3.024548

[1] "sd"

[1] 4.095851

2Y. T1 Sagittal Tilt

[1] "mean"

[1] -2.884757

[1] "sd"

[1] 4.619021

5Y. T1 Sagittal Tilt

[1] "mean"

[1] -2.864197

[1] "sd"

[1] 4.360016

T1 Sagittal Tilt tests

preop vs 6w p-value

0.0005670073

6w vs 2y p-value

0.7584285

6w vs 5y p-value

0.7685204

2y vs 5y p-value

0.9718129

Thoracolumbar L2-T10

[1] "mean"

[1] 9.153439

[1] "sd"

[1] 20.61571

6W. Thoracolumbar L2-T10

[1] "mean"

[1] 5.079585

[1] "sd"

[1] 11.01987

2Y. Thoracolumbar L2-T10

[1] "mean"

[1] 8.233279

[1] "sd"

[1] 12.98529

5Y. Thoracolumbar L2-T10

```
[1] "mean"  
[1] 8.358837  
[1] "sd"  
[1] 13.76406
```

Thoracolumbar L2-T10 tests

preop vs 6w p-value

0.006769617

6w vs 2y p-value

0.009948346

6w vs 5y p-value

0.05061382

2y vs 5y p-value

0.9434601

RSA

```
[1] "mean"  
[1] 15.84237  
[1] "sd"  
[1] 14.19187
```

6W. RSA

```
[1] "mean"  
[1] 9.470991  
[1] "sd"  
[1] 9.727611
```

2Y. RSA

```
[1] "mean"  
[1] 11.58124  
[1] "sd"  
[1] 11.70767
```

5Y. RSA

```
[1] "mean"  
[1] 13.56146  
[1] "sd"  
[1] 12.26083
```

RSA tests

preop vs 6w p-value

2.362201e-08

6w vs 2y p-value

0.05697593

6w vs 5y p-value
0.005864927
2y vs 5y p-value
0.2088101

RPV
[1] "mean"
[1] -8.551211
[1] "sd"
[1] 8.454638

6W. RPV
[1] "mean"
[1] -5.947521
[1] "sd"
[1] 7.411339

2Y. RPV
[1] "mean"
[1] -6.930258
[1] "sd"
[1] 7.892888

5Y. RPV
[1] "mean"
[1] -8.655618
[1] "sd"
[1] 7.850771

RPV tests
preop vs 6w p-value
0.0002798806
6w vs 2y p-value
0.1851237

6w vs 5y p-value
0.005388476
2y vs 5y p-value
0.0883872

Quality of Life

ODI - Score (%)_First Visit
[1] "mean"
[1] 40.46341
[1] "sd"
[1] 19.57082

6M. ODI - Score (%)

```
[1] "mean"  
[1] 30.025  
[1] "sd"  
[1] 17.82573
```

2Y. ODI - Score (%)

```
[1] "mean"  
[1] 29.39024  
[1] "sd"  
[1] 21.06477
```

5Y. ODI - Score (%)

```
[1] "mean"  
[1] 28.55056  
[1] "sd"  
[1] 20.51567
```

ODI - Score (%)_First Visit tests

preop vs 6m p-value

1.630238e-09

6m vs 2y p-value

0.7198185

6m vs 5y p-value

0.4431764

2y vs 5y p-value

0.6810972

SRS22 - Function / Activity_First Visit

```
[1] "mean"  
[1] 2.989073  
[1] "sd"  
[1] 0.8069337
```

6M. SRS22 - Function / Activity

```
[1] "mean"  
[1] 3.178347  
[1] "sd"  
[1] 0.7885638
```

2Y. SRS22 - Function / Activity

```
[1] "mean"  
[1] 3.396382  
[1] "sd"  
[1] 0.9253881
```

5Y. SRS22 - Function / Activity


```
[1] "mean"
[1] 3.457303
[1] "sd"
[1] 0.8734091
```

```
SRS22 - Function / Activity_First Visit tests
preop vs 6m p-value
0.008910995
6m vs 2y p-value
0.005269181
```

```
6m vs 5y p-value
0.0008358806
2y vs 5y p-value
0.4898006
```

```
SRS22 - Pain_First Visit
[1] "mean"
[1] 2.500484
[1] "sd"
[1] 0.9443429
```

```
6M. SRS22 - Pain
[1] "mean"
[1] 3.351446
[1] "sd"
[1] 0.9539992
```

```
2Y. SRS22 - Pain
[1] "mean"
[1] 3.410976
[1] "sd"
[1] 1.095548
```

```
5Y. SRS22 - Pain
[1] "mean"
[1] 3.352528
[1] "sd"
[1] 1.118858
```

```
SRS22 - Pain_First Visit tests
preop vs 6m p-value
2.965615e-21
6m vs 2y p-value
0.5221915
```

```
6m vs 5y p-value
0.991698
2y vs 5y p-value
```

0.5926048

SRS22 - Self image / Appearance_First Visit

[1] "mean"

[1] 2.411008

[1] "sd"

[1] 0.7305919

6M. SRS22 - Self image / Appearance

[1] "mean"

[1] 3.436322

[1] "sd"

[1] 0.8471922

2Y. SRS22 - Self image / Appearance

[1] "mean"

[1] 3.343496

[1] "sd"

[1] 0.9283068

5Y. SRS22 - Self image / Appearance

[1] "mean"

[1] 3.315449

[1] "sd"

[1] 0.9462833

SRS22 - Self image / Appearance_First Visit tests

preop vs 6m p-value

5.832012e-39

6m vs 2y p-value

0.249016

6m vs 5y p-value

0.1773296

2y vs 5y p-value

0.7615956

SRS22 - Mental health_First Visit

[1] "mean"

[1] 3.145081

[1] "sd"

[1] 0.8475528

6M. SRS22 - Mental health

[1] "mean"

[1] 3.500868

[1] "sd"

[1] 0.8786191

2Y. SRS22 - Mental health

```
[1] "mean"  
[1] 3.497764  
[1] "sd"  
[1] 1.004167
```

5Y. SRS22 - Mental health

```
[1] "mean"  
[1] 3.460955  
[1] "sd"  
[1] 0.9133694
```

SRS22 - Mental health_First Visit tests

preop vs 6m p-value

6.469058e-06

6m vs 2y p-value

0.9710171

6m vs 5y p-value

0.6531764

2y vs 5y p-value

0.6947462

SRS22 - SRS Subtotal score_First Visit

```
[1] "mean"  
[1] 2.766613  
[1] "sd"  
[1] 0.6706537
```

6M. SRS22 - SRS Subtotal score

```
[1] "mean"  
[1] 3.368264  
[1] "sd"  
[1] 0.7197875
```

2Y. SRS22 - SRS Subtotal score

```
[1] "mean"  
[1] 3.411504  
[1] "sd"  
[1] 0.8714823
```

5Y. SRS22 - SRS Subtotal score

```
[1] "mean"  
[1] 3.37838  
[1] "sd"  
[1] 0.8831456
```

```

SRS22 - SRS Subtotal score_First Visit tests
preop vs 6m p-value
5.621727e-20
6m vs 2y p-value
0.550123

6m vs 5y p-value
0.900215
2y vs 5y p-value
0.7012621

SRS22 - Satisfaction with management_First Visit
[1] "mean"
[1] 3.161585
[1] "sd"
[1] 1.078137

6M. SRS22 - Satisfaction with management
[1] "mean"
[1] 4.225738
[1] "sd"
[1] 0.8905649

2Y. SRS22 - Satisfaction with management
[1] "mean"
[1] 4.07438
[1] "sd"
[1] 1.053863

5Y. SRS22 - Satisfaction with management
[1] "mean"
[1] 3.946328
[1] "sd"
[1] 1.038301

SRS22 - Satisfaction with management_First Visit tests
preop vs 6m p-value
5.941749e-22
6m vs 2y p-value
0.08997252

6m vs 5y p-value
0.004275074
2y vs 5y p-value
0.2160757

SF36 - PCS_First Visit
[1] "mean"
[1] 34.96494
[1] "sd"

```

[1] 9.329975

6M. SF36 - PCS

[1] "mean"

[1] 39.63639

[1] "sd"

[1] 9.127802

2Y. SF36 - PCS

[1] "mean"

[1] 41.34494

[1] "sd"

[1] 10.37093

5Y. SF36 - PCS

[1] "mean"

[1] 41.09875

[1] "sd"

[1] 11.2221

SF36 - PCS_First Visit tests

preop vs 6m p-value

3.772353e-08

6m vs 2y p-value

0.05463369

6m vs 5y p-value

0.1566918

2y vs 5y p-value

0.8190451

SF36 - MCS_First Visit

[1] "mean"

[1] 43.60664

[1] "sd"

[1] 12.08924

6M. SF36 - MCS

[1] "mean"

[1] 47.42515

[1] "sd"

[1] 12.48295

2Y. SF36 - MCS

[1] "mean"

[1] 47.17889

[1] "sd"

[1] 12.97837

5Y. SF36 - MCS

[1] "mean"

[1] 47.18932

[1] "sd"

[1] 11.31031

SF36 - MCS_First Visit tests

preop vs 6m p-value

0.000651602

6m vs 2y p-value

0.831431

6m vs 5y p-value

0.8403882

2y vs 5y p-value

0.9930002

Surgery

Total Operative Blood Loss st1+st2+st3

[1] "mean"

[1] 1528.104

[1] "sd"

[1] 1267.89

Total surgical time

[1] "mean"

[1] 340.7375

[1] "sd"

[1] 159.4847

Number of Posterior Instrumented Levels

[1] "mean"

[1] 8.334615

[1] "sd"

[1] 3.787751

Pelvic fixation

[1] "table"

variable

No Yes

154 106

[1] "proportion"

variable

No Yes

0.5923077 0.4076923

Surgical Approach

[1] "table"

variable

Anterior-Posterior	Posterior	Posterior-Anterior
5	250	5

[1] "proportion"

variable

Anterior-Posterior	Posterior	Posterior-Anterior
0.01923077	0.96153846	0.01923077

Number of Interbody Fusions

[1] "mean"

[1] 1.084615

[1] "sd"

[1] 1.312457

Decompression

[1] "table"

variable

No Yes

173 87

[1] "proportion"

variable

No	Yes
0.6653846	0.3346154

Interbody Fusion

[1] "table"

variable

No Yes

121 139

[1] "proportion"

variable

No	Yes
0.4653846	0.5346154

Osteotomy

[1] "table"

variable

No Yes

121 139

[1] "proportion"

variable

No	Yes
0.4653846	0.5346154

3CO

[1] "table"

```

variable
FALSE TRUE
  219   41
[1] "proportion"
variable
      FALSE      TRUE
0.8423077 0.1576923

```

```

uiv_t10_12_l1
[1] "table"
variable
  No Yes
233  27
[1] "proportion"
variable
      No      Yes
0.8961538 0.1038462

```