LIV L4/L5

```
Initial Patients: 372
With Posterior Instrumented Fusion: 348
   type
          N
1: <NA> 267
    L5 39
2:
3:
     L4 42
Patients who end up intrumented until pelvis
revision <- read_excel(xls_path, sheet="Revision surgeries") %>%
  as.data.table()
revision[, 'Posterior Instrumented Fusion: Upper / Lower Levels'] %>%
  sapply(. %>% strsplit('-') %>% .[[1]] %>% .[2]) ->
  post_intr_fusion
reint_iliac <- revision[post_intr_fusion=='Iliac', 'Code of the patient']
data_['Code of the patient' %in% reint_iliac, 'Code of the patient' %>% uniqueN, type]
   type V1
   L5 9
1:
2: <NA> 13
3:
   L4 1
Demographics
Age - mean
All
[1] 52.37931
[1] 45.78571
L5
[1] 54.02564
L4 vs L5 p-value:[1] 0.02396962
Age - sd
All
[1] 19.24886
L4
```

```
[1] 15.97183
L5
[1] 16.2067
Gender - table
All
variable
Female Male
   274
          74
L4
variable
Female
       Male
    33
L5
variable
Female Male
   32
Gender - proportion
variable
  Female
0.7873563 0.2126437
variable
   Female
              Male
0.7857143 0.2142857
L5
variable
   Female
              Male
0.8205128 0.1794872
Prior Spine Surgery - table
All
variable
No Yes
244 104
L4
variable
No Yes
36
L5
variable
No Yes
28 11
Prior Spine Surgery - proportion
All
variable
```

No

Yes

```
0.7011494 0.2988506
L4
variable
      No
               Yes
0.8571429 0.1428571
L5
variable
      No
                Yes
0.7179487 0.2820513
Height (cm)_First Visit - mean
All
[1] 163.0086
L4
[1] 164.881
L5
[1] 161.4359
L4 vs L5 p-value:[1] 0.09689435
Height (cm)_First Visit - sd
All
[1] 9.301155
[1] 8.726753
L5
[1] 9.651274
Weight (kgs)_First Visit - mean
All
[1] 65.83141
L4
[1] 65.7619
[1] 65.82051
L4 vs L5 p-value:[1] 0.9838195
Weight (kgs)_First Visit - sd
All
[1] 13.15332
L4
[1] 11.92622
[1] 13.83716
```

```
BMI_First Visit - mean
All
[1] 24.78965
[1] 24.2581
L5
[1] 25.30333
L4 vs L5 p-value:[1] 0.3199424
BMI_First Visit - sd
All
[1] 4.62612
L4
[1] 4.368086
L5
[1] 4.979352
ASA classification - table
All
variable
1 2 3
106 191 51
variable
1 2 3
17 22 3
L5
variable
1 2 3
9 26 4
ASA classification - proportion
All
variable
0.3045977 0.5488506 0.1465517
variable
       1 2
0.40476190\ 0.52380952\ 0.07142857
variable
                 2
0.2307692 0.6666667 0.1025641
Tobacco use_First Visit - table
```

All variable

Current Ex Non-User 69 63 216 L4 variable Current Ex Non-User 8 9 25 L5 variable Current Ex Non-User 8 6 25 Tobacco use_First Visit - proportion variable Current Ex Non-User 0.1982759 0.1810345 0.6206897 L4 variable Ex Non-User Current 0.1904762 0.2142857 0.5952381 L5 variable Current Ex Non-User 0.2051282 0.1538462 0.6410256 ESSG Diagnosis - table All variable Degenerative Congenital 122 Failed-back Idiopathic 19 Neuromuscular Other: Ankylosing spondylitis Other: radiotherapy induced Other: spondylolisthesis Post-traumatic Scheuermann 15 15 Syndromic L4 variable Degenerative Failed-back Idiopathic Post-traumatic Syndromic 31 5 1 1 L5 variable Idiopathic Post-traumatic Congenital Degenerative Failed-back 18 Scheuermann Syndromic

ESSG Diagnosis - proportion

```
All
variable
                   Congenital
                                                Degenerative
                  0.025862069
                                                 0.350574713
                  Failed-back
                                                  Idiopathic
                  0.054597701
                                                 0.448275862
                Neuromuscular Other: Ankylosing spondylitis
                  0.014367816
                                                 0.002873563
  Other: radiotherapy induced
                                    Other: spondylolisthesis
                  0.002873563
                                                 0.002873563
               Post-traumatic
                                                 Scheuermann
                  0.043103448
                                                 0.043103448
                    Syndromic
                  0.011494253
L4
variable
  Degenerative
                                   Idiopathic Post-traumatic
                                                                   Syndromic
                  Failed-back
                                   0.73809524
    0.11904762
                                                  0.09523810
                                                                  0.02380952
                   0.02380952
L5
variable
                 Degenerative
    Congenital
                                  Failed-back
                                                  Idiopathic Post-traumatic
    0.05128205
                   0.30769231
                                   0.10256410
                                                  0.46153846
                                                                 0.02564103
   Scheuermann
                    Syndromic
                   0.02564103
    0.02564103
Radiology
Static Major curve Cobb angle - mean
[1] 42.86126
L4
[1] 50.21667
L5
[1] 45.54816
L4 vs L5 p-value:[1] 0.3827009
Static Major curve Cobb angle - sd
All
[1] 21.16524
L4
[1] 21.98985
[1] 24.55119
6W. Static Major curve Cobb angle - mean
All
[1] 22.28508
L4
```

[1] 25.11917

```
[1] 25.28838
L4 vs L5 p-value:[1] 0.9662744
6W. Static Major curve Cobb angle - sd
All
[1] 15.03951
L4
[1] 15.7548
[1] 18.25572
6M. Static Major curve Cobb angle - mean
[1] 22.11803
L4
[1] 25.03243
L5
[1] 26.73529
L4 vs L5 p-value:[1] 0.6799513
6M. Static Major curve Cobb angle - sd
All
[1] 15.82402
L4
[1] 15.70284
L5
[1] 18.64226
1Y. Static Major curve Cobb angle - mean
All
[1] 20.3063
L4
[1] 23.3535
[1] 24.50108
L4 vs L5 p-value:[1] 0.7742008
1Y. Static Major curve Cobb angle - sd
[1] 15.65562
L4
[1] 16.69628
L5
```

```
2Y. Static Major curve Cobb angle - mean
All
[1] 21.62893
L4
[1] 24.79656
L5
[1] 26.43484
L4 vs L5 p-value:[1] 0.7054688
2Y. Static Major curve Cobb angle - sd
All
[1] 15.67408
L4
[1] 14.12019
L5
[1] 19.57633
5Y. Static Major curve Cobb angle - mean
All
[1] 24.83891
L4
[1] 31.1735
[1] 31.11636
L4 vs L5 p-value:[1] 0.9920431
5Y. Static Major curve Cobb angle - sd
All
[1] 16.535
L4
[1] 15.81463
[1] 20.92306
Static Major curve Cobb angle tests all
Preop vs 6w p-value
2.612939e-39
Preop vs 2y p-value
```

[1] 18.16084

5.814775e-39

Preop vs 5y p-value

3.548346e-20

6w vs 2y p-value 0.6091221

2y vs 5y p-value 0.05985225

6w vs 5y p-value 0.122996

Static Major curve Cobb angle tests L4 Preop vs 6w p-value 2.586475e-07

Preop vs 2y p-value 1.466771e-07

Preop vs 5y p-value 0.0003711541

6w vs 2y p-value 0.9293153

2y vs 5y p-value 0.1491365

6w vs 5y p-value 0.1770632

Static Major curve Cobb angle tests L5 Preop vs 6w p-value 0.0001275796

Preop vs 2y p-value 0.0006094734

Preop vs 5y p-value 0.0195258

6w vs 2y p-value 0.8049483

2y vs 5y p-value 0.4143113

6w vs 5y p-value 0.2849302

Coronal Balance (C7PL to CSVL) - mean All [1] 22.93623 L4 [1] 19.0495

```
[1] 19.71324
L4 vs L5 p-value:[1] 0.8284834
Coronal Balance (C7PL to CSVL) - sd
All
[1] 19.6459
L4
[1] 11.78102
[1] 14.09169
6W. Coronal Balance (C7PL to CSVL) - mean
All
[1] 20.30517
L4
[1] 23.20235
L5
[1] 22.5775
L4 vs L5 p-value:[1] 0.8802018
6W. Coronal Balance (C7PL to CSVL) - sd
All
[1] 15.15984
L4
[1] 15.6518
L5
[1] 17.7469
6M. Coronal Balance (C7PL to CSVL) - mean
All
[1] 18.82025
L4
[1] 14.84273
[1] 21.69464
L4 vs L5 p-value:[1] 0.07179218
6M. Coronal Balance (C7PL to CSVL) - sd
[1] 14.8228
L4
[1] 9.719906
L5
```

```
1Y. Coronal Balance (C7PL to CSVL) - mean
All
[1] 18.23263
L4
[1] 13.35714
L5
[1] 20.28778
L4 vs L5 p-value:[1] 0.02164315
1Y. Coronal Balance (C7PL to CSVL) - sd
All
[1] 13.86945
L4
[1] 8.579425
L5
[1] 13.08954
2Y. Coronal Balance (C7PL to CSVL) - mean
[1] 18.25252
L4
[1] 14.86364
[1] 17.50778
L4 vs L5 p-value:[1] 0.410834
2Y. Coronal Balance (C7PL to CSVL) - sd
All
[1] 15.6976
L4
[1] 10.71555
[1] 13.43186
5Y. Coronal Balance (C7PL to CSVL) - mean
All
[1] 20.90584
L4
[1] 16.55842
L5
[1] 17.1345
```

[1] 17.45066

L4 vs L5 p-value:[1] 0.8667627

5Y. Coronal Balance (C7PL to CSVL) - sd All
[1] 17.44156
L4
[1] 9.833244
L5
[1] 11.43413

Coronal Balance (C7PL to CSVL) tests all Preop vs 6w p-value 0.06260439

Preop vs 2y p-value 0.001521409

Preop vs 5y p-value 0.2725863

6w vs 2y p-value 0.1232651

2y vs 5y p-value 0.1386677

6w vs 5y p-value 0.7298518

Coronal Balance (C7PL to CSVL) tests L4 Preop vs 6w p-value 0.2085735

Preop vs 2y p-value 0.1168046

Preop vs 5y p-value 0.3993367

6w vs 2y p-value 0.01337701

2y vs 5y p-value 0.5658197

6w vs 5y p-value 0.06388229

Coronal Balance (C7PL to CSVL) tests L5 Preop vs 6w p-value 0.472363 Preop vs 2y p-value 0.5356145 Preop vs 5y p-value 0.4672372 6w vs 2y p-value 0.2174933 2y vs 5y p-value 0.9186928 6w vs 5y p-value 0.1847344 Sagittal Balance - mean [1] 42.77619 L4 [1] 13.11974 L5 [1] 29.42789 L4 vs L5 p-value:[1] 0.1287651 Sagittal Balance - sd All [1] 62.49559 L4 [1] 45.53696 L5 [1] 47.57232 6W. Sagittal Balance - mean All [1] 19.26473 L4 [1] 8.551818

[1] 32.40324 L4 vs L5 p-value:[1] 0.007714831

6W. Sagittal Balance - sd All [1] 37.36993 L4 [1] 29.89019 L5

6M. Sagittal Balance - mean All [1] 15.97674 L4 [1] 3.055 L5 [1] 21.68333 L4 vs L5 p-value:[1] 0.04552114 6M. Sagittal Balance - sd All [1] 43.76537 L4 [1] 31.0467 L5 [1] 39.20212 1Y. Sagittal Balance - mean All [1] 19.33475 L4 [1] -2.346176 [1] 19.16259 L4 vs L5 p-value:[1] 0.02727914 1Y. Sagittal Balance - sd All [1] 48.72367 L4 [1] 33.57705 [1] 39.03962 2Y. Sagittal Balance - mean All [1] 24.44867 L4 [1] -0.556129

L5

[1] 28.33731

[1] 40.32849

L4 vs L5 p-value:[1] 0.004820746

2Y. Sagittal Balance - sd

All

[1] 49.39084

L4

[1] 34.09116

L5

[1] 38.98368

5Y. Sagittal Balance - mean

All

[1] 33.34324

L4

[1] 1.478421

L5

[1] 40.85571

L4 vs L5 p-value:[1] 0.002170761

5Y. Sagittal Balance - sd

All

[1] 48.54904

L4

[1] 34.35246

L5

[1] 41.25933

Sagittal Balance tests all Preop vs 6w p-value 1.206885e-08

Preop vs 2y p-value 8.029604e-05

Preop vs 5y p-value 0.07912822

6w vs 2y p-value 0.1718073

2y vs 5y p-value 0.08522743

6w vs 5y p-value 0.002833183

Sagittal Balance tests L4

Preop vs 6w p-value 0.6117932

Preop vs 2y p-value 0.1555144

Preop vs 5y p-value 0.2839043

6w vs 2y p-value 0.2615273

2y vs 5y p-value 0.8395493

6w vs 5y p-value 0.4590759

Sagittal Balance tests L5 Preop vs 6w p-value 0.7748762

Preop vs 2y p-value 0.9203671

Preop vs 5y p-value 0.3401732

6w vs 2y p-value 0.6948255

2y vs 5y p-value 0.2952987

6w vs 5y p-value 0.4607481

Sagittal T2-T5 - mean All

[1] 10.9219

L4

[1] 8.6845

L5

[1] 10.23026

L4 vs L5 p-value:[1] 0.4031292

Sagittal T2-T5 - sd

All

[1] 9.676818

L4

[1] 8.863028

L5

```
6W. Sagittal T2-T5 - mean
All
[1] 13.5879
L4
[1] 11.61486
L5
[1] 12.48879
L4 vs L5 p-value:[1] 0.5942622
6W. Sagittal T2-T5 - sd
All
[1] 8.196472
[1] 7.646527
L5
[1] 5.7268
6M. Sagittal T2-T5 - mean
All
[1] 14.17102
L4
[1] 13.66194
[1] 13.57143
L4 vs L5 p-value:[1] 0.9741784
6M. Sagittal T2-T5 - sd
All
[1] 9.60744
L4
[1] 8.776699
[1] 12.51792
1Y. Sagittal T2-T5 - mean
All
[1] 13.75941
L4
[1] 12.90394
L5
```

[1] 11.40897

[1] 7.33487

```
L4 vs L5 p-value:[1] 0.5449708
1Y. Sagittal T2-T5 - sd
[1] 9.464446
L4
[1] 12.09008
[1] 6.789844
2Y. Sagittal T2-T5 - mean
All
[1] 14.44455
L4
[1] 14.10471
[1] 11.59357
L4 vs L5 p-value:[1] 0.2986884
2Y. Sagittal T2-T5 - sd
[1] 9.976044
[1] 10.44181
L5
[1] 8.418109
5Y. Sagittal T2-T5 - mean
All
[1] 15.8525
L4
[1] 16.4135
L5
[1] 7.981429
L4 vs L5 p-value:[1] 0.006230627
5Y. Sagittal T2-T5 - sd
All
[1] 11.76296
L4
[1] 11.46709
L5
[1] 5.656832
```

Sagittal T2-T5 tests all Preop vs 6w p-value 0.0002083196

Preop vs 2y p-value 1.647942e-05

Preop vs 5y p-value 1.882643e-05

6w vs 2y p-value 0.2700206

2y vs 5y p-value 0.2288968

6w vs 5y p-value 0.04128382

Sagittal T2-T5 tests L4 Preop vs 6w p-value 0.1285903

Preop vs 2y p-value 0.02006606

Preop vs 5y p-value 0.01275474

6w vs 2y p-value 0.2640278

2y vs 5y p-value 0.4650428

6w vs 5y p-value 0.1055092

Sagittal T2-T5 tests L5 Preop vs 6w p-value 0.1502634

Preop vs 2y p-value 0.4955256

Preop vs 5y p-value 0.1955455

6w vs 2y p-value 0.6357217

2y vs 5y p-value 0.07933627

```
6w vs 5y p-value
0.00684447
Sagittal T5-T12 - mean
All
[1] 32.71335
L4
[1] 35.44073
L5
[1] 30.13526
L4 vs L5 p-value:[1] 0.2415302
Sagittal T5-T12 - sd
All
[1] 19.03371
L4
[1] 21.71573
L5
[1] 18.18414
6W. Sagittal T5-T12 - mean
All
[1] 33.62656
L4
[1] 33.34242
[1] 32.31088
L4 vs L5 p-value:[1] 0.7505943
6W. Sagittal T5-T12 - sd
All
[1] 13.90854
L4
[1] 13.38075
[1] 13.06099
6M. Sagittal T5-T12 - mean
All
[1] 34.73774
L4
[1] 32.98676
L5
```

[1] 30.46667

```
L4 vs L5 p-value:[1] 0.4670917
6M. Sagittal T5-T12 - sd
[1] 14.02575
L4
[1] 11.92522
[1] 15.48689
1Y. Sagittal T5-T12 - mean
All
[1] 35.40093
L4
[1] 34.86206
[1] 33.33966
L4 vs L5 p-value:[1] 0.6606636
1Y. Sagittal T5-T12 - sd
[1] 13.97161
[1] 12.47545
L5
[1] 14.5701
2Y. Sagittal T5-T12 - mean
All
[1] 36.11884
L4
[1] 34.97529
L5
[1] 33.20893
L4 vs L5 p-value:[1] 0.6714107
2Y. Sagittal T5-T12 - sd
All
[1] 15.92236
L4
[1] 15.06349
L5
[1] 17.12723
```

5Y. Sagittal T5-T12 - mean

A 1 1

[1] 39.98071

L4

[1] 34.4225

L5

[1] 38.97227

L4 vs L5 p-value:[1] 0.370834

5Y. Sagittal T5-T12 - sd

All

[1] 15.98859

L4

[1] 15.30659

L5

[1] 17.26826

Sagittal T5-T12 tests all Preop vs 6w p-value 0.4847253

Preop vs 2y p-value 0.01664519

Preop vs 5y p-value 2.460794e-05

6w vs 2y p-value 0.04836636

2y vs 5y p-value 0.02077773

6w vs 5y p-value 6.718749e-05

Sagittal T5-T12 tests L4 Preop vs 6w p-value 0.6117047

Preop vs 2y p-value 0.9133731

Preop vs 5y p-value 0.8334733

6w vs 2y p-value 0.6403459

2y vs 5y p-value 0.8980827

6w vs 5y p-value 0.7956657

Sagittal T5-T12 tests L5 Preop vs 6w p-value 0.5589206

Preop vs 2y p-value 0.4854693

Preop vs 5y p-value 0.06741964

6w vs 2y p-value 0.8204658

2y vs 5y p-value 0.2458942

6w vs 5y p-value 0.1308473

Sagittal T2-T12 - mean

All

[1] 39.65857

L4

[1] 39.44095

L5

[1] 37.58632

L4 vs L5 p-value:[1] 0.6830684

Sagittal T2-T12 - sd

All

[1] 19.91087

L4

[1] 23.03531

L5

[1] 17.26251

6W. Sagittal T2-T12 - mean

All

[1] 42.95152

L4

[1] 40.41722

L5

[1] 41.59152

```
L4 vs L5 p-value:[1] 0.7283135
6W. Sagittal T2-T12 - sd
[1] 15.37581
L4
[1] 13.84846
[1] 14.07648
6M. Sagittal T2-T12 - mean
All
[1] 44.89783
L4
[1] 41.39718
L5
[1] 37.9
L4 vs L5 p-value:[1] 0.3164742
6M. Sagittal T2-T12 - sd
[1] 15.41013
[1] 14.68361
L5
[1] 13.93173
1Y. Sagittal T2-T12 - mean
All
[1] 44.7213
L4
[1] 41.80056
L5
[1] 39.684
L4 vs L5 p-value:[1] 0.5951255
1Y. Sagittal T2-T12 - sd
All
[1] 15.30903
L4
[1] 17.31613
L5
[1] 14.87456
```

```
2Y. Sagittal T2-T12 - mean
All
[1] 45.66838
L4
[1] 43.70943
L5
[1] 39.99483
L4 vs L5 p-value:[1] 0.3569212
```

2Y. Sagittal T2-T12 - sd All [1] 15.76841 L4 [1] 18.03837 L5

5Y. Sagittal T2-T12 - mean All

[1] 49.57493

[1] 13.95897

L4

[1] 44.9925

1.5

[1] 41.33381

L4 vs L5 p-value:[1] 0.4891298

5Y. Sagittal T2-T12 - sd All [1] 16.77857 L4 [1] 17.32894 L5 [1] 16.15582

Sagittal T2-T12 tests all Preop vs 6w p-value 0.01835384

Preop vs 2y p-value 3.481336e-05

Preop vs 5y p-value 5.620083e-08

6w vs 2y p-value

0.03750999

2y vs 5y p-value 0.02322655

6w vs 5y p-value 9.599658e-05

Sagittal T2-T12 tests L4 Preop vs 6w p-value 0.8184996

Preop vs 2y p-value 0.3649725

Preop vs 5y p-value 0.2962936

6w vs 2y p-value 0.3925143

2y vs 5y p-value 0.7959928

6w vs 5y p-value 0.3178374

Sagittal T2-T12 tests L5 Preop vs 6w p-value 0.2855313

Preop vs 2y p-value 0.5301449

Preop vs 5y p-value 0.4097321

6w vs 2y p-value 0.6560589

2y vs 5y p-value 0.7612263

6w vs 5y p-value 0.9524485

Lordosis (top of L1-S1) - mean All [1] -43.49873 L4 [1] -47.51714

L5

[1] -41.38385

```
L4 vs L5 p-value:[1] 0.12683
Lordosis (top of L1-S1) - sd
[1] 20.69902
L4
[1] 18.96916
[1] 16.79441
6W. Lordosis (top of L1-S1) - mean
All
[1] -51.24225
L4
[1] -49.00308
[1] -45.14105
L4 vs L5 p-value:[1] 0.1983333
6W. Lordosis (top of L1-S1) - sd
[1] 14.31666
[1] 14.45292
L5
[1] 11.52152
6M. Lordosis (top of L1-S1) - mean
All
[1] -50.93475
L4
[1] -49.87829
L5
[1] -44.72222
L4 vs L5 p-value:[1] 0.0843069
6M. Lordosis (top of L1-S1) - sd
All
[1] 14.143
L4
[1] 13.63278
L5
[1] 12.22786
```

```
1Y. Lordosis (top of L1-S1) - mean
[1] -50.99939
[1] -50.41474
[1] -47.47486
L4 vs L5 p-value:[1] 0.3247297
1Y. Lordosis (top of L1-S1) - sd
All
[1] 14.43568
L4
[1] 13.61477
L5
[1] 12.03265
2Y. Lordosis (top of L1-S1) - mean
[1] -51.48615
[1] -52.71314
[1] -49.10906
L4 vs L5 p-value:[1] 0.3273227
2Y. Lordosis (top of L1-S1) - sd
All
[1] 15.18502
L4
[1] 15.7278
[1] 14.16177
5Y. Lordosis (top of L1-S1) - mean
All
[1] -50.78937
L4
[1] -48.3485
[1] -45.53545
L4 vs L5 p-value:[1] 0.5608513
```

5Y. Lordosis (top of L1-S1) - sd All [1] 15.77495 L4 [1] 16.35281 L5 [1] 14.54658

Lordosis (top of L1-S1) tests all Preop vs 6w p-value 2.126727e-08

Preop vs 2y p-value 3.707571e-08

Preop vs 5y p-value 3.070916e-05

6w vs 2y p-value 0.8388887

2y vs 5y p-value 0.6632412

6w vs 5y p-value 0.7685465

Lordosis (top of L1-S1) tests L4 Preop vs 6w p-value 0.6915798

Preop vs 2y p-value 0.1928245

Preop vs 5y p-value 0.8599529

6w vs 2y p-value 0.296182

2y vs 5y p-value 0.3403641

6w vs 5y p-value 0.8806502

Lordosis (top of L1-S1) tests L5 Preop vs 6w p-value 0.2553332

Preop vs 2y p-value 0.03915649

Preop vs 5y p-value 0.3167956 6w vs 2y p-value 0.2089853 2y vs 5y p-value 0.3747529 6w vs 5y p-value 0.9138651 Pelvic Incidence - mean All [1] 53.94477 L4 [1] 48.915 L5 [1] 52.5441 L4 vs L5 p-value:[1] 0.157949 Pelvic Incidence - sd [1] 13.08012 [1] 11.37921 L5 [1] 11.51062 6W. Pelvic Incidence - mean All [1] 54.07006 L4 [1] 48.21615 L5 [1] 52.59184 L4 vs L5 p-value:[1] 0.1014558 6W. Pelvic Incidence - sd All [1] 12.97202 L4 [1] 11.58524

L5

[1] 11.56849

```
6M. Pelvic Incidence - mean
All
[1] 53.87257
[1] 47.7839
L5
[1] 51.51429
L4 vs L5 p-value:[1] 0.1498352
6M. Pelvic Incidence - sd
All
[1] 12.66077
L4
[1] 11.44377
L5
[1] 10.8692
1Y. Pelvic Incidence - mean
All
[1] 53.58789
[1] 47.95154
[1] 52.65378
L4 vs L5 p-value:[1] 0.06155034
1Y. Pelvic Incidence - sd
All
[1] 12.56026
L4
[1] 10.7562
[1] 10.82734
2Y. Pelvic Incidence - mean
[1] 53.74154
[1] 47.65735
[1] 53.41437
L4 vs L5 p-value:[1] 0.05246645
```

2Y. Pelvic Incidence - sd

All

[1] 12.46023

L4

[1] 12.83766

L5

[1] 10.78803

5Y. Pelvic Incidence - mean

All

[1] 54.78028

L4

[1] 47.263

L5

[1] 54.88273

L4 vs L5 p-value:[1] 0.05373662

5Y. Pelvic Incidence - sd

All

[1] 12.46756

L4

[1] 12.84556

L5

[1] 11.88406

Pelvic Incidence tests all Preop vs 6w p-value 0.9010697

Preop vs 2y p-value 0.8429863

Preop vs 5y p-value 0.5073785

6w vs 2y p-value 0.7511546

2y vs 5y p-value 0.4181801

6w vs 5y p-value 0.5754863

Pelvic Incidence tests L4 Preop vs 6w p-value 0.7851161 Preop vs 2y p-value 0.6566142

Preop vs 5y p-value 0.6268108

6w vs 2y p-value 0.846688

2y vs 5y p-value 0.9137755

6w vs 5y p-value 0.7820696

Pelvic Incidence tests L5 Preop vs 6w p-value 0.9855682

Preop vs 2y p-value 0.7438247

Preop vs 5y p-value 0.4595302

6w vs 2y p-value 0.7594724

2y vs 5y p-value 0.6457166

6w vs 5y p-value 0.4714235

Pelvic Tilt - mean All

[1] 21.8733

[1] 21.0/33

L4

[1] 17.06357

L5

[1] 21.65564

L4 vs L5 p-value:[1] 0.0149214

Pelvic Tilt - sd

All

[1] 10.85282

L4

[1] 7.940203

L5

[1] 8.607439

```
6W. Pelvic Tilt - mean
All
[1] 18.00204
[1] 14.51103
L5
[1] 20.87737
L4 vs L5 p-value:[1] 0.001285324
6W. Pelvic Tilt - sd
All
[1] 9.452979
L4
[1] 8.28819
L5
[1] 8.405796
6M. Pelvic Tilt - mean
All
[1] 19.46394
[1] 14.35098
[1] 21.22857
L4 vs L5 p-value:[1] 0.0003621315
6M. Pelvic Tilt - sd
All
[1] 9.712063
L4
[1] 8.201262
[1] 7.803038
1Y. Pelvic Tilt - mean
[1] 19.39412
[1] 15.79333
L5
[1] 21.00568
```

L4 vs L5 p-value:[1] 0.007487864

```
1Y. Pelvic Tilt - sd
All
[1] 10.12876
[1] 9.02875
L5
[1] 7.446546
2Y. Pelvic Tilt - mean
All
[1] 19.27738
L4
[1] 14.11882
L5
[1] 21.49438
L4 vs L5 p-value:[1] 0.0002880703
2Y. Pelvic Tilt - sd
All
[1] 9.352162
L4
[1] 8.147682
[1] 7.468692
5Y. Pelvic Tilt - mean
All
[1] 21.76769
L4
[1] 16.329
L5
[1] 24.74455
L4 vs L5 p-value:[1] 0.002866542
5Y. Pelvic Tilt - sd
All
[1] 9.708017
L4
[1] 9.51867
L5
[1] 7.214661
```

Pelvic Tilt tests all Preop vs 6w p-value

1.187258e-06

Preop vs 2y p-value 0.001479425

Preop vs 5y p-value 0.916233

6w vs 2y p-value 0.09717174

2y vs 5y p-value 0.01212081

6w vs 5y p-value 0.0001245306

Pelvic Tilt tests L4 Preop vs 6w p-value 0.1615846

Preop vs 2y p-value 0.117574

Preop vs 5y p-value 0.7667899

6w vs 2y p-value 0.8393235

2y vs 5y p-value 0.3912525

6w vs 5y p-value 0.4735358

Pelvic Tilt tests L5 Preop vs 6w p-value 0.6892586

Preop vs 2y p-value 0.9329098

Preop vs 5y p-value 0.1410062

6w vs 2y p-value 0.7461256

2y vs 5y p-value 0.1156544

6w vs 5y p-value 0.06580587

```
Sacral Slope - mean
All
[1] 32.49831
L4
[1] 31.70881
L5
[1] 31.56974
L4 vs L5 p-value:[1] 0.9493803
Sacral Slope - sd
All
[1] 11.24453
L4
[1] 9.974521
L5
[1] 9.548232
6W. Sacral Slope - mean
All
[1] 36.01872
[1] 33.65385
[1] 31.66211
L4 vs L5 p-value:[1] 0.3513935
6W. Sacral Slope - sd
All
[1] 10.21491
L4
[1] 9.979686
[1] 8.623344
6M. Sacral Slope - mean
All
[1] 34.38332
[1] 33.31073
[1] 30.08571
L4 vs L5 p-value:[1] 0.1211204
```

```
6M. Sacral Slope - sd
All
[1] 10.05546
[1] 8.97487
L5
[1] 8.899344
1Y. Sacral Slope - mean
All
[1] 34.23707
L4
[1] 32.18385
[1] 31.59378
L4 vs L5 p-value:[1] 0.7688873
1Y. Sacral Slope - sd
All
[1] 9.649275
L4
[1] 8.967879
[1] 8.474762
2Y. Sacral Slope - mean
All
[1] 34.55096
[1] 33.53853
L5
[1] 31.88812
L4 vs L5 p-value:[1] 0.4866861
2Y. Sacral Slope - sd
All
[1] 10.43826
L4
[1] 10.43142
L5
[1] 8.696084
5Y. Sacral Slope - mean
```

All

[1] 33.01965

L4

[1] 30.934

L5

[1] 30.13818

L4 vs L5 p-value:[1] 0.8072471

5Y. Sacral Slope - sd

All

[1] 10.79392

T.4

[1] 11.35501

L5

[1] 9.429717

Sacral Slope tests all Preop vs 6w p-value 2.495369e-05

Preop vs 2y p-value 0.01868629

Preop vs 5y p-value 0.632141

6w vs 2y p-value 0.08166943

2y vs 5y p-value 0.1639381

6w vs 5y p-value 0.00523052

Sacral Slope tests L4 Preop vs 6w p-value 0.3833419

Preop vs 2y p-value 0.4407815

Preop vs 5y p-value 0.7957267

6w vs 2y p-value 0.9617974

2y vs 5y p-value 0.4070707

6w vs 5y p-value 0.3709415

Sacral Slope tests L5 Preop vs 6w p-value 0.9648205

Preop vs 2y p-value 0.8844373

Preop vs 5y p-value 0.5755429

6w vs 2y p-value 0.9137375

2y vs 5y p-value 0.4930107

6w vs 5y p-value 0.5372656

RLL - mean

All

[1] -18.99688

T.4

[1] -11.80976

L5

[1] -20.19359

L4 vs L5 p-value:[1] 0.01887427

RLL - sd

All

[1] 20.39037

L4

[1] 16.40531

L5

[1] 15.06803

6W. RLL - mean

All

[1] -11.17656

L4

[1] -9.891026

L5

[1] -16.46579

```
6W. RLL - sd
```

All

[1] 12.92636

L4

[1] 11.07746

L5

[1] 11.42234

6M. RLL - mean

All

[1] -11.42286

L4

[1] -8.747805

L5

[1] -15.93886

L4 vs L5 p-value:[1] 0.007415021

6M. RLL - sd

All

[1] 12.9312

L4

[1] 11.13418

1.5

[1] 11.50621

1Y. RLL - mean

All

[1] -11.34216

L4

[1] -8.200789

L5

[1] -14.17027

L4 vs L5 p-value:[1] 0.02978466

1Y. RLL - sd

All

[1] 13.81769

L4

[1] 12.04899

L5

[1] 11.2711

2Y. RLL - mean

All

[1] -10.62964

L4

[1] -5.754706

L5

[1] -13.0075

L4 vs L5 p-value:[1] 0.0270933

2Y. RLL - sd

All

[1] 14.04272

L4

[1] 12.26523

L5

[1] 13.67183

5Y. RLL - mean

All

[1] -12.17483

L4

[1] -9.955

L5

[1] -17.49227

L4 vs L5 p-value:[1] 0.07973966

5Y. RLL - sd

All

[1] 13.83349

L4

[1] 13.58576

L5

[1] 13.54271

RLL tests all Preop vs 6w p-value 4.717714e-09

Preop vs 2y p-value 2.628085e-09

Preop vs 5y p-value 2.446303e-05

6w vs 2y p-value 0.6209054

2y vs 5y p-value

6w vs 5y p-value 0.4643248

RLL tests L4 Preop vs 6w p-value 0.5367176

Preop vs 2y p-value 0.06984195

Preop vs 5y p-value 0.6413212

6w vs 2y p-value 0.1374585

2y vs 5y p-value 0.2630089

6w vs 5y p-value 0.9856025

RLL tests L5 Preop vs 6w p-value 0.2245042

Preop vs 2y p-value 0.03904527

Preop vs 5y p-value 0.4763129

6w vs 2y p-value 0.2606083

2y vs 5y p-value 0.2397934

6w vs 5y p-value 0.7664089

Global Tilt - mean All

[1] 26.34575

L4 [1] 17.63976

īБ

[1] 24.19632

```
Global Tilt - sd
All
[1] 17.64465
[1] 12.34508
L5
[1] 13.70465
6W. Global Tilt - mean
All
[1] 18.63569
L4
[1] 13.84784
L5
[1] 23.40353
L4 vs L5 p-value:[1] 0.0005703284
6W. Global Tilt - sd
All
[1] 11.84771
L4
[1] 9.667217
[1] 12.23443
6M. Global Tilt - mean
All
[1] 20.27157
[1] 13.32641
L5
[1] 21.96154
L4 vs L5 p-value:[1] 0.002285445
6M. Global Tilt - sd
All
[1] 13.30891
L4
[1] 9.66809
L5
[1] 11.15878
1Y. Global Tilt - mean
```

All

```
[1] 20.78354
L4
[1] 13.13344
[1] 22.31621
L4 vs L5 p-value:[1] 0.0002698268
1Y. Global Tilt - sd
[1] 13.82404
L4
[1] 8.914528
L5
[1] 9.500308
2Y. Global Tilt - mean
All
[1] 20.92011
L4
[1] 12.20394
L5
[1] 22.95419
L4 vs L5 p-value:[1] 0.0001167054
2Y. Global Tilt - sd
All
[1] 13.80935
[1] 10.31782
L5
[1] 10.55854
5Y. Global Tilt - mean
All
[1] 24.63748
L4
[1] 15.1195
L5
[1] 28.79091
L4 vs L5 p-value:[1] 0.0005289438
5Y. Global Tilt - sd
All
```

[1] 14.71007

L4 [1] 12.44704 L5 [1] 10.77561

Global Tilt tests all Preop vs 6w p-value 2.128835e-10

Preop vs 2y p-value 3.027628e-05

Preop vs 5y p-value 0.276022

6w vs 2y p-value 0.03846796

2y vs 5y p-value 0.01361396

6w vs 5y p-value 3.122083e-05

Global Tilt tests L4 Preop vs 6w p-value 0.1305389

Preop vs 2y p-value 0.04140948

Preop vs 5y p-value 0.4596082

6w vs 2y p-value 0.4954686

2y vs 5y p-value 0.384842

6w vs 5y p-value 0.694201

Global Tilt tests L5 Preop vs 6w p-value 0.796135

Preop vs 2y p-value 0.6721474

Preop vs 5y p-value 0.1565911

```
6w vs 2y p-value
0.8742746
2y vs 5y p-value
0.0563147
6w vs 5y p-value
0.08965174
T1 Sagittal Tilt - mean
All
[1] -1.729953
L4
[1] -4.472193
L5
[1] -2.355407
L4 vs L5 p-value:[1] 0.07816866
T1 Sagittal Tilt - sd
All
[1] 6.117962
L4
[1] 3.573594
[1] 5.957362
6W. T1 Sagittal Tilt - mean
All
[1] -3.53703
[1] -3.997323
L5
[1] -1.82664
L4 vs L5 p-value:[1] 0.01879112
6W. T1 Sagittal Tilt - sd
All
[1] 4.011335
L4
[1] 3.317492
L5
[1] 3.807393
```

6M. T1 Sagittal Tilt - mean All

```
[1] -4.209195
L4
[1] -4.84305
[1] -3.8
L4 vs L5 p-value:[1] 0.196341
6M. T1 Sagittal Tilt - sd
[1] 4.287613
[1] 3.196408
L5
[1] 3.02765
1Y. T1 Sagittal Tilt - mean
All
[1] -3.857386
L4
[1] -5.003071
L5
[1] -4.236946
L4 vs L5 p-value:[1] 0.4966102
1Y. T1 Sagittal Tilt - sd
All
[1] 5.009467
[1] 4.604076
[1] 4.047984
2Y. T1 Sagittal Tilt - mean
All
[1] -3.641381
L4
[1] -5.162802
[1] -3.129655
L4 vs L5 p-value:[1] 0.01624378
2Y. T1 Sagittal Tilt - sd
All
```

[1] 4.489465

L4

[1] 3.128638

L5

[1] 3.387316

5Y. T1 Sagittal Tilt - mean

All

[1] -2.809025

T.4

[1] -5.113959

T.F

[1] -2.462173

L4 vs L5 p-value:[1] 0.009462915

5Y. T1 Sagittal Tilt - sd

A11

[1] 4.9292

L4

[1] 2.82748

1.5

[1] 3.463919

T1 Sagittal Tilt tests all Preop vs 6w p-value 2.950444e-05

Preop vs 2y p-value 2.561922e-05

Preop vs 5y p-value 0.04732429

6w vs 2y p-value 0.7813274

2y vs 5y p-value 0.09785102

6w vs 5y p-value 0.1322135

T1 Sagittal Tilt tests L4 Preop vs 6w p-value 0.5723161

Preop vs 2y p-value 0.3950976

Preop vs 5y p-value 0.4607995

6w vs 2y p-value 0.1568297

2y vs 5y p-value 0.9538986

6w vs 5y p-value 0.2052346

T1 Sagittal Tilt tests L5 Preop vs 6w p-value 0.6672455

Preop vs 2y p-value 0.5177708

Preop vs 5y p-value 0.932823

6w vs 2y p-value 0.156091

2y vs 5y p-value 0.4890376

6w vs 5y p-value 0.527774

Thoracolumbar L2-T10 - mean All

[1] 10.14681

L4

[1] 24.8219

L5

[1] 11.1527

L4 vs L5 p-value:[1] 0.004158729

Thoracolumbar L2-T10 - sd

All

[1] 20.63143

L4

[1] 19.97069

L5

[1] 20.96152

6W. Thoracolumbar L2-T10 - mean All

```
[1] 4.745068
L4
[1] 1.499706
[1] 3.383529
L4 vs L5 p-value:[1] 0.534681
6W. Thoracolumbar L2-T10 - sd
[1] 12.08934
L4
[1] 14.33
L5
[1] 10.19954
6M. Thoracolumbar L2-T10 - mean
All
[1] 4.954896
L4
[1] 3.242286
L5
[1] 5.307692
L4 vs L5 p-value:[1] 0.4708201
6M. Thoracolumbar L2-T10 - sd
All
[1] 12.18589
[1] 10.87131
L5
[1] 11.06623
1Y. Thoracolumbar L2-T10 - mean
All
[1] 5.369965
L4
[1] 4.328571
[1] 6.911379
L4 vs L5 p-value:[1] 0.4209241
1Y. Thoracolumbar L2-T10 - sd
All
[1] 12.62142
```

```
L4
[1] 10.26261
L5
[1] 14.36811
2Y. Thoracolumbar L2-T10 - mean
All
[1] 5.79412
[1] 4.019091
[1] 7.697037
L4 vs L5 p-value:[1] 0.2159588
2Y. Thoracolumbar L2-T10 - sd
All
[1] 12.6719
L4
[1] 10.73945
[1] 11.77143
5Y. Thoracolumbar L2-T10 - mean
All
[1] 6.982676
L4
[1] 5.652
L5
[1] 9.366364
L4 vs L5 p-value:[1] 0.3128641
5Y. Thoracolumbar L2-T10 - sd
All
[1] 13.96373
[1] 11.30167
[1] 12.24836
Thoracolumbar L2-T10 tests all
Preop vs 6w p-value
5.465972e-05
```

Preop vs 2y p-value

Preop vs 5y p-value 0.05238359

6w vs 2y p-value 0.3165752

2y vs 5y p-value 0.3984091

6w vs 5y p-value 0.1027737

Thoracolumbar L2-T10 tests L4 Preop vs 6w p-value 9.798708e-08

Preop vs 2y p-value 2.345396e-07

Preop vs 5y p-value 1.110709e-05

6w vs 2y p-value 0.4177206

2y vs 5y p-value 0.6064043

6w vs 5y p-value 0.2446928

Thoracolumbar L2-T10 tests L5 Preop vs 6w p-value 0.04948556

Preop vs 2y p-value 0.4054651

Preop vs 5y p-value 0.6810473

6w vs 2y p-value 0.1378671

2y vs 5y p-value 0.6315653

6w vs 5y p-value 0.06436168

RSA - mean All

```
[1] 15.35214
L4
[1] 9.160714
[1] 13.82947
L4 vs L5 p-value:[1] 0.07113172
RSA - sd
All
[1] 15.39231
[1] 11.44371
L5
[1] 11.35332
6W. RSA - mean
All
[1] 7.573828
L4
[1] 5.672703
L5
[1] 13.09794
L4 vs L5 p-value:[1] 0.001320824
6W. RSA - sd
All
[1] 9.296028
L4
[1] 8.845212
L5
[1] 9.739833
6M. RSA - mean
All
[1] 9.327491
L4
[1] 5.333846
[1] 12.51846
L4 vs L5 p-value:[1] 0.0009051997
```

6M. RSA - sd

[1] 10.52038

All

```
L4
```

[1] 8.023078

L5

[1] 8.105674

1Y. RSA - mean

All

[1] 9.847893

L4

[1] 5.166562

1.5

[1] 11.98862

L4 vs L5 p-value:[1] 0.0005692798

1Y. RSA - sd

All

[1] 10.94623

L4

[1] 7.363837

1.5

[1] 7.24227

2Y. RSA - mean

All

[1] 10.08882

L4

[1] 4.159091

L5

[1] 12.57226

L4 vs L5 p-value:[1] 0.0002771497

2Y. RSA - sd

All

[1] 11.55025

L4

[1] 9.348516

L5

[1] 8.087446

5Y. RSA - mean

All

[1] 13.34259

L4

[1] 7.435

L5 [1] 17.44682

L4 vs L5 p-value:[1] 0.003816685

5Y. RSA - sd All [1] 12.68594 L4 [1] 11.85644

[1] 8.629911

RSA tests all Preop vs 6w p-value 4.959458e-14

Preop vs 2y p-value 2.441125e-06

Preop vs 5y p-value 0.1393535

6w vs 2y p-value 0.005318745

2y vs 5y p-value 0.01148679

6w vs 5y p-value 2.49948e-06

RSA tests L4 Preop vs 6w p-value 0.1314663

Preop vs 2y p-value 0.04077405

Preop vs 5y p-value 0.5912976

6w vs 2y p-value 0.4903931

2y vs 5y p-value 0.2999071

6w vs 5y p-value 0.5642791

RSA tests L5 Preop vs 6w p-value 0.7694667

Preop vs 2y p-value 0.5937744

Preop vs 5y p-value 0.1704213

6w vs 2y p-value 0.8130623

2y vs 5y p-value 0.04350424

6w vs 5y p-value 0.08640004

RPV - mean

All

[1] -8.395936

L4

[1] -6.15119

L5

[1] -8.532632

L4 vs L5 p-value:[1] 0.1099413

RPV - sd

All

[1] 9.093878

L4

[1] 6.908871

L5

[1] 6.264781

6W. RPV - mean

All

[1] -4.861015

L4

[1] -3.793846

L5

[1] -8.367368

L4 vs L5 p-value:[1] 0.0036263

6W. RPV - sd

All

[1] 7.511161

```
L4
```

[1] 6.999124

L5

[1] 6.35249

6M. RPV - mean

All

[1] -6.401442

L4

[1] -3.881463

L5

[1] -9.307714

L4 vs L5 p-value:[1] 0.0004057546

6M. RPV - sd

All

[1] 7.674791

L4

[1] 6.447693

1.5

[1] 6.283058

1Y. RPV - mean

All

[1] -6.406026

L4

[1] -5.107692

L5

[1] -8.471622

L4 vs L5 p-value:[1] 0.02849249

1Y. RPV - sd

All

[1] 7.841029

L4

[1] 7.305366

L5

[1] 5.756638

2Y. RPV - mean

All

[1] -6.166797

L4

[1] -3.58

[1] -8.62625

L4 vs L5 p-value:[1] 0.001881745

2Y. RPV - sd

All

[1] 7.725126

L4

[1] 6.648097

1.5

[1] 5.989988

5Y. RPV - mean

All

[1] -8.30049

L4

[1] -5.95

L5

[1] -11.24227

L4 vs L5 p-value:[1] 0.02152269

5Y. RPV - sd

All

[1] 8.115654

L4

[1] 8.149249

L5

[1] 5.744464

RPV tests all Preop vs 6w p-value 5.931477e-08

Preop vs 2y p-value 0.0009951724

Preop vs 5y p-value 0.9094059

6w vs 2y p-value 0.03599535

2y vs 5y p-value 0.009801427

6w vs 5y p-value

2.251031e-05

RPV tests L4 Preop vs 6w p-value 0.131529

Preop vs 2y p-value 0.1038785

Preop vs 5y p-value 0.9246635

6w vs 2y p-value 0.8939752

2y vs 5y p-value 0.2780007

6w vs 5y p-value 0.3206989

RPV tests L5 Preop vs 6w p-value 0.9094009

Preop vs 2y p-value 0.9493303

Preop vs 5y p-value 0.09522309

6w vs 2y p-value 0.8614437

2y vs 5y p-value 0.1128968

6w vs 5y p-value 0.07880649

Quality of Life

ODI - Score (%) - mean All [1] 37.48494 L4 [1] 29.21951 L5

[1] 40.78947

```
ODI - Score (%) - sd
All
[1] 19.83824
[1] 17.69536
L5
[1] 17.82218
6M. ODI - Score (%) - mean
All
[1] 28.63578
L4
[1] 26.23684
L5
[1] 28.30303
L4 vs L5 p-value:[1] 0.5870559
6M. ODI - Score (%) - sd
All
[1] 17.87927
L4
[1] 15.95845
[1] 15.87152
1Y. ODI - Score (%) - mean
All
[1] 25.88644
[1] 18.89744
L5
[1] 29.65714
L4 vs L5 p-value:[1] 0.006735415
1Y. ODI - Score (%) - sd
All
[1] 18.01475
L4
[1] 15.16366
L5
[1] 17.66343
2Y. ODI - Score (%) - mean
```

All

```
[1] 27.66254
```

L4

[1] 21.02381

1.5

[1] 27.68421

L4 vs L5 p-value:[1] 0.1289585

2Y. ODI - Score (%) - sd

ΑΊΊ

[1] 21.22449

L4

[1] 18.02368

L5

[1] 20.52303

5Y. ODI - Score (%) - mean

All

[1] 28.8159

L4

[1] 23.65714

L5

[1] 29.46667

L4 vs L5 p-value:[1] 0.1752142

5Y. ODI - Score (%) - sd

All

[1] 21.56736

L4

[1] 17.70501

L5

[1] 16.42692

ODI - Score (%) tests all

Preop vs 6m p-value

4.234456e-09

Preop vs 2y p-value

1.669532e-09

Preop vs 5y p-value

1.3154e-06

6m vs 2y p-value

0.531449

2y vs 5y p-value

6w vs 5y p-value 3.523138e-53

ODI - Score (%) tests L4 Preop vs 6m p-value 0.4333096

Preop vs 2y p-value 0.03972036

Preop vs 5y p-value 0.1763392

6m vs 2y p-value 0.1739929

2y vs 5y p-value 0.5212302

6w vs 5y p-value 7.902646e-13

ODI - Score (%) tests L5 Preop vs 6m p-value 0.0003512974

Preop vs 2y p-value 0.004010115

Preop vs 5y p-value 0.00842788

6m vs 2y p-value 0.7324842

2y vs 5y p-value 0.6920722

6w vs 5y p-value 4.821621e-14

SRS22 - Function / Activity - mean All

[1] 3.09

L4

[1] 3.277561

[1] 2.873158

```
SRS22 - Function / Activity - sd
All
[1] 0.8620615
[1] 0.8726792
L5
[1] 0.7164104
6M. SRS22 - Function / Activity - mean
All
[1] 3.240662
L4
[1] 3.219474
[1] 3.070937
L4 vs L5 p-value:[1] 0.4605215
6M. SRS22 - Function / Activity - sd
All
[1] 0.8076042
T.4
[1] 0.8524589
[1] 0.8181977
1Y. SRS22 - Function / Activity - mean
All
[1] 3.389371
[1] 3.669231
L5
[1] 3.11
L4 vs L5 p-value:[1] 0.009749303
1Y. SRS22 - Function / Activity - sd
All
[1] 0.8873405
L4
[1] 0.9122107
L5
[1] 0.8972015
2Y. SRS22 - Function / Activity - mean
All
```

```
[1] 3.471677
T.4
[1] 3.707143
[1] 3.391667
L4 vs L5 p-value:[1] 0.1080432
2Y. SRS22 - Function / Activity - sd
[1] 0.9315734
L4
[1] 0.8907774
L5
[1] 0.8212795
5Y. SRS22 - Function / Activity - mean
All
[1] 3.479876
L4
[1] 3.582857
L5
[1] 3.38
L4 vs L5 p-value:[1] 0.3105073
5Y. SRS22 - Function / Activity - sd
All
[1] 0.9070044
L4
[1] 0.9040711
[1] 0.7046276
SRS22 - Function / Activity tests all
Preop vs 6m p-value
0.02173791
Preop vs 2y p-value
7.667214e-08
Preop vs 5y p-value
3.075026e-07
6m vs 2y p-value
0.0008535996
```

2y vs 5y p-value

6w vs 5y p-value 8.598641e-14

SRS22 - Function / Activity tests L4 Preop vs 6m p-value 0.7656171

Preop vs 2y p-value 0.02926171

Preop vs 5y p-value 0.1403798

6m vs 2y p-value 0.01448075

2y vs 5y p-value 0.5472829

6w vs 5y p-value 5.237228e-14

SRS22 - Function / Activity tests L5 Preop vs 6m p-value 0.05918874

Preop vs 2y p-value 0.005170153

Preop vs 5y p-value 0.004423053

6m vs 2y p-value 0.3791198

2y vs 5y p-value 0.9502907

6w vs 5y p-value 9.494831e-14

SRS22 - Pain - mean

All

[1] 2.603033

L4

[1] 2.827561

L5

[1] 2.350789

```
SRS22 - Pain - sd
All
[1] 0.9655291
[1] 1.008833
L5
[1] 0.8824211
6M. SRS22 - Pain - mean
All
[1] 3.422145
L4
[1] 3.422368
[1] 3.369687
L4 vs L5 p-value:[1] 0.8011964
6M. SRS22 - Pain - sd
All
[1] 0.8962788
L4
[1] 0.8597373
[1] 0.8757577
1Y. SRS22 - Pain - mean
All
[1] 3.561038
[1] 3.845385
L5
[1] 3.397143
L4 vs L5 p-value:[1] 0.05004134
1Y. SRS22 - Pain - sd
All
[1] 0.972682
L4
[1] 0.9379649
L5
[1] 0.9894995
2Y. SRS22 - Pain - mean
```

All

```
[1] 3.492236
```

L4

[1] 3.780952

L5

[1] 3.309722

L4 vs L5 p-value:[1] 0.04307255

2Y. SRS22 - Pain - sd

 $\Gamma \Gamma \Lambda$

[1] 1.096029

T.4

[1] 0.9999361

L5

[1] 1.014665

5Y. SRS22 - Pain - mean

All

[1] 3.342946

L4

[1] 3.47

L5

[1] 3.083871

L4 vs L5 p-value:[1] 0.1354012

5Y. SRS22 - Pain - sd

All

[1] 1.129902

L4

[1] 1.058523

L5

[1] 1.0141

SRS22 - Pain tests all Preop vs 6m p-value 8.395163e-27

Preop vs 2y p-value 6.671258e-26

Preop vs 5y p-value 1.989905e-15

6m vs 2y p-value 0.3762109

2y vs 5y p-value

6w vs 5y p-value 1.179657e-13

SRS22 - Pain tests L4 Preop vs 6m p-value 0.005996365

Preop vs 2y p-value 4.344815e-05

Preop vs 5y p-value 0.008788428

6m vs 2y p-value 0.08866341

2y vs 5y p-value 0.1923711

6w vs 5y p-value 6.33769e-14

SRS22 - Pain tests L5 Preop vs 6m p-value 9.020891e-07

Preop vs 2y p-value 4.950859e-05

Preop vs 5y p-value 0.002440434

6m vs 2y p-value 0.6089766

2y vs 5y p-value 0.3669379

6w vs 5y p-value 1.699573e-13

SRS22 - Self image / Appearance - mean

A11

[1] 2.383033

L4

[1] 2.590244

L5

[1] 2.342105

```
SRS22 - Self image / Appearance - sd
All
[1] 0.7442742
[1] 0.824562
L5
[1] 0.709256
6M. SRS22 - Self image / Appearance - mean
All
[1] 3.486877
L4
[1] 3.7
[1] 3.498438
L4 vs L5 p-value:[1] 0.2922336
6M. SRS22 - Self image / Appearance - sd
All
[1] 0.8323526
T.4
[1] 0.6803219
[1] 0.8723794
1Y. SRS22 - Self image / Appearance - mean
All
[1] 3.532013
[1] 3.818718
L5
[1] 3.442857
L4 vs L5 p-value:[1] 0.05463313
1Y. SRS22 - Self image / Appearance - sd
All
[1] 0.7925686
L4
[1] 0.7421029
L5
[1] 0.8931226
2Y. SRS22 - Self image / Appearance - mean
All
```

```
[1] 3.433385
L4
[1] 3.759524
[1] 3.461111
L4 vs L5 p-value:[1] 0.1454374
2Y. SRS22 - Self image / Appearance - sd
[1] 0.9315575
L4
[1] 0.8653378
L5
[1] 0.9156661
5Y. SRS22 - Self image / Appearance - mean
All
[1] 3.357884
L4
[1] 3.6
L5
[1] 3.269355
L4 vs L5 p-value:[1] 0.1483662
5Y. SRS22 - Self image / Appearance - sd
All
[1] 0.9422712
L4
[1] 0.9113661
[1] 0.9203874
SRS22 - Self image / Appearance tests all
Preop vs 6m p-value
1.036098e-57
Preop vs 2y p-value
5.696223e-48
Preop vs 5y p-value
2.671698e-34
6m vs 2y p-value
0.4441466
```

2y vs 5y p-value

6w vs 5y p-value 1.159136e-13

SRS22 - Self image / Appearance tests L4 Preop vs 6m p-value 6.275197e-09

Preop vs 2y p-value 1.439882e-08

Preop vs 5y p-value 3.704997e-06

6m vs 2y p-value 0.7320808

2y vs 5y p-value 0.4365176

6w vs 5y p-value 4.994366e-14

SRS22 - Self image / Appearance tests L5 Preop vs 6m p-value 1.377997e-12

Preop vs 2y p-value 1.651947e-07

Preop vs 5y p-value 2.457011e-05

6m vs 2y p-value 0.2092055

2y vs 5y p-value 0.3972415

6w vs 5y p-value 1.113874e-13

SRS22 - Mental health - mean

All

[1] 3.15024

L4

[1] 3.19878

L5

[1] 3.215789

```
SRS22 - Mental health - sd
All
[1] 0.854942
[1] 0.8176558
L5
[1] 0.8591405
6M. SRS22 - Mental health - mean
All
[1] 3.54041
L4
[1] 3.573684
[1] 3.55625
L4 vs L5 p-value:[1] 0.9320568
6M. SRS22 - Mental health - sd
All
[1] 0.8480854
L4
[1] 0.8149562
[1] 0.8765539
1Y. SRS22 - Mental health - mean
All
[1] 3.592138
[1] 3.75641
L5
[1] 3.505714
L4 vs L5 p-value:[1] 0.2197001
1Y. SRS22 - Mental health - sd
All
[1] 0.8220451
L4
[1] 0.802232
L5
[1] 0.9251209
2Y. SRS22 - Mental health - mean
```

All

```
[1] 3.497205
```

L4

[1] 3.633333

L5

[1] 3.570833

L4 vs L5 p-value:[1] 0.7500067

2Y. SRS22 - Mental health - sd

 $\Gamma \Gamma \Lambda$

[1] 0.9377551

L4

[1] 0.8677604

L5

[1] 0.8540973

5Y. SRS22 - Mental health - mean

All

[1] 3.532365

L4

[1] 3.668571

L5

[1] 3.432258

L4 vs L5 p-value:[1] 0.2864843

5Y. SRS22 - Mental health - sd

All

[1] 0.8906518

L4

[1] 0.9517079

L5

[1] 0.8344208

 $\ensuremath{\mathsf{SRS22}}$ - Mental health tests all Preop vs 6m p-value

8.276809e-09

Preop vs 2y p-value

9.80005e-07

Preop vs 5y p-value

3.57605e-07

6m vs 2y p-value

0.5414079

2y vs 5y p-value

6w vs 5y p-value 7.566897e-14

SRS22 - Mental health tests L4 Preop vs 6m p-value 0.04483037

Preop vs 2y p-value 0.02128555

Preop vs 5y p-value 0.02531553

6m vs 2y p-value 0.7520899

2y vs 5y p-value 0.8667876

6w vs 5y p-value 4.100434e-14

SRS22 - Mental health tests L5 Preop vs 6m p-value 0.06643112

Preop vs 2y p-value 0.07894434

Preop vs 5y p-value 0.2941027

6m vs 2y p-value 0.9883327

2y vs 5y p-value 0.5049983

6w vs 5y p-value 7.74375e-14

 ${\tt SRS22}$ - ${\tt SRS}$ Subtotal score - ${\tt mean}$

All

[1] 2.811772

L4

[1] 2.97878

L5

[1] 2.71

L4 vs L5 p-value:[1] 0.09354685

```
SRS22 - SRS Subtotal score - sd
All
[1] 0.6943877
[1] 0.7600434
L5
[1] 0.6454288
6M. SRS22 - SRS Subtotal score - mean
All
[1] 3.423438
L4
[1] 3.479474
[1] 3.373125
L4 vs L5 p-value:[1] 0.5144035
6M. SRS22 - SRS Subtotal score - sd
All
[1] 0.6904808
L4
[1] 0.6596885
[1] 0.6896303
1Y. SRS22 - SRS Subtotal score - mean
All
[1] 3.522893
[1] 3.772821
L5
[1] 3.364286
L4 vs L5 p-value:[1] 0.02219664
1Y. SRS22 - SRS Subtotal score - sd
All
[1] 0.7326649
L4
[1] 0.7236456
L5
[1] 0.7731117
2Y. SRS22 - SRS Subtotal score - mean
All
```

```
[1] 3.473385
L4
[1] 3.723571
[1] 3.436667
L4 vs L5 p-value:[1] 0.111672
2Y. SRS22 - SRS Subtotal score - sd
[1] 0.8491084
[1] 0.7912658
L5
[1] 0.7790067
5Y. SRS22 - SRS Subtotal score - mean
All
[1] 3.414752
L4
[1] 3.580571
L5
[1] 3.289032
L4 vs L5 p-value:[1] 0.1461649
5Y. SRS22 - SRS Subtotal score - sd
All
[1] 0.8760138
L4
[1] 0.8484135
[1] 0.7615526
SRS22 - SRS Subtotal score tests all
Preop vs 6m p-value
5.666437e-27
Preop vs 2y p-value
2.051315e-25
Preop vs 5y p-value
```

1.769115e-17

0.4145993

6m vs 2y p-value

2y vs 5y p-value

77

6w vs 5y p-value 1.013087e-13

SRS22 - SRS Subtotal score tests L4 Preop vs 6m p-value 0.002451528

Preop vs 2y p-value 3.60342e-05

Preop vs 5y p-value 0.001881916

6m vs 2y p-value 0.1367817

2y vs 5y p-value 0.4502338

6w vs 5y p-value 5.440031e-14

SRS22 - SRS Subtotal score tests L5 Preop vs 6m p-value 2.169867e-06

Preop vs 2y p-value 4.559858e-05

Preop vs 5y p-value 0.001364516

6m vs 2y p-value 0.7999314

2y vs 5y p-value 0.4366109

6w vs 5y p-value 1.159859e-13

SF36 - PCS - mean

All

[1] 36.37405

L4

[1] 40.24878

L5

[1] 34.85053

L4 vs L5 p-value:[1] 0.008001579

```
SF36 - PCS - sd
```

All

[1] 9.34191

L4

[1] 9.027021

L5

[1] 8.592285

6M. SF36 - PCS - mean

All

[1] 40.33466

L4

[1] 42.96757

L5

[1] 38.68706

L4 vs L5 p-value:[1] 0.02049346

6M. SF36 - PCS - sd

All

[1] 9.018023

L4

[1] 7.653854

L5

[1] 7.541766

1Y. SF36 - PCS - mean

All

[1] 41.90603

L4

[1] 46.17949

L5

[1] 39.66743

L4 vs L5 p-value:[1] 0.005079299

1Y. SF36 - PCS - sd

All

[1] 9.910487

L4

[1] 9.565238

L5

[1] 9.764051

2Y. SF36 - PCS - mean

All

[1] 41.89387

L4

[1] 45.3422

L5

[1] 41.13658

L4 vs L5 p-value:[1] 0.05009991

2Y. SF36 - PCS - sd

 $\Gamma \Gamma \Lambda$

[1] 10.37739

L4

[1] 10.00703

L5

[1] 8.765236

5Y. SF36 - PCS - mean

All

[1] 41.28809

L4

[1] 43.545

L5

[1] 40.62467

L4 vs L5 p-value:[1] 0.185434

5Y. SF36 - PCS - sd

All

[1] 11.27507

L4

[1] 9.059528

L5

[1] 8.381923

SF36 - PCS tests all Preop vs 6m p-value 7.448317e-08

Preop vs 2y p-value 3.406167e-12

Preop vs 5y p-value 7.205896e-08

6m vs 2y p-value 0.04488095

2y vs 5y p-value

6w vs 5y p-value 2.220629e-54

SF36 - PCS tests L4 Preop vs 6m p-value 0.154334

Preop vs 2y p-value 0.01781341

Preop vs 5y p-value 0.1206343

6m vs 2y p-value 0.2403903

2y vs 5y p-value 0.417447

6w vs 5y p-value 2.17239e-35

SF36 - PCS tests L5 Preop vs 6m p-value 4.836783e-05

Preop vs 2y p-value 0.002306935

Preop vs 5y p-value 0.00697263

6m vs 2y p-value 0.3381004

2y vs 5y p-value 0.8072016

6w vs 5y p-value 3.339344e-32

SF36 - MCS - mean

All

[1] 42.71466

L4

[1] 41.88659

L5

[1] 44.91132

L4 vs L5 p-value:[1] 0.2671804

```
SF36 - MCS - sd
All
[1] 11.73206
[1] 11.8
L5
[1] 12.21496
6M. SF36 - MCS - mean
All
[1] 46.86537
L4
[1] 48.23703
L5
[1] 47.58147
L4 vs L5 p-value:[1] 0.8190889
6M. SF36 - MCS - sd
All
[1] 11.90581
L4
[1] 11.54626
[1] 12.43532
1Y. SF36 - MCS - mean
All
[1] 47.37006
[1] 50.80026
L5
[1] 47.00257
L4 vs L5 p-value:[1] 0.1710523
1Y. SF36 - MCS - sd
All
[1] 11.50197
L4
[1] 9.864652
L5
[1] 13.26289
```

2Y. SF36 - MCS - mean All

[1] 47.01148

L4

[1] 49.38488

L5

[1] 49.08342

L4 vs L5 p-value:[1] 0.905938

2Y. SF36 - MCS - sd

A 1 1

[1] 12.04287

T.4

[1] 10.33326

L5

[1] 12.1099

5Y. SF36 - MCS - mean

All

[1] 47.45658

L4

[1] 50.27853

L5

[1] 47.63367

L4 vs L5 p-value:[1] 0.3406633

5Y. SF36 - MCS - sd

All

[1] 11.34882

L4

[1] 10.39116

L5

[1] 11.49529

SF36 - MCS tests all Preop vs 6m p-value 1.116871e-05

Preop vs 2y p-value 5.388458e-06

Preop vs 5y p-value 1.783548e-06

6m vs 2y p-value 0.8787294

2y vs 5y p-value

6w vs 5y p-value 1.791352e-58

SF36 - MCS tests L4 Preop vs 6m p-value 0.0188427

Preop vs 2y p-value 0.003017321

Preop vs 5y p-value 0.001627255

6m vs 2y p-value 0.646381

2y vs 5y p-value 0.7112284

6w vs 5y p-value 5.544388e-34

SF36 - MCS tests L5 Preop vs 6m p-value 0.229428

Preop vs 2y p-value 0.1391076

Preop vs 5y p-value 0.3491436

6m vs 2y p-value 0.757567

2y vs 5y p-value 0.6157796

6w vs 5y p-value 2.171426e-26

Surgery

Total Operative Blood Loss st1+st2+st3 - mean All
[1] 1541.899
L4

[1] 1102.821

L5

[1] 1356.528

```
L4 vs L5 p-value:[1] 0.2336043
Total Operative Blood Loss st1+st2+st3 - sd
[1] 1257.928
L4
[1] 778.6153
[1] 1021.535
Total surgical time st1+st2+st3 - mean
All
[1] 321.9366
L4
[1] 268.2143
[1] 352.0769
L4 vs L5 p-value:[1] 0.03805626
Total surgical time st1+st2+st3 - sd
[1] 163.1972
[1] 135.0524
L5
[1] 210.2413
Number of Posterior Instrumented Levels - mean
All
[1] 9.724242
L4
[1] 9.333333
L5
[1] 8.615385
L4 vs L5 p-value:[1] 0.4527274
Number of Posterior Instrumented Levels - sd
All
[1] 4.006797
L4
[1] 3.961194
L5
[1] 4.551549
```

```
Pelvic fixation - table
All
variable
No Yes
214 134
L4
variable
No
42
L5
variable
No
39
Pelvic fixation - proportion
All
variable
              Yes
      No
0.6149425 0.3850575
L4
variable
No
1
L5
variable
No
1
Surgical Approach - table
All
variable
         Anterior-Posterior
                                              Posterior
         Posterior-Anterior Posterior-Posterior
Posterior-Posterior-Anterior
L4
variable
Posterior
      42
L5
variable
Anterior-Posterior
                           Posterior Posterior-Posterior
                              37
Surgical Approach - proportion
All
variable
         Anterior-Posterior
                                             Posterior
                0.011494253
                                            0.945402299
```

```
Posterior-Anterior
                                      Posterior-Posterior
                 0.031609195
                                              0.008620690
Posterior-Posterior-Anterior
                 0.002873563
L4
variable
Posterior
L5
variable
                             Posterior Posterior-Posterior
 Anterior-Posterior
        0.02564103
                             0.94871795
                                                 0.02564103
Number of Interbody Fusions - mean
All
[1] 0.8477011
L4
[1] 0.3095238
L5
[1] 1.025641
L4 vs L5 p-value:[1] 0.004462937
Number of Interbody Fusions - sd
All
[1] 1.184589
L4
[1] 0.6043781
L5
[1] 1.385777
Decompression - table
All
variable
No Yes
261 87
L4
variable
No Yes
33
L5
variable
No Yes
26 13
Decompression - proportion
All
variable
```

No Yes

```
0.75 0.25
L4
variable
       No
               Yes
0.7857143 0.2142857
L5
variable
                 Yes
       No
0.6666667 0.3333333
Interbody Fusion - table
All
variable
No Yes
193 155
L4
variable
No Yes
32 10
L5
variable
No Yes
19 20
{\tt Interbody}\ {\tt Fusion}\ {\tt -}\ {\tt proportion}
All
variable
       No
                Yes
0.5545977 0.4454023
L4
variable
                Yes
       No
0.7619048 0.2380952
variable
       No
                Yes
0.4871795 0.5128205
Osteotomy - table
All
variable
No Yes
178 170
L4
variable
No Yes
23 19
L5
variable
```

No Yes

25 14

3CO - table All variable No Yes 295 53 L4 variable No Yes 37 5 variable No Yes 33 6 3CO - proportion All variable Yes No 0.8477011 0.1522989 L4 variable Yes No 0.8809524 0.1190476 L5 variable No Yes 0.8461538 0.1538462

Reinterventions

group reiqs patients total
1: all 280 105 348
2: L4 9 7 42
3: L5 40 12 39

${\bf Impacts}$

	Complication	Impact al	ll_num	all_patients	L4_num L4_pati	ents	L5_num
1:		0	1	1	0	0	0
2:	Adverse	Event	9	7	0	0	2
3:	Major Compli	cation	329	116	14	7	49
4:	Minor Compli	cation	287	169	21	15	28
	L5_patients t	otal_all	L4 L5	p_val_1_total	p_val_2_total	p_va	1_1_2
1:	0	348	42 39	1.000000e+00	1.000000e+00	1.00	00000
2:	1	348	42 39	1.562500e-02	7.031250e-02	2 1.00	00000
3:	14	348	42 39	1.420009e-26	3.643734e-21	0.18	392471
4:	19	348	42 39	3.568593e-34	2.976574e-31	0.60	75914

Categories

	Cat	egory of the	e compli	catio	n all_num	all_patients	L4_num	L4_patients
1:	Central	neurologic	complic	ation	s 2	2	0	0
2:			Iatr	ogeni	c 75	64	10	8
3:		Infectious	complic	ation	s 39	30	3	3
4:		Mechanical	complic	ation	s 284	133	11	7
5:		Other	complic	ation	s 145	87	9	5
6:				Pai	n 22	21	0	0
7:	Peripheral	neurologic	complic	ation	s 59	47	2	2
	L5_num L5_	patients tot	cal_all	L4 L5	p_val_1_t	total p_val_2	_total	p_val_1_2
1:	0	0	348	42 39	5.000000	0e-01 5.0000	00e-01 1	1.00000000
2:	13	11	348	42 39	5.765519	9e-12 3.1085	22e-10 (0.64760590
3:	11	7	348	42 39	1.401175	5e-06 1.91076	64e-04 (34375000
4:	28	13	348	42 39	2.717864	4e-31 3.14720	09e-26 (.26317596
5:	17	14	348	42 39	2.104348	Be-20 4.7987	17e-14 (0.06356812
6:	4	3	348	42 39	9.536743	Be-07 2.7716	16e-04 (25000000
7:	6	5	348	42 39	4.355627	7e-12 1.28482	23e-09 (.45312500