

5y complications analysis

```
xls_path <- '../..data/ESSG Extraction_DEC_OP_ NON DePuy v7.xlsx'
```

Filters

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

```
data_set %<>%  
  .[, 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`)]
```

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

Total Patients for the analysis: 708

Only Major Complications

All complications

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.255	0.106	-2.391	0.017
Age	-0.001	0.001	-0.919	0.358
GenderMale	0.053	0.040	1.334	0.183
Prior_Spine_SurgeryYes	0.186	0.038	4.901	0.000
ASA_classification	0.047	0.030	1.554	0.121
BMI_First_Visit	0.014	0.004	3.512	0.000
SiteBOR Op	0.023	0.053	0.425	0.671
SiteIST Op	-0.019	0.058	-0.325	0.745
SiteMAD Op	0.027	0.059	0.450	0.653
SiteZUR Op	-0.312	0.147	-2.119	0.034
'5y_vs_2y_effect'	-0.015	0.184	-0.084	0.933
Age:'5y_vs_2y_effect'	0.001	0.002	0.642	0.521
GenderMale:'5y_vs_2y_effect'	-0.110	0.074	-1.481	0.139
Prior_Spine_SurgeryYes:'5y_vs_2y_effect'	-0.156	0.068	-2.294	0.022
ASA_classification:'5y_vs_2y_effect'	-0.022	0.051	-0.433	0.665
BMI_First_Visit:'5y_vs_2y_effect'	-0.004	0.007	-0.545	0.586
SiteBOR Op:'5y_vs_2y_effect'	0.032	0.091	0.349	0.727

SiteIST Op: '5y_vs_2y_effect'	0.063	0.103	0.606	0.545
SiteMAD Op: '5y_vs_2y_effect'	0.002	0.097	0.022	0.983
SiteZUR Op: '5y_vs_2y_effect'	0.196	0.379	0.518	0.604

	Estimate	Std. Error	t value	
(Intercept)	-0.285	0.108	-2.627	
Age	-0.001	0.001	-0.463	
GenderMale	0.030	0.035	0.862	
Prior_Spine_SurgeryYes	0.133	0.034	3.956	
ASA_classification	0.040	0.025	1.635	
BMI_First_Visit	0.012	0.003	3.680	
SiteBOR Op	0.026	0.044	0.585	
SiteIST Op	-0.009	0.051	-0.177	
SiteMAD Op	0.020	0.048	0.424	
SiteZUR Op	-0.247	0.146	-1.700	
Global_Tilt	0.001	0.001	0.846	
Static_Major_curve_Cobb_angle	0.001	0.001	1.097	
'5y_vs_2y_effect'	-0.024	0.086	-0.275	
Global_Tilt: '5y_vs_2y_effect'	-0.001	0.002	-0.874	
Static_Major_curve_Cobb_angle: '5y_vs_2y_effect'	-0.001	0.001	-0.939	
	Pr(> t)			
(Intercept)	0.009			
Age	0.643			
GenderMale	0.389			
Prior_Spine_SurgeryYes	0.000			
ASA_classification	0.102			
BMI_First_Visit	0.000			
SiteBOR Op	0.559			
SiteIST Op	0.860			
SiteMAD Op	0.672			
SiteZUR Op	0.090			
Global_Tilt	0.398			
Static_Major_curve_Cobb_angle	0.273			
'5y_vs_2y_effect'	0.784			
Global_Tilt: '5y_vs_2y_effect'	0.383			
Static_Major_curve_Cobb_angle: '5y_vs_2y_effect'	0.348			

Impact of complications on followup

Only considering those with 2 FU

Call:

```
glm(formula = followup_5y ~ ., data = .)
```

Deviance Residuals:

Min	1Q	Median	3Q	Max
-0.8331	-0.4351	-0.1958	0.4811	0.8969

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	0.9557860	0.3708260	2.577	0.0103 *

Age	0.0034328	0.0021621	1.588	0.1132
GenderMale	-0.0557118	0.0627637	-0.888	0.3753
'Prior Spine Surgery'Yes	-0.0691293	0.0616419	-1.121	0.2628
'ASA classification'	-0.0582831	0.0457164	-1.275	0.2031
'BMI_First Visit'	-0.0074760	0.0059780	-1.251	0.2118
SiteBOR Op	-0.0204721	0.0817015	-0.251	0.8023
SiteIST Op	-0.0627938	0.0950169	-0.661	0.5091
SiteMAD Op	0.1286029	0.0893386	1.440	0.1508
SiteZUR Op	-0.1365679	0.2925398	-0.467	0.6409
'Global Tilt'	-0.0023137	0.0018109	-1.278	0.2021
'Static Major curve Cobb angle'	0.0014288	0.0012049	1.186	0.2364
'2Y. ODI - Score (%)'	-0.0008584	0.0027205	-0.316	0.7525
'2Y. SRS22 - SRS Subtotal score'	-0.0267429	0.0833292	-0.321	0.7484
'2Y. SF36 - MCS'	0.0007136	0.0033206	0.215	0.8300
'2Y. SF36 - PCS'	-0.0060212	0.0046483	-1.295	0.1960
complication_before_2yYes	-0.1593361	0.0664713	-2.397	0.0170 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for gaussian family taken to be 0.2363849)

Null deviance: 99.438 on 399 degrees of freedom
Residual deviance: 90.535 on 383 degrees of freedom
(65 observations deleted due to missingness)
AIC: 576.86

Number of Fisher Scoring iterations: 2

Complication Types

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.156	0.090	-1.734	0.083
Age	0.000	0.001	-0.051	0.959
GenderMale	0.069	0.033	2.066	0.039
Prior_Spine_SurgeryYes	0.105	0.032	3.277	0.001
ASA_classification	0.013	0.025	0.515	0.606
BMI_First_Visit	0.006	0.003	1.893	0.059
SiteBOR Op	0.056	0.045	1.254	0.210
SiteIST Op	-0.001	0.049	-0.022	0.983
SiteMAD Op	0.071	0.050	1.415	0.157
SiteZUR Op	-0.146	0.124	-1.177	0.239
'5y_vs_2y_effect'	-0.111	0.155	-0.717	0.474
Age:'5y_vs_2y_effect'	0.000	0.002	0.071	0.943
GenderMale:'5y_vs_2y_effect'	-0.123	0.063	-1.957	0.051
Prior_Spine_SurgeryYes:'5y_vs_2y_effect'	-0.085	0.057	-1.488	0.137
ASA_classification:'5y_vs_2y_effect'	0.001	0.043	0.024	0.981
BMI_First_Visit:'5y_vs_2y_effect'	0.003	0.006	0.570	0.569
SiteBOR Op:'5y_vs_2y_effect'	0.032	0.077	0.423	0.672
SiteIST Op:'5y_vs_2y_effect'	0.071	0.087	0.814	0.416
SiteMAD Op:'5y_vs_2y_effect'	-0.010	0.082	-0.125	0.900
SiteZUR Op:'5y_vs_2y_effect'	0.086	0.319	0.270	0.787

Estimate Std. Error t value

(Intercept)	-0.210	0.092	-2.280
Age	0.000	0.001	-0.257
GenderMale	0.040	0.029	1.343
Prior_Spine_SurgeryYes	0.072	0.029	2.524
ASA_classification	0.014	0.021	0.645
BMI_First_Visit	0.008	0.003	2.700
SiteBOR Op	0.065	0.038	1.726
SiteIST Op	0.029	0.043	0.663
SiteMAD Op	0.069	0.041	1.681
SiteZUR Op	-0.100	0.123	-0.807
Global_Tilt	0.001	0.001	0.924
Static_Major_curve_Cobb_angle	0.000	0.001	0.569
'5y_vs_2y_effect'	-0.004	0.073	-0.050
Global_Tilt:'5y_vs_2y_effect'	0.000	0.001	-0.237
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	-0.001	0.001	-0.670

Pr(>|t|)

(Intercept)	0.023
Age	0.797
GenderMale	0.180
Prior_Spine_SurgeryYes	0.012
ASA_classification	0.519
BMI_First_Visit	0.007
SiteBOR Op	0.085
SiteIST Op	0.508
SiteMAD Op	0.093
SiteZUR Op	0.420
Global_Tilt	0.356
Static_Major_curve_Cobb_angle	0.570
'5y_vs_2y_effect'	0.960
Global_Tilt:'5y_vs_2y_effect'	0.813
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	0.503

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.142	0.065	-2.199	0.028
Age	0.000	0.001	0.647	0.518
GenderMale	0.030	0.024	1.263	0.207
Prior_Spine_SurgeryYes	0.034	0.023	1.474	0.141
ASA_classification	0.025	0.018	1.362	0.174
BMI_First_Visit	0.006	0.002	2.640	0.008
SiteBOR Op	-0.043	0.032	-1.335	0.182
SiteIST Op	-0.036	0.035	-1.023	0.307
SiteMAD Op	-0.067	0.036	-1.854	0.064
SiteZUR Op	-0.152	0.089	-1.710	0.088
'5y_vs_2y_effect'	0.138	0.111	1.244	0.214
Age:'5y_vs_2y_effect'	0.000	0.001	-0.247	0.805
GenderMale:'5y_vs_2y_effect'	-0.034	0.045	-0.757	0.449
Prior_Spine_SurgeryYes:'5y_vs_2y_effect'	-0.023	0.041	-0.565	0.572
ASA_classification:'5y_vs_2y_effect'	-0.014	0.031	-0.461	0.645
BMI_First_Visit:'5y_vs_2y_effect'	-0.006	0.004	-1.405	0.160
SiteBOR Op:'5y_vs_2y_effect'	0.009	0.055	0.158	0.875
SiteIST Op:'5y_vs_2y_effect'	0.010	0.063	0.157	0.875
SiteMAD Op:'5y_vs_2y_effect'	0.035	0.059	0.592	0.554
SiteZUR Op:'5y_vs_2y_effect'	0.097	0.230	0.422	0.673

	Estimate	Std. Error	t value
(Intercept)	-0.110	0.064	-1.700
Age	0.001	0.001	1.123
GenderMale	0.020	0.021	0.958
Prior_Spine_SurgeryYes	0.029	0.020	1.459
ASA_classification	0.021	0.015	1.439
BMI_First_Visit	0.004	0.002	2.086
SiteBOR Op	-0.049	0.026	-1.847
SiteIST Op	-0.044	0.030	-1.451
SiteMAD Op	-0.062	0.029	-2.148
SiteZUR Op	-0.133	0.087	-1.534
Global_Tilt	0.000	0.001	0.281
Static_Major_curve_Cobb_angle	0.000	0.000	0.473
'5y_vs_2y_effect'	-0.011	0.051	-0.219
Global_Tilt:'5y_vs_2y_effect'	-0.001	0.001	-1.516
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	0.000	0.001	-0.201

Pr(>|t|)

(Intercept)	0.090
Age	0.262
GenderMale	0.339
Prior_Spine_SurgeryYes	0.145
ASA_classification	0.151
BMI_First_Visit	0.037
SiteBOR Op	0.065
SiteIST Op	0.147
SiteMAD Op	0.032
SiteZUR Op	0.125
Global_Tilt	0.779
Static_Major_curve_Cobb_angle	0.636
'5y_vs_2y_effect'	0.827
Global_Tilt:'5y_vs_2y_effect'	0.130
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	0.841

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.050	0.045	-1.119	0.264
Age	0.000	0.001	-0.463	0.644
GenderMale	-0.017	0.017	-1.047	0.295
Prior_Spine_SurgeryYes	0.050	0.016	3.146	0.002
ASA_classification	0.000	0.013	-0.010	0.992
BMI_First_Visit	0.004	0.002	2.271	0.024
SiteBOR Op	-0.018	0.022	-0.798	0.425
SiteIST Op	-0.017	0.024	-0.719	0.472
SiteMAD Op	0.008	0.025	0.325	0.745
SiteZUR Op	-0.067	0.062	-1.092	0.275
'5y_vs_2y_effect'	0.050	0.077	0.649	0.517
Age:'5y_vs_2y_effect'	0.000	0.001	0.267	0.790
GenderMale:'5y_vs_2y_effect'	0.017	0.031	0.560	0.576
Prior_Spine_SurgeryYes:'5y_vs_2y_effect'	-0.050	0.028	-1.760	0.079
ASA_classification:'5y_vs_2y_effect'	0.000	0.021	0.006	0.995
BMI_First_Visit:'5y_vs_2y_effect'	-0.004	0.003	-1.243	0.214
SiteBOR Op:'5y_vs_2y_effect'	0.018	0.038	0.464	0.643
SiteIST Op:'5y_vs_2y_effect'	0.017	0.043	0.403	0.687
SiteMAD Op:'5y_vs_2y_effect'	-0.008	0.041	-0.198	0.843
SiteZUR Op:'5y_vs_2y_effect'	0.067	0.158	0.424	0.672

	Estimate	Std. Error	t value
(Intercept)	0.001	0.044	0.020
Age	0.000	0.000	-0.856
GenderMale	-0.011	0.014	-0.770
Prior_Spine_SurgeryYes	0.024	0.014	1.717
ASA_classification	-0.002	0.010	-0.221
BMI_First_Visit	0.003	0.001	1.876
SiteBOR Op	-0.016	0.018	-0.864
SiteIST Op	-0.020	0.021	-0.969
SiteMAD Op	0.006	0.020	0.289
SiteZUR Op	-0.044	0.060	-0.738
Global_Tilt	0.001	0.000	1.500
Static_Major_curve_Cobb_angle	0.000	0.000	-1.412
'5y_vs_2y_effect'	-0.027	0.035	-0.777
Global_Tilt:'5y_vs_2y_effect'	-0.001	0.001	-1.282
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	0.000	0.001	0.852

Pr(>|t|)

(Intercept)	0.984
Age	0.392
GenderMale	0.441
Prior_Spine_SurgeryYes	0.086
ASA_classification	0.825
BMI_First_Visit	0.061
SiteBOR Op	0.388
SiteIST Op	0.333
SiteMAD Op	0.773
SiteZUR Op	0.461
Global_Tilt	0.134
Static_Major_curve_Cobb_angle	0.158
'5y_vs_2y_effect'	0.437
Global_Tilt:'5y_vs_2y_effect'	0.200
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	0.394

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.066	0.045	-1.483	0.138
Age	-0.001	0.001	-1.521	0.129
GenderMale	-0.024	0.017	-1.470	0.142
Prior_Spine_SurgeryYes	0.042	0.016	2.663	0.008
ASA_classification	0.006	0.013	0.506	0.613
BMI_First_Visit	0.005	0.002	2.752	0.006
SiteBOR Op	0.008	0.022	0.354	0.723
SiteIST Op	0.019	0.024	0.785	0.433
SiteMAD Op	0.013	0.025	0.513	0.608
SiteZUR Op	-0.041	0.062	-0.664	0.507
'5y_vs_2y_effect'	0.066	0.077	0.860	0.390
Age:'5y_vs_2y_effect'	0.001	0.001	0.877	0.381
GenderMale:'5y_vs_2y_effect'	0.024	0.031	0.786	0.432
Prior_Spine_SurgeryYes:'5y_vs_2y_effect'	-0.042	0.028	-1.489	0.137
ASA_classification:'5y_vs_2y_effect'	-0.006	0.021	-0.299	0.765
BMI_First_Visit:'5y_vs_2y_effect'	-0.005	0.003	-1.506	0.132
SiteBOR Op:'5y_vs_2y_effect'	-0.008	0.038	-0.206	0.837
SiteIST Op:'5y_vs_2y_effect'	-0.019	0.043	-0.439	0.661
SiteMAD Op:'5y_vs_2y_effect'	-0.013	0.041	-0.312	0.755
SiteZUR Op:'5y_vs_2y_effect'	0.041	0.159	0.258	0.797

	Estimate	Std. Error	t value
(Intercept)	-0.082	0.044	-1.841
Age	-0.001	0.000	-1.098
GenderMale	-0.012	0.014	-0.814
Prior_Spine_SurgeryYes	0.033	0.014	2.377
ASA_classification	0.004	0.010	0.386
BMI_First_Visit	0.003	0.001	2.178
SiteBOR Op	0.007	0.018	0.375
SiteIST Op	0.012	0.021	0.573
SiteMAD Op	0.003	0.020	0.142
SiteZUR Op	-0.035	0.060	-0.580
Global_Tilt	0.000	0.000	1.042
Static_Major_curve_Cobb_angle	0.001	0.000	2.395
'5y_vs_2y_effect'	0.017	0.035	0.484
Global_Tilt:'5y_vs_2y_effect'	-0.001	0.001	-1.022
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	-0.001	0.001	-1.155
	Pr(> t)		
(Intercept)	0.066		
Age	0.272		
GenderMale	0.416		
Prior_Spine_SurgeryYes	0.018		
ASA_classification	0.699		
BMI_First_Visit	0.030		
SiteBOR Op	0.708		
SiteIST Op	0.567		
SiteMAD Op	0.887		
SiteZUR Op	0.562		
Global_Tilt	0.298		
Static_Major_curve_Cobb_angle	0.017		
'5y_vs_2y_effect'	0.629		
Global_Tilt:'5y_vs_2y_effect'	0.307		
Static_Major_curve_Cobb_angle:'5y_vs_2y_effect'	0.248		

Reinterventions

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	0	0	NaN	NaN
Age	0	0	NaN	NaN
GenderMale	0	0	NaN	NaN
Prior_Spine_SurgeryYes	0	0	NaN	NaN
ASA_classification	0	0	NaN	NaN
BMI_First_Visit	0	0	NaN	NaN
SiteBOR Op	0	0	NaN	NaN
SiteIST Op	0	0	NaN	NaN
SiteMAD Op	0	0	NaN	NaN
SiteZUR Op	0	0	NaN	NaN

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	0	0	NaN	NaN
Age	0	0	NaN	NaN
GenderMale	0	0	NaN	NaN
Prior_Spine_SurgeryYes	0	0	NaN	NaN

ASA_classification	0	0	NaN	NaN
BMI_First_Visit	0	0	NaN	NaN
SiteBOR Op	0	0	NaN	NaN
SiteIST Op	0	0	NaN	NaN
SiteMAD Op	0	0	NaN	NaN
SiteZUR Op	0	0	NaN	NaN
Global_Tilt	0	0	NaN	NaN
Static_Major_curve_Cobb_angle	0	0	NaN	NaN