**Converting from the NJR files to R-readable files needed for model**

The key provided by NJR statistician is below. This allows you to find the appropriate log file for each age/gender subgroup and implant. For example, the file log\_1\_1.txt corresponds to “Female <55 ” on implant “Cem CR\_Fix Mono”.

KEY:

First digit is the age/gender subgroup (age\_genx), second digit is the implant group (EGROUP)

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gender/age subgrp **age\_genx** | Freq. Percent Valid Cum.

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Valid 1 Female <55 | 35452 3.25 3.25 3.25

2 Female 55-64 | 134254 12.31 12.31 15.56

3 Female 65-74 | 242190 22.20 22.20 37.76

4 Female 75-84 | 183544 16.82 16.82 54.58

5 Female 85+ | 28499 2.61 2.61 57.19

6 Male <55 | 25244 2.31 2.31 59.51

7 Male 55-64 | 108547 9.95 9.95 69.46

8 Male 65-74 | 190862 17.50 17.50 86.95

9 Male 75-84 | 125102 11.47 11.47 98.42

10 Male 85+ | 17226 1.58 1.58 100.00

Total | 1090920 100.00 100.00

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Implant subgroup **EGROUP** | Freq. Percent Valid Cum.

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Valid 1 Cem CR\_Fix Mono | 15535 1.42 1.42 1.42

2 Cem CR\_Fix Mod | 714614 65.51 65.51 66.93

3 Cem CR\_Mob Mod | 37327 3.42 3.42 70.35

5 Cem PS\_Fix Mod | 239109 21.92 21.92 92.27

6 Cem PS\_Mob Mod | 11545 1.06 1.06 93.33

8 Cem Con\_Con Mod | 8610 0.79 0.79 94.12

10 Unc CR\_Fix Mod | 16650 1.53 1.53 95.64

11 Unc CR\_Mob Mod | 24038 2.20 2.20 97.85

12 Unc PS\_Fix Mod | 3153 0.29 0.29 98.14

17 Hyb CR\_Fix Mod | 5790 0.53 0.53 98.67

25 OX Cem CR\_Fix Mod | 7597 0.70 0.70 99.36

26 OX Cem PS\_Fix Mod | 6952 0.64 0.64 100.00

Total | 1090920 100.00 100.00

To fill in the Excel sheet “55-64\_Female\_first\_revision.xlsx” (as an example), you’ll need to look at the log\_2\_x.txt files.

**rcs\_first\_revision\_mean**

Find the log file corresponding to the implant. For example, “Cem CR\_Fix Mono” is in log\_2\_1.txt. The log files describe splines with various degrees of freedom but we are choosing the first model, which has 3 degrees of freedom (df=3). Search for the table that looks like

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| Coef. Std. Err. z P>|z| [95% Conf. Interval]

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xb |

\_rcs1 | .2437356 .2395102 1.02 0.309 -.2256957 .713167

\_rcs2 | -.1136004 .1244917 -0.91 0.361 -.3575997 .1303988

\_rcs3 | .208445 .2722084 0.77 0.444 -.3250736 .7419636

\_cons | -6.790221 1.104258 -6.15 0.000 -8.954527 -4.625915

Then copy the \_cons value into the cell for “cons” (e.g. cell B2 for “Cem CR\_Fix Mono”), “\_rcs1” into cell for “rcs1” (e.g. cell B3 for “Cem CR\_Fix Mono”) and so on. Be careful as the first column in Excel is the last row in the log txt file.

**ln\_bhknots\_first\_revision**

The log times for the boundary and internal knots are just below the AIC value for the spline model in the log file. For example log\_2\_1 corresponding to “Cem CR\_Fix Mono” these are:

ln\_bhknots= -6.593729019165039 .3513218462467194 1.368338108062744 2.102112054824829

These need to be copied into the appropriate row of the ln\_bhknots\_first\_revision tab. Note that copy-and-paste (on Windows) will put the four knot points into a single cell but each element needs to be in a different cell (i.e. one column for each timepoint).

**Covariances**

The covariance for each implant is under the line “symmetric e(V)[7,7]”. For example log\_2\_1 corresponding to “Cem CR\_Fix Mono” this is:

xb: xb: xb: xb: dxb: dxb: dxb:

\_rcs1 \_rcs2 \_rcs3 \_cons \_d\_rcs1 \_d\_rcs2 \_d\_rcs3

xb:\_rcs1 .05736513

xb:\_rcs2 .00598902 .01549818

xb:\_rcs3 -.00937478 -.03379271 .07409739

xb:\_cons .12364249 .0994793 -.20307087 1.2193856

dxb:\_d\_rcs1 .05736513 .00598902 -.00937478 .12364249 .05736513

dxb:\_d\_rcs2 .00598902 .01549818 -.03379271 .0994793 .00598902 .01549818

dxb:\_d\_rcs3 -.00937478 -.03379271 .07409739 -.20307087 -.00937478 -.03379271 .07409739

This needs to be inserted as a matrix into the appropriate Excel tab for covariance matrices (e.g. tab “Cem CR\_Fix Mono\_cov” for “Cem CR\_Fix Mono”). There isn’t a very efficient way to get these into the appropriate format. What I did was copy the text from the log file into a separate txt file, saved it (e.g. I named it cov\_temp.txt), and then opened it with Excel selecting “Fixed width”. This puts each column of text into a separate Excel column. When copying from the log file, be sure to include all columns as the final column (\_d\_rcs3) often gets put on the next line in the txt file.

The whole process took less than an hour for one age/gender subgroup so should take about a day’s work for all groups and implants.