**Supplementary Digital Content 1 – Document 1**

**Restricted Cubic Splines**

Inclusion of restricted cubic splines in the statistical analysis provides a method to formally test the assumption of a linear relationship between a predictor and the outcome using standard methods i.e. testing the hypothesis that the relationship is not linear or summarizing a relationship that is too non-linear to be usefully summarized by a linear relationship. Failure to identify non-linearity and include it in a model can result in an overestimated or underestimated relationship, or a relationship that is missed altogether. When non-linear relationships exist, splines allow it to be modelled well, reducing model misspecification and providing insight into the relationship between predictor and outcome (i.e. balancing model simplicity and goodness of fit).

To assess the impact of non-linearity on the logistic regression analysis the continuous variables included in our model were transformed by using restricted cubic splines with both 3 and 4 knots (default placements). Logistic regression was subsequently performed with the categorical variables included in the two spline models with 3 and 4 knots, respectively. The acquired Akaike information criterion (AIC) and Bayesian information criterion (BIC) values were then compared with the corresponding AIC and BIC values of the original model.

When assessing AIC, our original model had a value of 68, compared to 71 (3 knots) and 55 (4 knots). The corresponding BIC values were 82, 89 (3 knots), and 78 (4 knots), respectively. Due to very similar values in both AIC and BIC, the approach of non-linearity through splines did not seem to impact the logistic regression analysis in a problematic way, which supports the use of the model without transformations and facilitates clinical interpretation.