Online appendix I:

To explore the data from a different angle, and to confirm results of the primary statistical approach taken in this study, logistic regression models were used to compute p-values for the regression coefficients for primary and secondary endpoints. Log-transformed measures of strength (or change in strength) were used as "predictors" and progression/non-progression as the" outcome", adjusting for age, BMI, and WOMAC pain levels as covariates. Further, the percentage of progressor and non-progressor knees were determined in the greater vs. lower tertile of muscle strength or longitudinal strength change.

In female knees from the highest tertile of year 2 extensor muscle strength (normalized to individual body weight), 23% were radiographic progressors and 77% non-progressors. In knees from the lowest tertile, 29% were radiographic progressors and 71% non-progressors. Logistic regression found no significant relationship between (normalized) extensor muscle strength as a predictor and radiographic progression as an outcome ($p=0.84$). In female KLG 0/1 knees from the highest tertile of year 2 extensor muscle strength (normalized to body weight), 30% were radiographic progressors, and 70% were non-progressors. In KLG 0/1 knees from the lowest tertile, 31% were progressors, and 69% were non-progressors. Again, logistic regression did not suggest a significant relationship ($p=0.33$).

In female knees from the tertile with the greatest longitudinal reduction in extensor muscle strength (BL→Y2), 28% were radiographic progressors, and 72% non-progressors. In knees from the tertile with the least longitudinal reduction (or with gains) in extensor muscle strength, 26% were progressors and 74% non-progressors. Logistic regression found no significant relationship between longitudinal change in extensor muscle strength and progression ($p=0.76$).

In female KLG 0/1 knees from the tertile with the greatest longitudinal reduction in extensor muscle strength (BL→Y2), 33% were progressors and 67% were non-progressors. In

KLG 0/1 knees from the tertile with the least longitudinal reduction in extensor muscle strength, 30% were progressors, and 70% non-progressors, and logistic regression again did not suggest a significant relationship (p=0.29).