**Multiple Imputation Procedures**

The full sample consisted of 4182 participants but were complete for only 3841 (92.8%) participants considering baseline variables of interest. We give the extent and distribution of missing data in Figure I. We used the multiple imputation procedure in SAS statistical software (PROC MI) to impute the relevant missing covariates at baseline and used the last observation carried forward for the lower proportion (<5%) of covariates missing at follow-ups. Variables included in the imputation models consisted of all relevant characteristics listed in the manuscript Table I as well as those detailing the mortality event and its corresponding time-to-event. Twenty imputed datasets were created with 20 burn-in iterations before each imputation. MI was conducted by fully conditional specification (FCS) logistic methods for the majority of covariates, which were binary, and using FCS regression for the one continuous variable (BMI, for which normality was ascertained). FCS was used because it performs well for assumptions under MAR and missing proportions lower than 0.5 (our proportion is well below that at 0.08) [http://www2.sas.com/proceedings/sugi30/113-30.pdf].

Appendix Table IV. Missing values at assessment points

| Characteristics | Study Visit |
| --- | --- |
| Baseline (n=4182) | 1st FU (n=2441) 6.0+/-1.2 years | 2nd FU (n=1448) 12.2+/-1.5 years | 3rd FU (n=556) 18.4+/-1.5 years |
| n | % | n | % | n | % | n | % |
| Education | 15 | 0.4 | 6 | 0.2 | 4 | 0.3 | - | - |
| BMI | 11 | 0.3 | 4 | 0.2 | 2 | 0.1 | - | - |
| Physical activity | 125 | 3.0 | 5 | 0.2 | - | - | - | - |
| Smoking | 89 | 2.1 | 3 | 0.1 | - | - | - | - |
| Alcohol use | 87 | 2.1 | 5 | 0.2 | - | - | - | - |
| Knee injury | 66 | 1.6 | . | . | - | - | - | - |
| NSAID use | 51 | 1.2 | 3 | 0.1 | - | - | - | - |
| Depressive symptoms | 64 | 1.5 | - | - | - | - | - | - |
| Cancer | 5 | 0.1 | - | - | - | - | - | - |
| CVD | 6 | 0.1 | - | - | - | - | - | - |
| Diabetes | 5 | 0.1 | - | - | 1 | 0.1 | - | - |
| High blood pressure | 10 | 0.2 | - | - | - | - | - | - |
| Liver disease | 6 | 0.1 | - | - | - | - | - | - |