## Supplementary file

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S4 Figure. Average cumulative years ${ }^{a}$ of statin therapy by the landmark age in patients with no current statin prescription by year of birth. ${ }^{\text {a Cumulative years of statin therapy was defined from first }}$ prescription until landmark $s-1$ in patients with no current statin prescription at landmark $s$ and was zero for patients who never had a statin prescription until landmark s-1.

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## Methods landmark analyses

Landmark analyses were carried out to dynamically predict the survival effects associated with statin therapy based on the latest medical history at the landmark, thereby allowing for time-dependent covariates and survival effects, and predictions at landmarks beyond the study period (1). Cox regression models were fitted to predict $5-10$-, and 25 -year survival associated with current statin prescription at each landmark (every six months) from age 60 to 85 years, resulting in 51 landmarks. This modelling process involved four stages. At stage one, a Cox model was fitted on complete cases at baseline age to inform the imputation model. The baseline analysis model included all covariates and tested for interactions of cardiac risk with sex and birth cohort using backward elimination. As none of the interactions was significant, the imputation model included only medical history without interactions. At stage two, Cox models were fitted on the imputed datasets at ages $65,70,75,80$ and 85 to inform the final landmark model. These models included all medical history and tested for interactions of statin prescription with sex, birth cohort and cardiac risk. The final landmark model included the medical history and the significant interaction between statin prescription and birth cohort. This interaction was defined as no statin prescription (reference level), statin prescription in patients born in 1930-35, and statin prescription in patients born in 1936-40. At stage three, an unadjusted Cox landmark model for current statin prescription and the final, fully adjusted, Cox landmark model was fitted on the imputed datasets. The landmark effect was smoothed with an integrated pseudo partial log-likelihood (IPL*) (2). At stage four, the results of the previous stage were pooled using Rubin rules (3). While the models in stages one and two were multilevel on general practice, the landmark models in stage three could only adjust for within-patient variance and not for within-practice variance (2). Ignoring within-practice variance could lead to less precise results and wider confidence intervals (4).

The models were assessed on the proportional hazards assumption and discrimination using the concordance index (29). For the sensitivity analyses, stage three was repeated on patients with complete EHR, and on restricting the controls only to patients who were never prescribed statins (on imputed datasets). All statistical analyses were carried out in $R$ version 3.5.0, except for the QRISK2 score calculation in JAVA version 10.

## References

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3. Rubin D. Multiple Imputation for Nonresponse in Surveys. Rubin DB, editor. Hoboken, NJ, USA: John Wiley \& Sons, Inc.; 1987. (Wiley Series in Probability and Statistics).
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S1 Table. Coding of medical history.

| Variable | Description ${ }^{\text {a }}$ | Coding ${ }^{\text {b }}$ |
| :---: | :---: | :---: |
| Alcohol | Alcohol consumer status | Non-current / current |
| Aspirin | Aspirin prescription (BNF chapter 2.9.1) | No / yes |
| BMI | Body mass index calculated as: (weight in kg )/(height in m$)^{2}$ | under/normal <br> weight: <25, <br> overweight: 25-30, <br> obese: $\geq 30$ |
| Cardiac risk | Based on QRISK2 risk score (10-year risk of first cardiac event) and diagnosis of cardiovascular disease (CVD: coronary heart disease and cerebrovascular disease but not peripheral vascular disease) | QRISK2 of 20-40\% / QRISK2 $\geq 40 \%$ or CVD diagnosis / QRISK2<20\% |
| CKD | Diagnosis of chronic kidney disease at stage 3-5 (GFR<15, (ICD-10 N18.3-5) | No / yes |
| Deprivation | Townsend deprivation index, which is based on unemployment, non-car ownership, non-home ownership, and household overcrowding. | Quintiles where 1 is least deprived and 5 most deprived |
| Diabetes | Diagnosis of diabetes mellitus type 2 (ICD-10 E10-14) | No / yes |
| HCL | Diagnosis of hypercholesterolaemia (ICD-10 E78.0-5) or total cholesterol reading greater than $5 \mathrm{mmol} / \mathrm{L}$ | No / yes |
| Hypertension | Based on diagnosis (ICD-10 I10) and prescription of antihypertensive treatment (BNF chapters 2.4, 2.5.5 and 2.6.2: beta-adrenoceptor blocking drugs, thiazides and related diuretics, adrenergic neurone blocking drugs, alphaadrenoceptor blocking drugs, angiotensin-converting enzyme inhibitors, angiotensin-II receptor antagonists, centrally acting antihypertensive drugs, drugs affecting the reninangiotensin system, drugs related to hypertension and heart failure, renin inhibitors, vasodilator antihypertensive drugs, and calcium-channel blockers) | No diagnosis / diagnosed \& treated / diagnosed \& not treated |
| Sex | Gender | Women / men |
| Smoking | Smoking status | Non / ex / current |
| Statins | Current prescription (BNF chapter 2.12), which include: atorvastatin, cerivastatin, fluvastatin, pravastatin, rosuvastatin, and simvastatin | No / yes |
| SBP | Systolic blood pressure measured as mm Hg |  |
| YoB | Year of birth category | 1930-35 / 1936-40 |

S2 Table. Characteristics of patients with complete and incomplete ${ }^{\mathrm{a}}$ health records

|  | Records | Year of birth | Size | Death $/ 1,000$ Person-Years | Male (\%) | Statins (\%) | CVD (\%) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age 60 | Complete | 1936-40 | 30,012 | 4.64 | 12,784 (43\%) | NA | NA |
|  |  | 1930-35 | 10,824 | 2.82 | 4616 (43\%) | NA | NA |
|  | Incomplete | 1936-40 | 38,182 | 5.82 | 19,245 (50\%) | NA | NA |
|  |  | 1930-35 | 31,225 | 8.58 | 14,202 (45\%) | NA | NA |
| Age 65 | Complete | 1936-40 | 34,151 | 5.09 | 14,991 (44\%) | 4822 (14\%) | 2302 (7\%) |
|  |  | 1930-35 | 17,034 | 4.56 | 7447 (44\%) | 833 (5\%) | 1356 (8\%) |
|  | Incomplete | 1936-40 | 28,931 | 4.39 | 14,402 (50\%) | 1579 (5\%) | 1432 (5\%) |
|  |  | 1930-35 | 24,265 | 6.66 | 10,988 (45\%) | 384 (2\%) | 1268 (5\%) |
| Age 70 | Complete | 1936-40 | 36,008 | 4.41 | 16,028 (45\%) | 13,571 (38\%) | 4981 (14\%) |
|  |  | 1930-35 | 18,530 | 4.81 | 8153 (44\%) | 4184 (23\%) | 2996 (16\%) |
|  | Incomplete | 1936-40 | 18,896 | 2.61 | 9074 (48\%) | 3322 (18\%) | 1941 (10\%) |
|  |  | 1930-35 | 19,401 | 5.30 | 8492 (44\%) | 1663 (9\%) | 2179 (11\%) |
| Age 75 | Complete | 1936-40 | 35,123 | 2.29 | 15,654 (45\%) | 16,980 (48\%) | 7145 (20\%) |
|  |  | 1930-35 | 19,642 | 4.23 | 8558 (44\%) | 8944 (46\%) | 4683 (24\%) |
|  | Incomplete | 1936-40 | 11,329 | 1.08 | 5181 (46\%) | 3230 (29\%) | 1814 (16\%) |
|  |  | 1930-35 | 12,634 | 3.24 | 5182 (41\%) | 2487 (20\%) | 2119 (17\%) |
| Age 80 | Complete | 1936-37 | 4617 | 0.07 | 2044 (44\%) | 2392 (52\%) | 1304 (28\%) |
|  |  | 1930-35 | 17,962 | 2.21 | 7699 (43\%) | 9065 (50\%) | 5240 (29\%) |
|  | Incomplete | 1936-37 | 1111 | 0.02 | 471 (42\%) | 430 (39\%) | 265 (24\%) |
|  |  | 1930-35 | 7477 | 1.39 | 2875 (38\%) | 2065 (28\%) | 1648 (22\%) |
| Age 85 | Complete | 1930-32 | 3002 | 0.16 | 1271 (42\%) | 1421 (47\%) | 1052 (35\%) |
|  | Incomplete | 1930-32 | 1099 | 0.08 | 351 (32\%) | 416 (38\%) | 276 (25\%) |

a Missing record in systolic blood pressure, body mass index, alcohol consumer status or smoking status.

S1 Figure. Distribution of observed and imputed values of variables with missing data at baseline.


BMI density in original and imputed datasets


Alcohol consumption status in original and imputed datasets


Smoking status in original and imputed datasets


S3 Table. Years of follow-up by cardiac risk and landmark age.

|  | QRISK2<20\% |  |  | QRISK2: 20-40\% |  |  | QRISK2 $\geq 40 \%$ or CVD |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Mean | Min | Max | Mean | Min | Max | Mean | Min | Max |
| Age 60 | 16.6 | $<1$ | 26.5 | 14.3 | $<1$ | 26.5 | 11.4 | 1.6 | 21.5 |
| Age 65 | 12.6 | $<1$ | 21.5 | 11.0 | $<1$ | 21.5 | 11.6 | $<1$ | 21.5 |
| Age 70 | 9.0 | $<1$ | 16.5 | 8.2 | $<1$ | 16.5 | 8.0 | $<1$ | 16.5 |
| Age 75 | 4.9 | $<1$ | 11.5 | 4.7 | $<1$ | 11.5 | 4.4 | $<1$ | 11.5 |
| Age 80 | NA | NA | NA | 2.7 | $<1$ | 6.5 | 2.5 | $<1$ | 6.5 |
| Age 85 | NA | NA | NA | 0.9 | $<1$ | 1.5 | 0.8 | $<1$ | 1.5 |

S4 Table. Cardiac risk ${ }^{a}$ by sex and landmark age.

|  | Age 65 | Age 70 | Age 75 | Age 80 | Age 85 |
| :--- | ---: | ---: | ---: | ---: | ---: |
| Women |  |  |  |  |  |
| QRISK2<20\% | $51,819(92 \%)$ | $35,337(69 \%)$ | $7127(16 \%)$ | $0(0 \%)$ | $0(0 \%)$ |
| QRISK2:20-40\% | $2122(4 \%)$ | $10,149(20 \%)$ | $27,672(63 \%)$ | $10,564(58 \%)$ | $221(9 \%)$ |
| QRISK2 $240 \%$ | $2612(5 \%)$ | $5602(11 \%)$ | $9354(21 \%)$ | $7514(42 \%)$ | $2258(91 \%)$ |
| or CVD |  |  |  |  |  |
| Total (100\%) | 56,553 | 51,088 | 44,153 | 18,078 | 2479 |
|  |  |  |  |  |  |
| Men |  |  |  |  |  |
| QRISK2<20\% | $32,561(68 \%)$ | $10,019(24 \%)$ | $0(0 \%)$ | $0(0 \%)$ | $0(0 \%)$ |
| QRISK2:20-40\% | $11,288(24 \%)$ | $23,587(56 \%)$ | $21,463(62 \%)$ | $4347(33 \%)$ | $31(2 \%)$ |
| QRISK2 $\geq 40 \%$ | $3979(8 \%)$ | $8141(20 \%)$ | $13,112(38 \%)$ | $8742(67 \%)$ | $1591(98 \%)$ |
| or CVD |  | 47,828 | 41,747 | 34,575 | 13,089 |
| Total (100\%) |  |  |  |  | 1622 |

${ }^{\text {a Mean }}$ across ten imputed datasets.

S2 Figure. Cumulative years ${ }^{\mathrm{a}}$ of statin therapy by the landmark age in patients with current statin prescription by year of birth.

${ }^{a}$ Cumulative years of statin therapy was defined from first prescription until landmark $s$ in patients with current statin prescription at landmark $s$.

S3 Figure. Proportion of high adherence ${ }^{a}$ to statin therapy in patients with a current statin prescription by year of birth.

${ }^{\text {a }}$ High adherence to statin therapy was defined as statin prescription at least $75 \%$ of the time from landmark $s$ until end of follow-up in patients with a current statin prescription at $s$.

S4 Figure. Average cumulative years ${ }^{\mathrm{a}}$ of statin therapy by the landmark age in patients with no current statin prescription by year of birth.

${ }^{\text {a }}$ Cumulative years of statin therapy was defined from first prescription until landmark $s-1$ in patients with no current statin prescription at landmark $s$ and was zero for patients who never had a statin prescription until landmark s-1.

S5 Table. Hazards of all-cause mortality from landmark model fitted on imputed datasets.

| Covariate | Category | Age 65 $H R^{\mathrm{a}}(95 \% \mathrm{CI})$ $(\mathrm{n}=104,375)$ | $\begin{gathered} \text { Age } 70 \\ {H R^{\mathrm{a}}(95 \% \mathrm{CI})}_{(\mathrm{n}=92,829)} \end{gathered}$ | $\begin{gathered} \text { Age } 75 \\ H R^{\mathrm{a}}(95 \% \mathrm{CI}) \\ (\mathrm{n}=78,721) \end{gathered}$ | $\begin{gathered} \text { Age } 80 \\ {H R^{\mathrm{a}}(95 \% \mathrm{CI})}_{(\mathrm{n}=31,166)} \end{gathered}$ | $\begin{gathered} \text { Age } 85 \\ \mathrm{HR}^{\mathrm{a}}(95 \% \mathrm{CI}) \\ (\mathrm{n}=4101) \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Statins ${ }^{\text {b }}$ unadjusted $25-\mathrm{yr}$ prediction | No prescription | 1 | 1 | 1 | 1 | 1 |
|  | Prescription | 1.21 (1.15-1.27) | 1.10 (1.07-1.13) | 1.01 (0.98-1.04) | 0.91 (0.87-0.96) | 0.80 (0.70-0.91) |
| Statins ${ }^{\text {b }}$ <br> 5 -yr prediction | No prescription | 1 | 1 | 1 | 1 | 1 |
|  | Prescription \& YoB=1930-35 | 0.82 (0.68-0.99) | 0.84 (0.78-0.90) | (0.73-0.81) | 0.73 (0.68-0.77) | 0.83 (0.68-1.01) |
|  | Prescription \& YoB=1936-40 | 0.75 (0.68-0.82) | 0.68 (0.64-0.72) | 0.67 (0.63-0.71) | 0.61 (0.50-0.73) | 0.43 (0.20-0.93) |
| Statins ${ }^{\text {b }}$ <br> 10 -yr prediction | No prescription | 1 | 1 | 1 | 1 | 1 |
|  | Prescription \& YoB=1930-35 | 0.87 (0.76-0.99) | 0.86 (0.82-0.91) | 0.78 (0.74-0.82) | 0.73 (0.69-0.78) | 0.83 (0.70-0.99) |
|  | Prescription \& YoB=1936-40 | 0.76 (0.71-0.81) | 0.71 (0.68-0.75) | 0.68 (0.65-0.72) | 0.63 (0.53-0.73) | 0.54 (0.33-0.92) |
| Statins ${ }^{\text {b }}$ 25-yr prediction | No prescription | 1 | 1 | 1 | 1 | 1 |
|  | Prescription \& YoB=1930-35 | 0.92 (0.83-1.01) | 0.87 (0.82-0.91) | 0.79 (0.75-0.83) | 0.74 (0.70-0.78) | 0.76 (0.65-0.89) |
|  | Prescription \& YoB=1936-40 | 0.80 (0.75-0.85) | 0.73 (0.69-0.76) | 0.68 (0.65-0.73) | 0.63 (0.55-0.74) | 0.65 (0.13-3.27) |
| Cardiac risk | QRISK2: 20-40\% | 1 | 1 | 1 | 1 | 1 |
|  | QRISK2>=40\% or CVD diagnosis | 1.27 (1.20-1.34) | 1.41 (1.35-1.46) | 1.43 (1.37-1.49) | 1.34 (1.26-1.42) | 1.13 (0.95-1.33) |
|  | QRISK2<20\% | 0.91 (0.87-0.94) | 0.90 (0.87-0.93) | 0.98 (0.92-1.04) | NA | NA |
| Sex | Men | 1 | 1 | 1 | 1 | 1 |
|  | Women | 0.75 (0.73-0.77) | 0.77 (0.75-0.79) | 0.77 (0.74-0.80) | 0.77 (0.73-0.82) | 0.78 (0.68-0.90) |
| Deprivation | 1st quintile | 1 | 1 | 1 | 1 | 1 |
|  | 2nd quintile | 1.07 (1.03-1.12) | 1.09 (1.04-1.14) | 1.09 (1.03-1.15) | 1.03 (0.95-1.12) | 0.90 (0.75-1.07) |


| Covariate | Category | $\begin{gathered} \text { Age 65 } \\ \mathrm{HR}^{\mathrm{a}}(95 \% \mathrm{CI}) \\ (\mathrm{n}=104,375) \end{gathered}$ | $\begin{gathered} \text { Age } 70 \\ H R^{\mathrm{a}}(95 \% \mathrm{CI}) \\ (\mathrm{n}=92,829) \end{gathered}$ | $\begin{gathered} \text { Age } 75 \\ H R^{\mathrm{a}}(95 \% \mathrm{CI}) \\ (\mathrm{n}=78,721) \end{gathered}$ | $\begin{gathered} \text { Age 80 } \\ H R^{\mathrm{a}}(95 \% \mathrm{CI}) \\ (\mathrm{n}=31,166) \end{gathered}$ | $\begin{gathered} \text { Age 85 } \\ \mathrm{HR}^{\mathrm{a}}(95 \% \mathrm{CI}) \\ (\mathrm{n}=4101) \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3rd quintile | 1.16 (1.11-1.21) | 1.17 (1.12-1.22 | 1.15 (1.09-1.22) | 1.08 (0.99-1.17) | 0.92 (0.76-1.11) |
|  | 4th quintile | 1.26 (1.20-1.31) | 1.27 (1.22-1.33) | 1.28 (1.20-1.34) | 1.19 (1.10-1.30) | 1.00 (0.83-1.20) |
|  | 5th quintile (most deprived) | 1.44 (1.38-1.51) | 1.39 (1.32-1.46) | 1.31 (1.24-1.39) | 1.22 (1.11-1.33) | 1.12 (0.91-1.37) |
| CKD | No diagnosis | 1 | 1 | 1 | 1 | 1 |
|  | Diagnosis | 1.35 (1.07-1.70) | 1.34 (1.26-1.44) | 1.27 (1.21-1.33) | 1.24 (1.17-1.32) | 1.39 (1.18-1.64) |
| Diabetes | No diagnosis | 1 | 1 | 1 | 1 | 1 |
|  | Diagnosis | 1.60 (1.52-1.68) | 1.43 (1.37-1.50) | 1.32 (1.26-1.39) | 1.25 (1.17-1.34) | 1.20 (1.01-1.42) |
| Hypertension | No diagnosis | 1 | 1 | 1 | 1 | 1 |
|  | Diagnosed \& treated | 1.15 (1.11-1.19) | 1.06 (1.02-1.09) | 0.98 (0.94-1.02) | 0.90 (0.85-0.95) | 0.81 (0.70-0.94) |
|  | Diagnosed <br> \& not treated | 1.05 (1.02-1.10) | 1.06 (1.01-1.10) | 1.09 (1.03-1.15) | 1.21 (1.12-1.32) | 1.51 (1.24-1.84) |
| Aspirin | No prescription | 1 | 1 | 1 | 1 | 1 |
|  | Prescription | 1.17 (1.12-1.22) | 1.08 (1.04-1.12) | 1.09 (1.05-1.14) | 1.13 (1.07-1.20) | 1.12 (0.96-1.30) |
| HCL | No diagnosis | 1 | 1 | 1 | 1 | 1 |
|  | Diagnosis | 0.83 (0.79-0.88) | 0.87 (0.83-0.91) | 0.91 (0.86-0.96) | 0.95 (0.88-1.02) | 0.98 (0.82-1.19) |
| BMI | Normal weight | 1 | 1 | 1 | 1 | 1 |
|  | Overweight | 0.94 (0.90-0.98) | 0.90 (0.87-0.93) | 0.87 (0.83-0.90) | 0.86 (0.81-0.91) | 0.91 (0.78-1.06) |
|  | Obese | 1.07 (1.02-1.13) | 1.02 (0.98-1.07) | 0.96 (0.91-1.01) | 0.90 (0.83-0.97) | 0.86 (0.70-1.04) |
| Alcohol | Non-current | 1 | 1 | 1 | 1 | 1 |
|  | Current | 0.87 (0.84-0.89) | 0.83 (0.80-0.86) | 0.78 (0.75-0.81) | 0.71 (0.67-0.75) | 0.65 (0.56-0.74) |
| Smoking | Non | 1 | 1 | 1 | 1 | 1 |
|  | Ex | 1.45 (1.40-1.51) | 1.45 (1.40-1.50) | 1.43 (1.38-1.49) | 1.37 (1.29-1.45) | 1.24 (1.08-1.42) |
|  | Current | 2.34 (2.26-2.43) | 2.27 (2.19-2.36) | 2.13 (2.03-2.23) | 1.85 (1.70-2.02) | 1.42 (1.12-1.78) |

S5 Figure. Incidence of diabetes in patients with or without prior statin prescription by the landmark age.


S6 Table. Hazards of all-cause mortality from landmark model fitted on complete cases.

| Covariate | Category | $\begin{gathered} \text { Age } 65 \\ {H R^{\mathrm{a}}(95 \% \mathrm{CI})}_{(\mathrm{n}=51,185)} \end{gathered}$ | $\begin{gathered} \text { Age } 70 \\ {H R^{\mathrm{a}}(95 \% C I)}_{(\mathrm{n}=54,538)} \end{gathered}$ | $\begin{gathered} \text { Age } 75 \\ H R^{\mathrm{a}}(95 \% \mathrm{CI}) \\ (\mathrm{n}=54,765) \end{gathered}$ | $\begin{gathered} \text { Age } 80 \\ {H R^{\mathrm{a}}(95 \% C I)}_{(\mathrm{n}=22,579)} \end{gathered}$ | $\begin{gathered} \text { Age } 85 \\ {H R^{\mathrm{a}}}^{(95 \% C I)} \\ (\mathrm{n}=3002) \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Statins ${ }^{\text {b }}$ unadjusted | No prescription | 1 | 1 | 1 | 1 | 1 |
|  | Prescription | 1.17 (1.10-1.26) | 1.13 (1.08-1.19) | 1.09 (1.03-1.16) | 1.01 (0.91-1.12) | 0.85 (0.62-1.18) |
| Statins ${ }^{\text {b }}$ | No prescription | 1 | 1 | 1 | 1 | 1 |
|  | Prescription \& YoB=1930-35 | 0.98 (0.84-1.13) | 0.91 (0.83-0.98) | 0.84 (0.78-0.91) | 0.78 (0.69-0.89) | 0.72 (0.45-1.04) |
|  | Prescription \& YoB=1936-40 | 0.77 (0.71-0.84) | 0.73 (0.68-0.78) | 0.71 (0.65-0.78) | 0.61 (0.48-0.77) | 0.41 (0.18-0.92) |
| Cardiac risk | QRISK2: 20-40\% | 1 | 1 | 1 | 1 | (0.18-0.92) |
|  | QRISK2>=40\% or CVD diagnosis | 1.34 (1.23-1.45) | 1.43 (1.34-1.52) | 1.36 (1.22-1.43) | 1.25 (1.09-1.42) | 1.38 (0.89-2.15) |
|  | QRISK2<20\% | 0.90 (0.85-0.95) | 0.89 (0.84-0.94) | 0.91 (0.81-1.03) | NA | NA |
| Sex | Men | 1 | 1 | 1 | 1 | 1 |
|  | Women | 0.73 (0.69-0.77) | 0.75 (0.71-0.79) | 0.75 (0.69-0.80) | 0.72 (0.63-0.82) | 0.69 (0.49-0.96) |
| Deprivation | 1st quintile | 1 | 1 | 1 | 1 | 1 |
|  | 2nd quintile | 1.03 (0.96-1.11) | 1.06 (0.98-1.15) | 1.05 (0.96-1.17) | 0.99 (0.83-1.18) | 0.83 (0.52-1.31) |
|  | 3rd quintile | 1.17 (1.09-1.26) | 1.21 (1.12-1.31) | $1.22(1.11-1.35)$ | 1.16 (0.97-1.38) | $0.97(0.62-1.53)$ |
|  | 4th quintile | 1.28 (1.19-1.37) | 1.31 (1.21-1.42) | 1.35 (1.22-1.49) | 1.31 (1.10-1.57) | 1.15 (0.73-1.80) |
|  | 5th quintile (most deprived) | 1.50 (1.38-1.62) | 1.46 (1.34-1.59) | 1.41 (1.26-1.57) | 1.34 (1.10-1.63) | 1.24 (0.75-2.06) |
| CKD | No diagnosis | 1 | 1 | 1 | 1 | 1 |
|  | Diagnosis | 1.39 (1.04-1.86) | 1.38 (1.26-1.52) | 1.29 (1.20-1.40) | 1.26 (1.12-1.43) | 1.45 (0.97-2.18) |
| Diabetes | No diagnosis | 1 | 1 | 1 | 1 | 1 |
|  | Diagnosis | 1.66 (1.54-1.80) | 1.47 (1.37-1.58) | 1.35 (1.23-1.47) | 1.30 (1.12-1.51) | 1.36 (0.90-2.05) |
| Hypertension | No diagnosis | 1 | 1 | 1 | 1 | 1 |
|  | Diagnosed \& treated | 1.30 (1.23-1.37) | 1.22 (1.15-1.29) | 1.17 (1.08-1.26) | 1.13 (0.98-1.30) | 1.06 (0.73-1.54) |


| Covariate | Category | $\begin{gathered} \text { Age 65 } \\ \mathrm{HR}^{\mathrm{a}}(95 \% \mathrm{CI}) \\ (\mathrm{n}=51,185) \end{gathered}$ | $\begin{gathered} \text { Age } 70 \\ H R^{\mathrm{a}}(95 \% \mathrm{CI}) \\ (\mathrm{n}=54,538) \end{gathered}$ | $\begin{gathered} \text { Age } 75 \\ \mathrm{HR}^{\mathrm{a}}(95 \% \mathrm{CI}) \\ (\mathrm{n}=54,765) \end{gathered}$ | $\begin{gathered} \text { Age } 80 \\ H R^{\mathrm{a}}(95 \% \mathrm{CI}) \\ (\mathrm{n}=22,579) \end{gathered}$ | $\begin{gathered} \text { Age } 85 \\ \mathrm{HR}^{\mathrm{a}}(95 \% \mathrm{CI}) \\ (\mathrm{n}=3002) \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Diagnosed \& not treated | 1.20 (1.13-1.27) | 1.19 (1.11-1.29) | 1.20 (1.07-1.34) | 1.22 (1.00-1.49 | 1.28 (0.76-2.14) |
| Aspirin | No prescription | 1 | 1 | 1 | 1 | 1 |
|  | Prescription | 1.09 (1.02-1.16) | 1.04 (0.98-1.10) | 1.12 (1.04-1.20) | 1.11 (0.99-1.24) | 0.82 (0.58-1.18) |
| HCL | No diagnosis | 1 | 1 | 1 | 1 | 1 |
|  | Diagnosis | 0.85 (0.79-0.92) | 0.87 (0.81-0.93) | 0.89 (0.82-0.97) | 0.93 (0.80-1.07) | 1.00 (0.69-1.47) |
| BMI | Normal weight | 1 | 1 | 1 | 1 | 1 |
|  | Overweight | 0.89 (0.84-0.94) | 0.83 (0.79-0.88) | 0.79 (0.73-0.85) | 0.85 (0.75-0.96) | 1.15 (0.82-1.61) |
|  | Obese | 1.06 (0.99-1.13) | $0.950 .89-1.02)$ | 0.87 (0.80-0.95) | 0.88 (0.75-1.02) | 1.06 (0.70-1.60) |
| Alcohol | Non-current | 1 | 1 | 1 | 1 | 1 |
|  | Current | 0.92 (0.88-0.98) | 0.89 (0.84-0.94) | 0.85 (0.79-0.90) | 0.77 (0.69-0.87) | 0.64 (0.47-0.88) |
| Smoking | Non | 1 | 1 | 1 | 1 | 1 |
|  | Ex | 1.56 (1.47-1.65) | 1.58 (1.49-1.67) | 1.57 (1.46-1.68) | 1.59 (1.40-1.80) | 1.70 (1.20-2.39) |
|  | Current | 2.49 (2.35-2.63 | 2.48 (2.32-2.65) | 2.43 (2.22-2.65) | 2.22 (1.83-2.67) | 1.78 (1.05-3.02) |

S6 Figure. Sensitivity analysis: hazards of all-cause mortality associated with current statin prescription excluding controls with future statin prescription fitted on imputed datasets.


