

SUPPLEMENTAL MATERIAL

Table S1. Definitions of Favorable, Elevated and High Levels of Cardiovascular Health Factors.

Definitions of Favorable, Elevated and High Levels of CV Health Factors					
	Smoking	Diabetes	BMI (kg/m²)	Blood Pressure (mm Hg)	Total Serum Cholesterol (mmol/L)[§]
Low-Risk (Favorable)	Non-smoker	No diabetes	< 25	Untreated SBP/DBP ≤ 120/80	Untreated cholesterol < 5.18 mmol/L or 200 mg/dl*
Moderate-Risk (Elevated)	-	-	25.0-29.9	Untreated SBP/DBP 121-139/81-89	Untreated cholesterol 5.18- 6.21mmol/L or 200-239 mg/dl
High-Risk	Smoker	Diabetes	≥ 30	SBP/DBP ≥ 140/90 or taking antihypertensive medications	Cholesterol level ≥ 6.22 mmol/l or 240 mg/dl, or taking cholesterol- lowering medication

*Divide by 0.0259 to convert to mg/dl

Table S2. Hazard Ratios (95% Confidence Intervals) for Dementia* by Baseline Individual Risk Factors (1967-73).

Baseline Individual Risk Factors		Model 1[†]	Model 2[‡]
<i>Smoking Status</i>	Not smokers	0.88 (0.78-0.99)	0.99 (0.88-1.12)
	Ever smokers	0.82 (0.71-0.93)	0.92 (0.80-1.05)
	Current smokers	1.00	1.00
<i>BMI(kg/m²)</i>	< 25	0.92 (0.77-1.09)	0.99 (0.83-1.17)
	≥25 and <30	0.89 (0.76-1.05)	0.94 (0.79-1.10)
	≥30	1.00	1.00
<i>BP Level/Med. Use</i>	≤120/80 mmHg, no meds	0.85 (0.75-0.98)	0.87 (0.76-0.99)
	>120/80, ≤140/90, no meds	0.89 (0.79-1.02)	0.94 (0.83-1.07)
	≥ 140/90 or on meds	1.00	1.00
<i>Cholesterol Level/Meds Use: <5.18 mmol/l[§], no meds</i>	<5.18 mmol/l [§] , no meds	0.86 (0.74-1.01)	0.86 (0.74-1.00)
	≥5.18 and <6.22, no meds	0.96 (0.82-1.12)	0.95 (0.80-1.11)
	≥6.22 or on meds	1.00	1.00
<i>Diabetes</i>		1.32 (0.90-1.95)	1.21 (0.82-1.80)

*Dementia were defined as any dementia-related diagnoses with ICD-9: 290, 290.0–4, 290.8–9, 294.1, 331, 331.0–2, 331.9. Medicare claims during 1991-2010 [including fee-for-service, for inpatient, outpatient (institutional and non-institutional), skilled nursing, durable medical equipment, home health, and hospice claims].

† Model 1: Adjusted for baseline age, sex, race, education attainment, and annual number of medical care visits prior to dementia diagnosis. Deaths prior to dementia were treated as censored observations.

‡Model 2: Adjusted for baseline age, sex, race, education attainment, and annual number of medical care visits prior to dementia diagnosis, taking into account the impact of deaths prior to dementia diagnosis on the association of interest.

§Divide by 0.0259 to convert to mg/dl

Table S3. Hazard Ratios (95% Confidence Intervals) for Dementia# Age 65 During 1991-2010 by Baseline CVH Status (1967-73), Stratified by Sex.

	Baseline CVH Status				
	Favorable* (n=742)	Moderate Risk† (n=2,238)	1-Only High-Risk Factor‡ (n=4,220)	2+ High-Risk Factors‡ (n=2,919)	P-Trend**
MEN					
Model 1 [§]	0.62 (0.40-0.97)	0.80 (0.67-0.96)	0.83 (0.71-0.97)	1.0	0.002
Model 2	0.69 (0.45-1.07)	0.92 (0.76-1.10)	0.89 (0.76-1.03)	1.0	0.096
WOMEN					
Model 1 [§]	0.68 (0.49-0.94)	0.63 (0.49-0.82)	0.74 (0.60-0.92)	1.0	0.001
Model 2	0.78 (0.56-1.09)	0.73 (0.57-0.94)	0.83 (0.67-1.03)	1.0	0.037

*Ideal levels of all major CVD RFs (SBP/DBP \leq 120/ \leq 80 mmHg and no antihypertensive medication, serum total cholesterol <5.18 mmol/L and no cholesterol-lowering medication, not smoking, BMI < 25 kg/m², and no diabetes).

†Borderline levels of SBP/DBP or serum total cholesterol, not smoking, BMI 25.0-29.9 kg/m², and no diabetes

‡ High-risk factors: hypertension (SBP/DBP \geq 140/90) or using antihypertensive medication), hypercholesterolemia (serum total cholesterol \geq 6.22 mmol/L or using lipid-lowering medication), smoking, BMI \geq 30.0 kg/m², diabetes.

§Model 1: Adjusted for baseline age, race, education attainment, and average number of claims per years prior to dementia diagnosis.

||Model 2: Adjusted for baseline age, race, education attainment, annual average number of claims prior to dementia diagnosis and death prior to dementia diagnoses.

#Dementia were defined as any dementia-related diagnoses with ICD-9: 290, 290.0–4, 290.8–9, 294.1, 331, 331.0–2, 331.9. Medicare claims during 1991-2010 [including fee-for-service, for inpatient, outpatient (institutional and non-institutional), skilled nursing, durable medical equipment, home health, and hospice claims].

**P value for graded association across baseline risk factor groups with risk factor status as an ordinal variable.

Table S4. Hazard Ratios (95% Confidence Intervals) for Dementia[#] After Age 65 During 1991-2010 by Baseline CVH Status (1967-73), Stratified by Education Levels.

	Baseline CVH Status				
	Favorable [*] (n=742)	Moderate Risk [†] (n=2,238)	1-Only High-Risk Factor [‡] (n=4,220)	2+ High-Risk Factors [‡] (n=2,919)	P-Trend ^{**}
>12 years of schooling at baseline					
Model 1[§]	0.62 (0.43-0.90)	0.72 (0.58-0.89)	0.84 (0.69-1.01)	1.0	<0.001
Model 2	0.68 (0.47-0.99)	0.79 (0.64-0.99)	0.89 (0.74-1.07)	1.0	0.011
≤12 years of schooling at baseline					
Model 1[§]	0.76 (0.54-1.08)	0.76 (0.62-0.93)	0.78 (0.66-0.91)	1.0	0.004
Model 2	0.58 (0.36-0.94)	0.79 (0.60-1.04)	0.86 (0.68-1.10)	1.0	0.016

*Ideal levels of all major CVD RFs (SBP/DBP ≤120/≤80 mmHg and no antihypertensive medication, serum total cholesterol <5.18 mmol/L and no cholesterol-lowering medication, not smoking, BMI < 25 kg/m², and no diabetes).

[†]Borderline levels of SBP/DBP or serum total cholesterol, not smoking, BMI 25.0-29.9 kg/m², and no diabetes

[‡] High-risk factors: hypertension (SBP/DBP ≥ 140/90) or using antihypertensive medication), hypercholesterolemia (serum total cholesterol ≥ 6.22 mmol/L or using lipid-lowering medication), smoking, BMI ≥30.0 kg/m², diabetes.

[§]Model 1: Adjusted for baseline age, race, sex, and average number of claims per years prior to dementia diagnosis.

||Model 2: Adjusted for baseline age, race, sex, annual average number of claims prior to dementia diagnosis and death prior to dementia diagnoses.

#Dementia were defined as any dementia-related diagnoses with ICD-9: 290, 290.0–4, 290.8–9, 294.1, 331, 331.0–2, 331.9. Medicare claims during 1991-2010 [including fee-for-service, for inpatient, outpatient (institutional and non-institutional), skilled nursing, durable medical equipment, home health, and hospice claims].

**P value for graded association across baseline risk factor groups with risk factor status as an ordinal variable.

Table S5. Hazard Ratios (95% Confidence Intervals) for Dementia# After Age 65 During 1991-2010 by Baseline CVH Status (1967-73), Further Adjusted for Interim Stroke.

	Baseline CVH Status				P-Trend ^{**}
	Favorable [*] (n=742)	Moderate Risk [†] (n=2,238)	1-Only High-Risk Factor [‡] (n=4,220)	2+ High-Risk Factors [‡] (n=2,919)	
Model 1[§]	0.70 (0.54-0.90)	0.75 (0.65-0.87)	0.81 (0.72-0.92)	1.0	<.001
Model 2	0.79 (0.62-1.02)	0.87 (0.77-1.00)	0.88 (0.78-0.99)	1.0	0.020

*Ideal levels of all major CVD RFs (SBP/DBP $\leq 120/\leq 80$ mmHg and no antihypertensive medication, serum total cholesterol < 5.18 mmol/L and no cholesterol-lowering medication, not smoking, BMI < 25 kg/m², and no diabetes).

[†]Borderline levels of SBP/DBP or serum total cholesterol, not smoking, BMI 25.0-29.9 kg/m², and no diabetes

[‡]High-risk factors: hypertension (SBP/DBP $\geq 140/90$) or using antihypertensive medication), hypercholesterolemia (serum total cholesterol ≥ 6.22 mmol/L or using lipid-lowering medication), smoking, BMI ≥ 30.0 kg/m², diabetes.

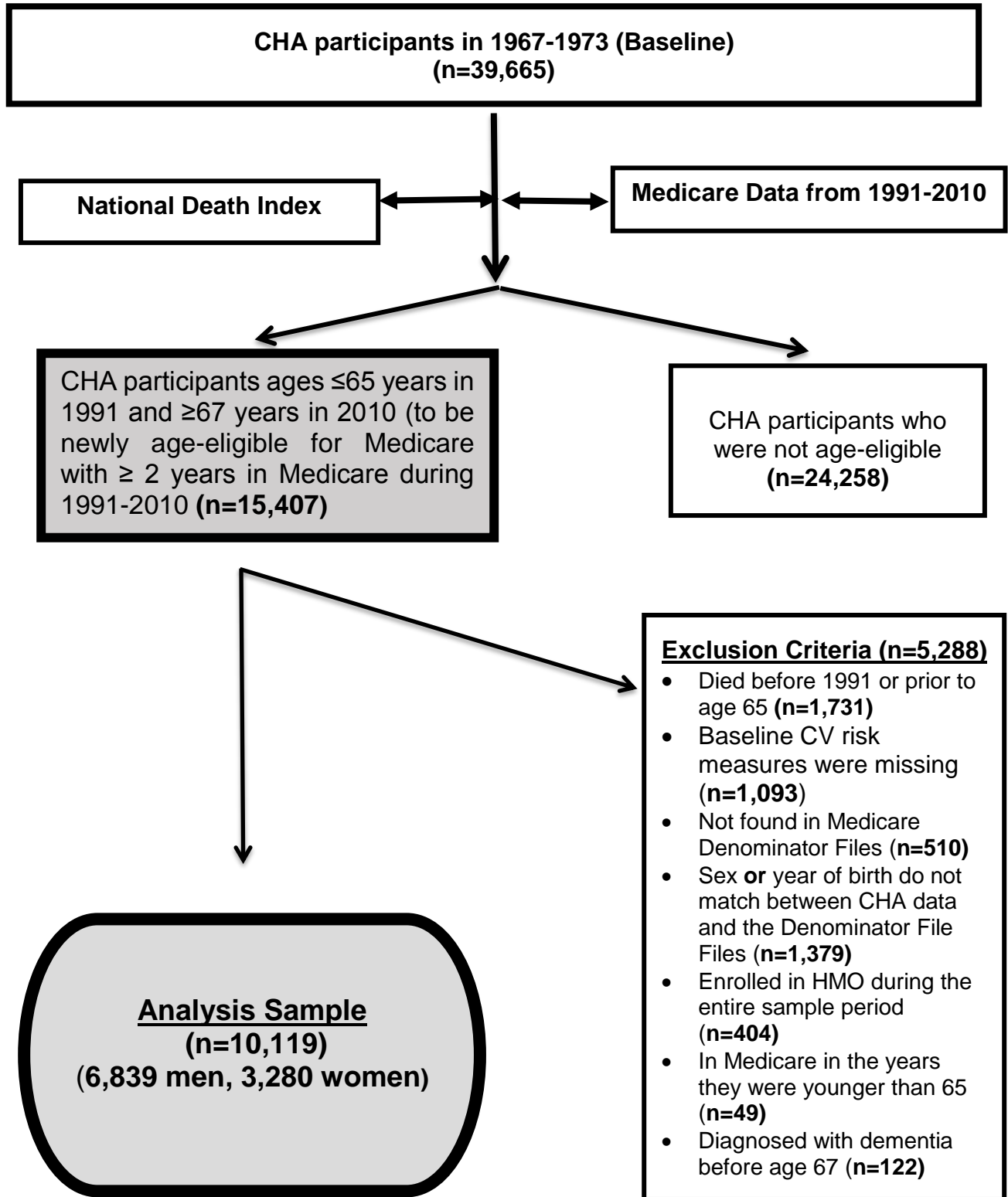
[§]Model 1: Adjusted for baseline age, sex, race, education attainment, average number of claims per years prior to dementia diagnosis, and any interim stroke occurring from age 65 to the time dementia was first diagnosed (or to the censored time).

||Model 2: Adjusted for baseline age, sex, race, education attainment, annual average number of claims prior to dementia diagnosis, and any interim stroke occurring from age 65 to the time dementia was first diagnosed (or to the censored time), and death prior to dementia diagnoses.

#Dementia were defined as any dementia-related diagnoses with ICD-9: 290, 290.0–4, 290.8–9, 294.1, 331, 331.0–2, 331.9. Medicare claims during 1991-2010 [including fee-for-service, for inpatient, outpatient (institutional and non-institutional), skilled nursing, durable medical equipment, home health, and hospice claims].

**P value for graded association across 4 baseline risk factor groups with risk factor status as an ordinal variable.

Figure S1. Flow Chart Depicting CHA-MEDICARE* Analysis Sample.



*CHA, Chicago Heart Association Detection Project in Industry Study