**Supplementary Materials**

Derivation of Proposed Cardiometabolic Risk Score

Using the varying coefficients multivariate model, we derived subject-specific 10-year cardiometabolic risk. Below, we present how to obtain risk scores, which depend on the strata to which the subject belongs.

**Males**

1. Calculate AM, entering subject-specific values:

AM =0.061355\*Age+0.032520\*BMI+0.302091\*(if smoker)+0.0 (if nonsmoker) +0.008013\*SBP +0.003025\*TotalChol - 0.010646\*HDLChol + 0.208154\*HbA1c

2. Calculate BM, the mean values of male-specific risk factors entered into AM:

BM =0.061355\*54.5+0.032520\*28.2+0.302091\*0.191+0.008013\*128.3 +0.003025\*200.9 - 0.010646\*43.8 + 0.208154\*5.42

BM = 6.616

3. Calculate CM, the exponent of the difference between AM and BM:

CM = exp(AM-BM)

4. The baseline hazard for this strata evaluated at time=10 years, is SM(10)=0.8937. Calculate 10-year cardiometabolic risk for Males (PM) as:

PM = 1-[SM(10)]CM

**Females**

1. Calculate AF, entering subject-specific values:

AF =0.066968\*Age+0.021861\*BMI+0.666624\*(if smoker)+0.0 (if nonsmoker) +0.011593\*SBP +0.004004\*TotalChol - 0.020926\*HDLChol +0.135961\*HbA1c

2. Calculate BF, the mean values of female-specific risk factors entered into AF:

BF = 0.066968\*54.2+0.021861\*26.6+0.666624\*0.185 +0.011593\*123.3 +0.004004\*206.6 - 0.020926\*56.4 +0.135961\*5.37

BF = 6.141

3. Calculate CF, the exponent of the difference between AF and BF:

CF = exp(AF-BF)

4. The baseline hazard for this strata evaluated at time=10 years, is SF(10)= 0.9530. Calculate 10-year cardiometabolic risk for Females (PF) as:

PF = 1-[SF(10)]CF

As an example, we calculate the 10-year risk of general CVD for a 55 year-old male with Total Cholesterol=250 mg/dL, HDL Cholesterol=39 mg/dL, HbA1c = 4.5%, Smoking = Yes, Systolic BP = 146 mmHg and BMI = 23.0 kg/m2 using the proposed cardiometabolic risk model. To calculate the risk for this subject we use the male score equations to calculate PM.

1. Calculate AM, entering subject-specific values:

AM =0.061355\*Age+0.032520\*BMI+0.302091\*(if smoker)+0.0 (if nonsmoker) +0.008013\*SBP +0.003025\*TotalChol - 0.010646\*HDLChol + 0.208154\*HbA1c

AM =0.061355\*55+0.032520\*23.0+0.302091\*1.0+0.008013\*146 +0.003025\*250 - 0.010646\*39 + 0.208154\*4.5

A2 = 6.872

2. Calculate BM, the mean values of strata-specific risk factors entered into AM:

BM =0.061355\*54.5+0.032520\*28.2+0.302091\*0.191+0.008013\*128.3 +0.003025\*200.9 - 0.010646\*43.8 + 0.208154\*5.42

BM = 6.616

3. Calculate CM, the exponent of the difference between AM and BM:

CM = exp(AM-BM)

C2 = exp(6.872-6.616) = 1.2918

4. The baseline hazard for this strata evaluated at time=10 years, is SM(10)= 0.8937. Calculate 10-year cardiometabolic risk for subject (PM) as:

PM = 1-[SM(10)]CM

P2 = 1-[0.8937]1.2918

P2 = 0.135= 13.5%

Exclusion Criterion of Study Sample

Subjects with general CVD before baseline were excluded (239 males and 136 females). From the remaining 4,638 subjects, we included subjects with complete information on risk factors at exam 5 baseline resulting in 2,359 subjects with full information. The reason for such a decrease in sample size is that of the 4,638 subjects, 2,258 were not assess for glycosylated hemoglobin at the exam 5 baseline and thus were excluded from the analysis.