# *Coronary heart disease risk prediction in the Atherosclerosis Risk in Communities (ARIC) study*

Chambless et all, J Clin Epidemiol. 2003 Sep;56(9):880-90

A. Attached below are the beta coefficients from the Cox regression models for the full models presented in Table 4 (Rows 2,4) of the referenced paper. The total cholesterol and HDL cholesterol variables were categorized as follows, and sometimes further collapsed as indicated in the individual models, e.g, tccat23 means that total cholesterol categories 2 and 3 were combined.

Total cholesterol <200 mg/dl ←→ tccat = 1
200<=tc<240 ←→tccat = 2
240<=tc<280 ←→ tccat = 3
280<=tc ←→ tccat = 4

hdl < 35 mg/dl ←→ hdlcat = 1
35 <= hdl01 < 45 ←→ hdlcat = 2
45 <= hdl01 < 50 ←→ hdlcat = 3
50 <= hdl01 < 60 ←→ hdlcat = 4
60 <= hdl01 ←→ hdlcat = 5

NEWAGE=(AGE - 55)/10

| Black Females | |
|---|---|
| **Variable** | **Parameter Estimate** |
| NEWAGE | 0.426889 |
| $NEWAGE^2$ | -0.137994 |
| tccat23 | -0.168286 |
| TCCAT4 | 0.404777 |
| HDLCAT1 | 1.271867 |
| hdlcat23 | 0.332718 |
| HDLCAT4 | 0.051743 |
| SBP (mmHg) | 0.029017 |
| HYPT MEDS | 0.774449 |
| DIABETES | 0.522772 |
| CUR SMKOKING | 0.975575 |
| BMI ($kg/m^2$) | 0.003741 |
| IMT (mm) | 1.273357 |
| Lp(a) (µg/ml) | -0.000028143 |
| vWF (%) | 0.002978 |
| FIBRINOGEN(mg/dl) | 0.002052 |
| $FEV_1$ residual(l) | -0.586725 |
| HR (beats/min) | 0.008077 |
| PACK-YR Cigs | -0.004375 |
| WAIST/HIP | 0.869413 |
| KEYS SCORE | -0.004994 |
| SPORT Activity | 0.046813 |
| Factor VII | 0.004400 |

| Black Males | |
|---|---|
| **Variable** | **Parameter Estimate** |
| NEWAGE | 0.426355 |
| $NEWAGE^2$ | -0.194535 |
| TCCAT2 | 0.085005 |
| TCCAT3 | 0.274326 |
| TCCAT4 | 0.361227 |
| HDLCAT1 | 0.867157 |
| hdlcat23 | 0.527707 |
| HDLCAT4 | 0.120823 |
| SBP | 0.003513 |
| HYPT MEDS | 0.604167 |
| DIABTSO3 | 0.325265 |
| CUR SMKOKING | 0.504536 |
| BMI | -0.065799 |
| IMT (mm) | 1.186536 |
| Lp(a) (µg/ml) | 0.000152 |
| vWF (%) | 0.002398 |
| FIBRINOGEN(mg/dl) | -0.001715 |
| $FEV_1$ residual(l) | 0.013631 |
| HR (beats/min) | -0.000716 |
| PACK-YR Cigs | 0.000348 |
| WAIST/HIP | 4.743231 |
| KEYS SCORE | -0.001067 |
| SPORT Activity | -0.172902 |
| Factor VII (%) | 0.006604 |

Additional results not in the published September 2003 Journal of Clinical Epidemiology article
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| White Females | |
|---|---|
| **Variable** | **Parameter Estimate** |
| NEWAGE | 0.318004 |
| $NEWAGE^2$ | -0.163955 |
| TCCAT2 | 0.699171 |
| TCCAT3 | 0.761724 |
| TCCAT4 | 0.857383 |
| HDLCAT1 | 1.259637 |
| hdlcat23 | 0.927317 |
| HDLCAT4 | 0.681763 |
| SBP | 0.009552 |
| HYPT MEDS | 0.653430 |
| DIABTSO3 | 1.123927 |
| CUR SMKOKING | 0.742434 |
| BMIO1 | -0.022313 |
| IMT (mm) | 0.930101 |
| Lp(a) (µg/ml) | 0.001458 |
| vWF (%) | 0.000466 |
| FIBRINOGEN(mg/dl) | 0.000780 |
| $FEV_1$ residual(l) | -0.093513 |
| HR (beats/min) | 0.004885 |
| PACK-YR Cigs | 0.006110 |
| WAIST/HIP | 0.422542 |
| KEYS SCORE | 0.017187 |
| SPORT Activity | -0.159752 |
| Factor VII (%) | -0.001986 |

| White Males | |
|---|---|
| **Variable** | **Parameter Estimate** |
| NEWAGE | 0.118024 |
| $NEWAGE^2$ | -0.179104 |
| TCCAT2 | 0.365641 |
| tccat34 | 0.681801 |
| HDLCAT1 | 1.234384 |
| HDLCAT2 | 0.817082 |
| HDLCAT3 | 0.531463 |
| HDLCAT4 | 0.548335 |
| SBP | 0.014496 |
| HYPT MEDS | 0.077384 |
| DIABTSO3 | 0.659681 |
| CUR SMKOKING | -0.020837 |
| BMIO1 | -0.032229 |
| IMT (mm) | 1.137308 |
| Lp(a) (µg/ml) | 0.001196 |
| vWF (%) | 0.001849 |
| FIBRINOGEN(mg/dl) | 0.002363 |
| $FEV_1$ residual(l) | 0.005322 |
| HR (beats/min) | -0.004010 |
| PACK-YR Cigs | 0.001705 |
| WAIST/HIP | -0.284736 |
| KEYS SCORE | 0.019124 |
| SPORT Activity | -0.107083 |
| Factor VII (%) | -0.000507 |

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B. Attached below are the beta coefficients from the Cox regression models for the basic models presented in the referenced paper. We also add the values of (1) $S_0$. = 1 – $P_0$ = Probability of no incident CHD event within 10 years for a person with the reference (zero) level of the categorical exposure variables and the median level of the continuous exposure variables (medians for SBP are 119, for newage -0.1 at this value of newage$^2$ was 0.01) and (2) 1000 $RS_0$, where $RS_0$ is the value of the risk score (sum of probabilities or exposure x both coefficients) for persons at levels at which $S_0$ is calculated. Predicted 10 year risk, P, for a person with risk score RS is then calculated as 1-P = $(1\text{-}P_0)^{\exp (RS\text{-}RS_0)}$, under a proportional hazards assumption.

| **Black Females** | |
|---|---|
| **Variable** | **Parameter Estimate** |
| NEWAGE | 0.31989 |
| NEWAGE$^2$ | -0.090856 |
| tccat23 | 0.11730 |
| TCCAT4 | 0.81459 |
| HDLCAT1 | 1.07081 |
| hdlcat23 | 0.39727 |
| HDLCAT4 | 0.23253 |
| SBP (mmHg) | 0.024899 |
| HYPT MEDS | 0.80910 |
| DIABETES | 0.62199 |
| CUR SMKOKING | 1.01048 |
| 1 - $P_0$ | 0.99126 |
| $RS_0$ | 2.93014 |

| **Black Males** | |
|---|---|
| **Variable** | **Parameter Estimate** |
| NEWAGE | 0.63186 |
| NEWAGE$^2$ | -0.15692 |
| TCCAT2 | 0.33314 |
| TCCAT3 | 0.37726 |
| TCCAT4 | 0.69569 |
| HDLCAT1 | 0.79192 |
| hdlcat23 | 0.43293 |
| HDLCAT4 | 0.28026 |
| SBP | .002253654 |
| HYPT MEDS | 0.69370 |
| DIABTSO3 | 0.46857 |
| CUR SMKOKING | 0.63094 |
| 1 $\overline{\text{T}}$ $P_0$ | 0.97262 |
| $RS_0$ | 0.20343 |

| White Females | |
|---|---|
| **Variable** | **Parameter Estimate** |
| NEWAGE | 0.39378 |
| $NEWAGE^2$ | -0.22346 |
| TCCAT2 | 0.64727 |
| TCCAT3 | 0.80937 |
| TCCAT4 | 0.93290 |
| HDLCAT1 | 1.20919 |
| hdlcat23 | 0.91366 |
| HDLCAT4 | 0.56967 |
| SBP | 0.015023 |
| HYPT MEDS | 0.58733 |
| DIABTSO3 | 1.08292 |
| CUR SMKOKING | 1.10297 |
| $1 - P_0$ | 0.99391 |
| $RS_0$ | 1.74618 |

| White Males | |
|---|---|
| **Variable** | **Parameter Estimate** |
| NEWAGE | 0.36528 |
| $NEWAGE^2$ | -0.27146 |
| TCCAT2 | 0.44555 |
| tccat34 | 0.77279 |
| HDLCAT1 | 1.27295 |
| HDLCAT2 | 0.91780 |
| HDLCAT3 | 0.65401 |
| HDLCAT4 | 0.61373 |
| SBP | 0.013634 |
| HYPT MEDS | 0.12000 |
| DIABTSO3 | 0.78304 |
| CUR SMKOKING | 0.37602 |
| $1 - P_0$ | 0.97046 |
| $RS_0$ | 1.58326 |

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