

## Appendix

<b>D:A:D Cardiovascular Disease 5 year risk score</b>		
<b>Factor</b>	<b>Variable name</b>	<b>Unit</b>
<b>Age</b>	age	Years
<b>Sex</b>	male (male=1, female=0)	Male/Female
<b>Previous smoker</b>	exsmk (ex-smoker=1, non-smoker=0)	Yes/No
<b>Current smoker</b>	cursmk (current smoker=1, non-smoker=0)	Yes/ No
<b>Family CVD history</b>	fam (family history=1, no family history=0)	Yes/ No
<b>Diabetes</b>	diab (diabetic=1, non-diabetic=0)	Yes/ No
<b>Abacavir Treatment</b>	abc (currently on abacavir=1, not on abacavir=0)	Yes/ No
<b>Protease Inhibitor (PI) Exposure</b>	cumpi	Years
<b>NRTI Exposure</b>	cumnrti	Years
<b>Time-updated CD4 cell count</b>	cd4	Cells/ $\mu$ L
<b>Systolic blood pressure</b>	syst	mm Hg
<b>Total cholesterol</b>	chol	mmol/L
<b>HDL</b>	hdl	mmol/L

**Calculating the risk score:** The predicted covariate score is calculated first, normalised to the mean covariate value

### **Full D:A:D model**

$$\begin{aligned}
 A = & ( 3.0904 * \ln(\text{age}) + 0.313892 * \text{male} + 0.6749906 * \text{diab} + 0.3143615 * \text{fam} + 0.8088174 * \text{cursmk} + \\
 & 0.2129574 * \text{exsmk} + 0.9481744 * \ln(\text{chol}) - 0.500635 * \ln(\text{hdl}) + 1.523599 * \ln(\text{syst}) - 0.1188231 * \ln(2(\text{cd4})) + \\
 & 0.3838412 * \text{abc} + 0.0466745 * \text{cumpi} + 0.0278108 * \text{cumnrti} ) \\
 - & ( 3.0904 * \ln(40.412) + 0.313892 * 0.7442 + 0.6749906 * 0.0308 + 0.3143615 * 0.0840 + 0.8088174 * 0.5217 + \\
 & 0.2129574 * 0.1670 + 0.9481744 * \ln(5.001) - 0.500635 * \ln(1.214) + 1.523599 * \ln(123.651) - \\
 & 0.1188231 * \ln(2(482.099)) + 0.3838412 * 0.1365 + 0.0466745 * 1.718 + 0.0278108 * 3.313 )
 \end{aligned}$$

The Cox five-year survival at the mean values of predictors,  $S(5)=0.9853$ , is used to calculate the five-year predicted risk

$$\text{Predicted risk} = 1 - 0.9853^{\exp(A)}$$

**Reduced D:A:D model**

B = ( 3.1777\*ln(age) + 0.343856\*male + 0.7311945\*diab + 0.329772\*fam + 0.8157995\*cursmk  
+ 0.2394822\*exsmk + 1.0925460\*ln(chol) - 0.5194359\*ln(hdl) + 1.517874\*ln(syst) -  
0.1137227\*ln2(cd4) )

-  
( 3.1777\*ln(40.412) + 0.343856\*0.7442 + 0.7311945\*0.0308 + 0.3297720\*0.0840 +  
0.8157995\*0.5217 + 0.2394822\*0.1670 + 1.0925460\*ln(5.001) - 0.519436\*ln(1.214) +  
1.517874\*ln(123.651) - 0.1137227\*ln2(482.099) )

Predicted risk = 1 - 0.9853<sup>exp(B)</sup>

Full model is used when the cumulative NRTI exposure is up to 10 years, and PI exposure up to 6 years. For individuals who are exposed to either NRTI or PI beyond these time periods, the reduced D:A:D model is used to prevent overestimation of CVD risk.