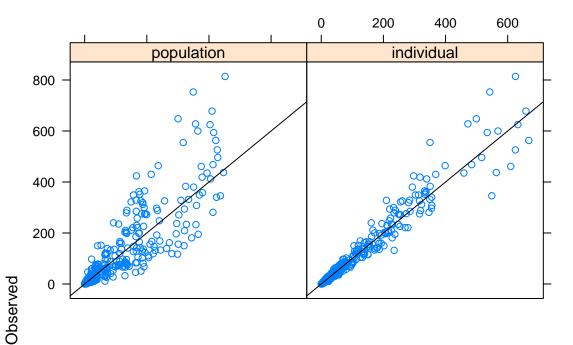
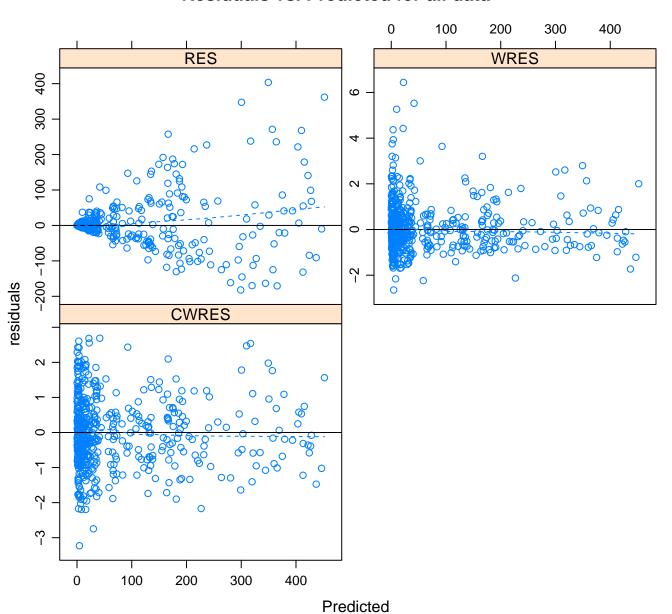
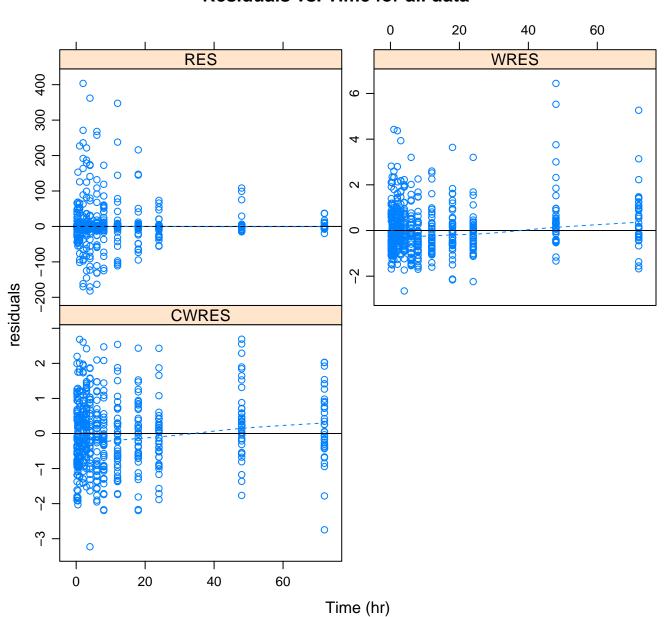
# Model 1005 Observed vs. Predicted for all data



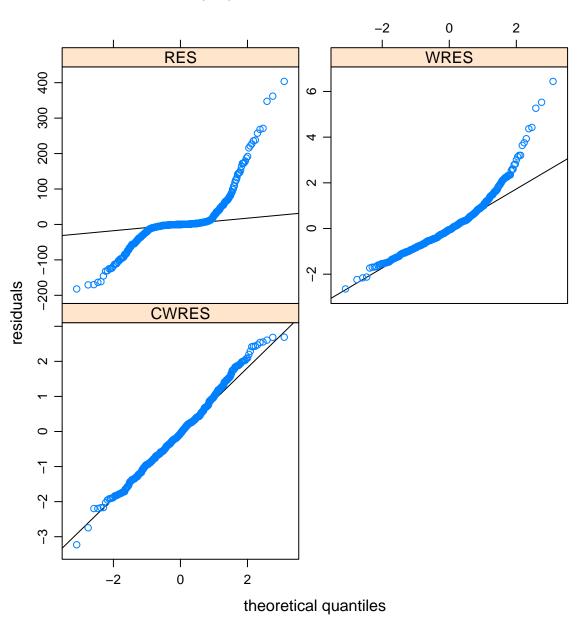
Model 1005
Residuals vs. Predicted for all data



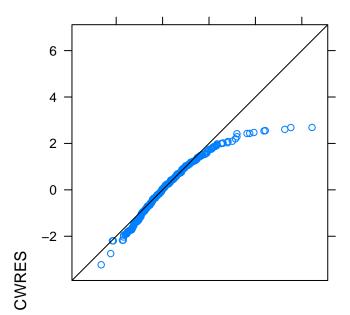
Model 1005 Residuals vs. Time for all data



Model 1005
Normal Q-Q Plot Residuals for all data



# Model 1005 Q-Q Plot of CWRES vs. WRES for all data



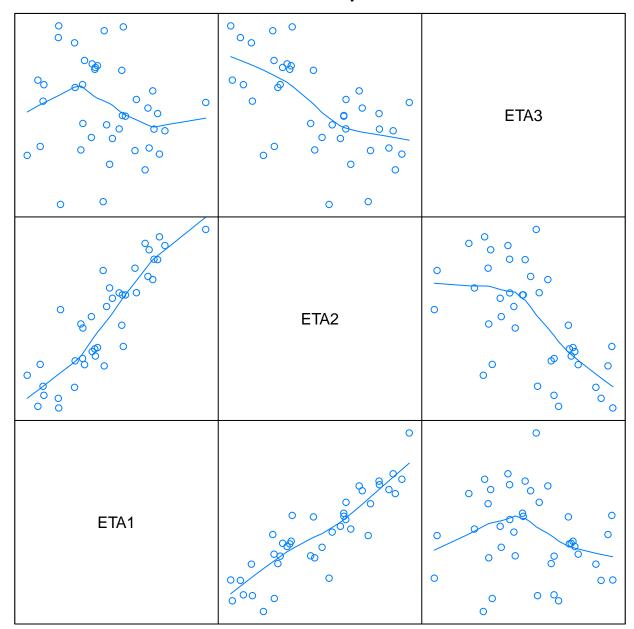
## **Covariate Scatterplots**



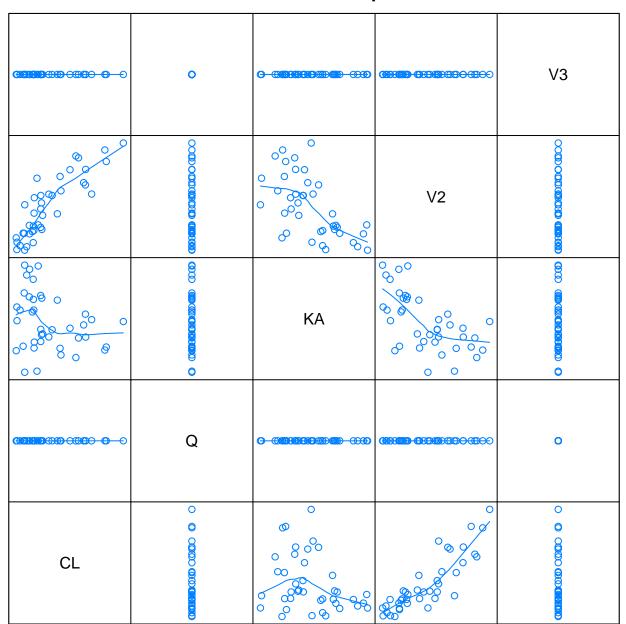
## **Continuous Covariates vs. Categorical Covariates**



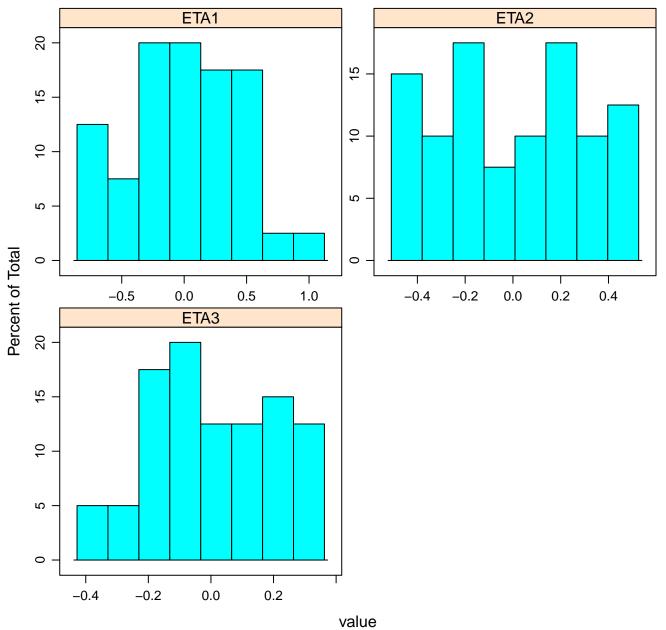
## **ETA Scatterplots**



## **Parameter Scatterplots**

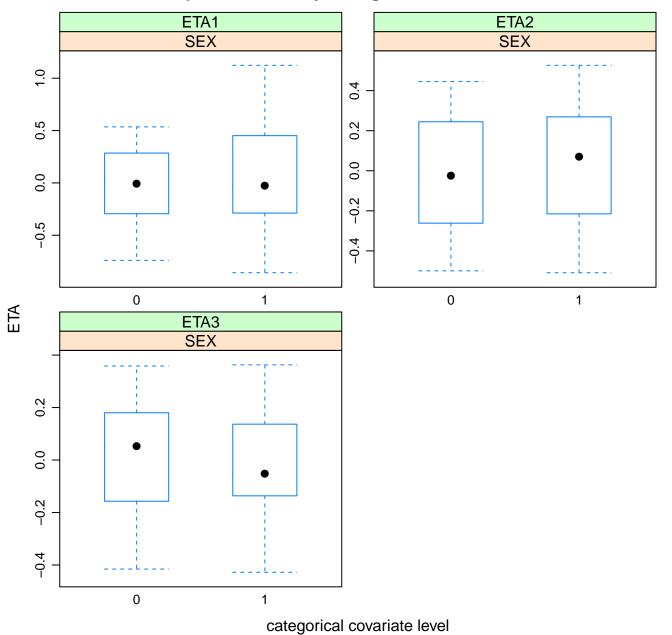


**Histograms of Etas** 

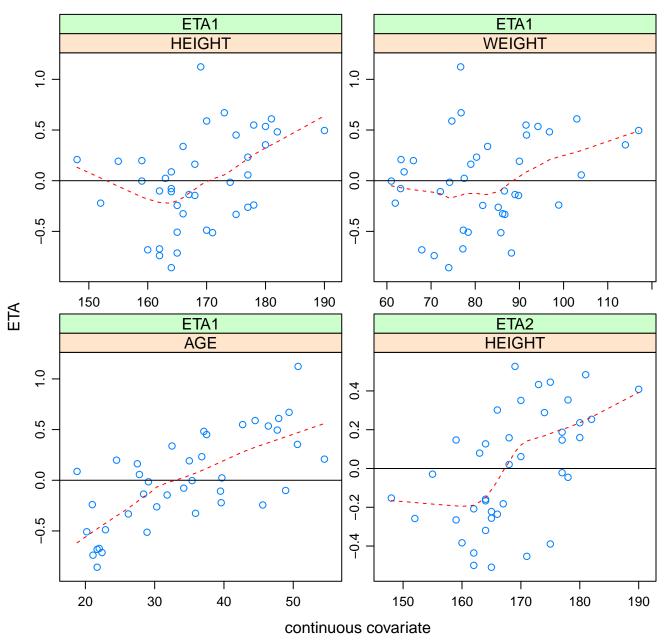


**Density of Etas** ETA1 ETA2 0.8 1.0 9.0 0.8 9.0 0.4 0.4 0.2 0.0 0.0 0 0000 Density -1 0 -0.5 0.0 0.5 1.0 ETA3 1.5 0.1 0.5 0.0 0.5 -0.5 0.0 value

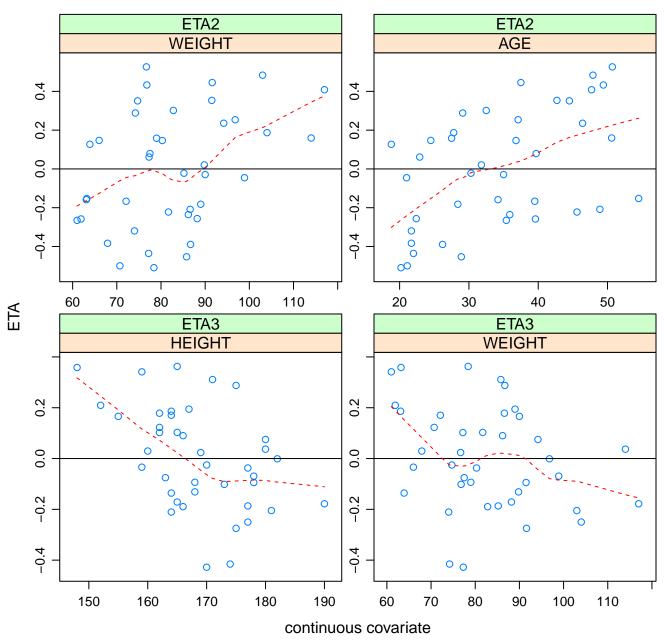
# **Boxplots of Etas by Categorical Covariate**



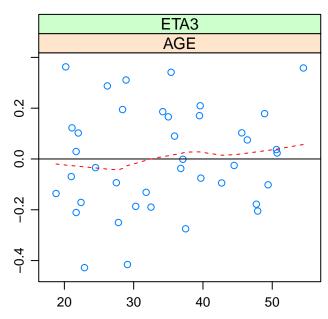
**Etas vs. Continuous Covariates** 



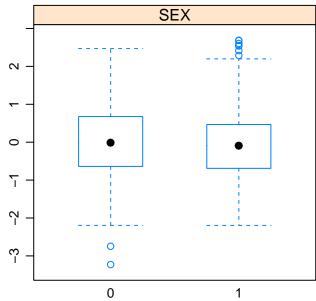
**Etas vs. Continuous Covariates** 



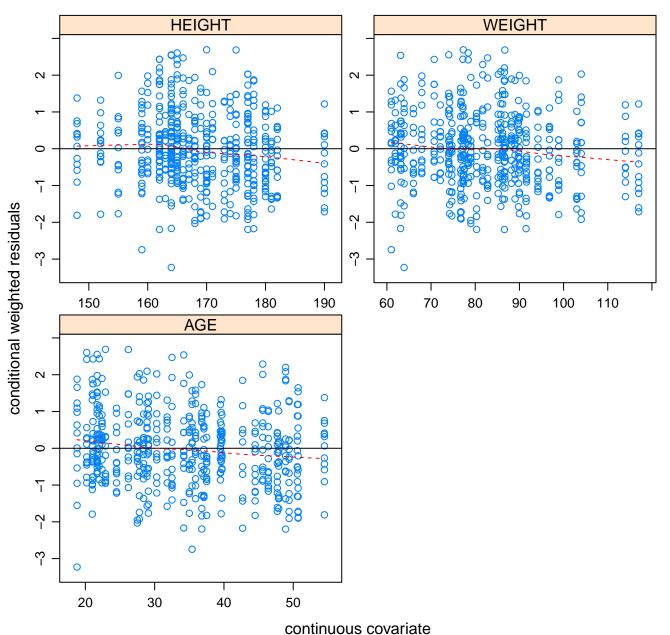
#### **Etas vs. Continuous Covariates**



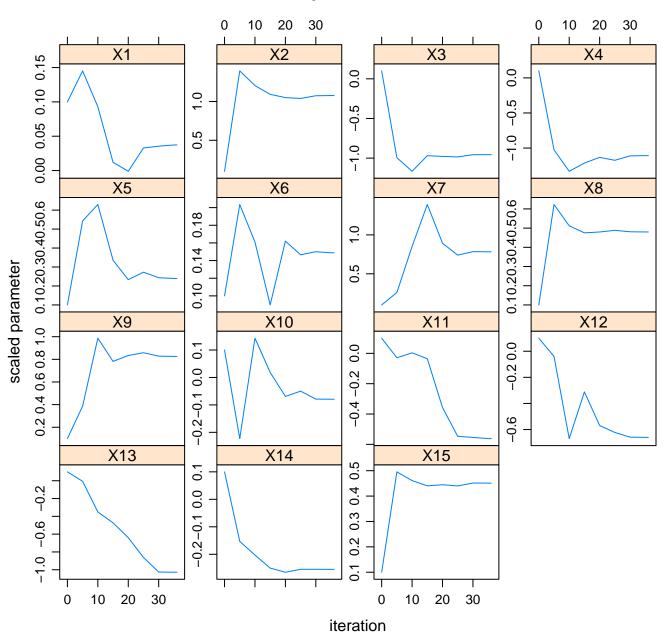
# **CWRES vs. Categorical Covariates**



#### **CWRES vs. Continuous Covariates**



## Model 1005 parameter search



## Model 1005 gradient search

