

Univariate Cox regression to identify the **conventional** mortality predictors



Multivariate Cox regression to identify the independent conventional predictors: BMI, frailty index and cf-DNA level



Dimension reduction (feature selection) using penalized Ridge regression model containing the conventional markers and the transcriptomic data



Cox multivariate model to identify the final mortality-predicting signature



Network analysis for the final **signature transcripts** to elucidate the underlying **biology**

Univariate Cox regression to identify the mortality-predicting **transcripts** (n=478)



Identification of the independent transcriptomic predictors by adjusting for BMI, frailty index and cf-DNA level (n=331)

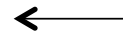


Pathway and network analyses for the 331 transcripts



Evaluation of the Lasso and Ridge penalized models and the C-index boosting algorithm containing the different variable combinations

- a) conventional markers
- b) transcriptomic data
- c) conventional markers and transcriptomic data together



Assessment of model performance:

- discriminative power
- accuracy of predictive modeling
- relative goodness of fit