# Causal Interpretations of b\_j:

Algorithm = logistic regression, x\_j = blood sugar (mg/dL), y = 1 means person has diabetes, b\_j = 0.49, s\_b\_j = 0.12

“If blood sugar is increased by one mg/dL and all other measurements remain constant, the log odds of getting diabetes will resultingly increase by 0.49 ± 0.12 assuming the log odds of getting diabetes is linear in the p covariates”.

Algorithm = Weibull regression, x\_j = blood sugar (mg/dL), y = survival (yr) and b\_j = -0.02, s\_b\_j = 0.007

“If blood sugar is increased by one mg/dL and all other measurements remain constant, the log survival will decrease by 0.02 ± 0.007 assuming survival is Weibull-distributed with log mean linear in the p covariates”.

--OR--

“If blood sugar is increased by one mg/dL and all other measurements remain constant, the survival will decrease by 2.0% ± [use delta method] assuming survival is Weibull-distributed with log mean linear in the p covariates”.

Algorithm = COXPH, x\_j = blood sugar (mg/dL), y = survival (yr) and b\_j = -0.02, s\_b\_j = 0.007

“If blood sugar is increased by one mg/dL and all other measurements remain constant, the log hazard rate at any time will decrease by 0.02 ± 0.007 assuming the survival process has a hazard rate log linear in the p covariates”.

# Correlational Interpretations of b\_j:

A = COXPH, x\_j = blood sugar (mg/dL), y = survival (yr) and b\_j = -0.02, s\_b\_j = 0.007

“When comparing two observations A and B sampled in the same fashion as the observations in the historical dataset were sampled, when A has blood sugar1 mg/dL larger than (B)’s blood sugar and otherwise shares the same measurement values, then (A) is predicted to have an estimated log hazard rate 0.02 ± 0.007 lower than (B)’s for any time assuming the log hazard rate is linear in the p covariates.