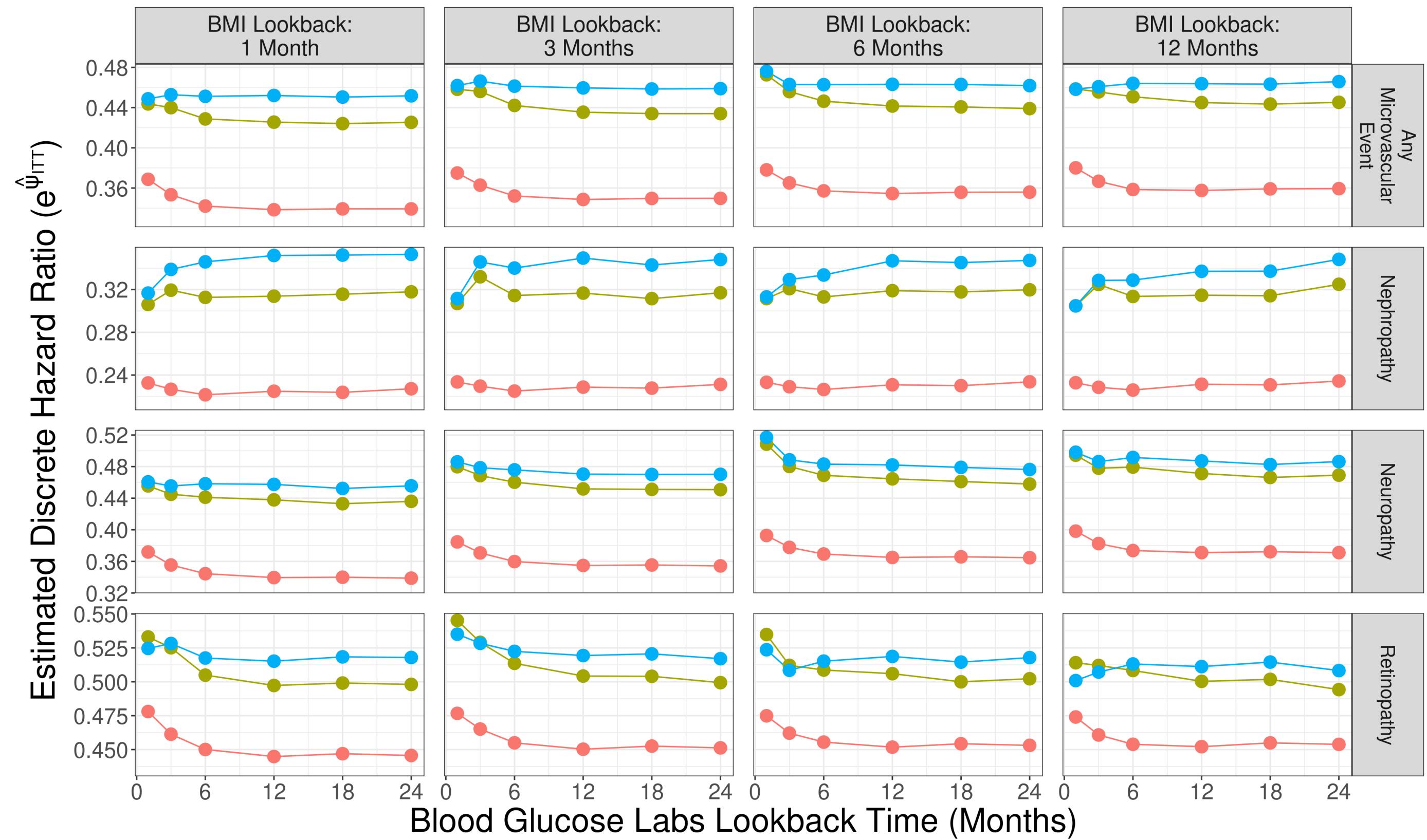


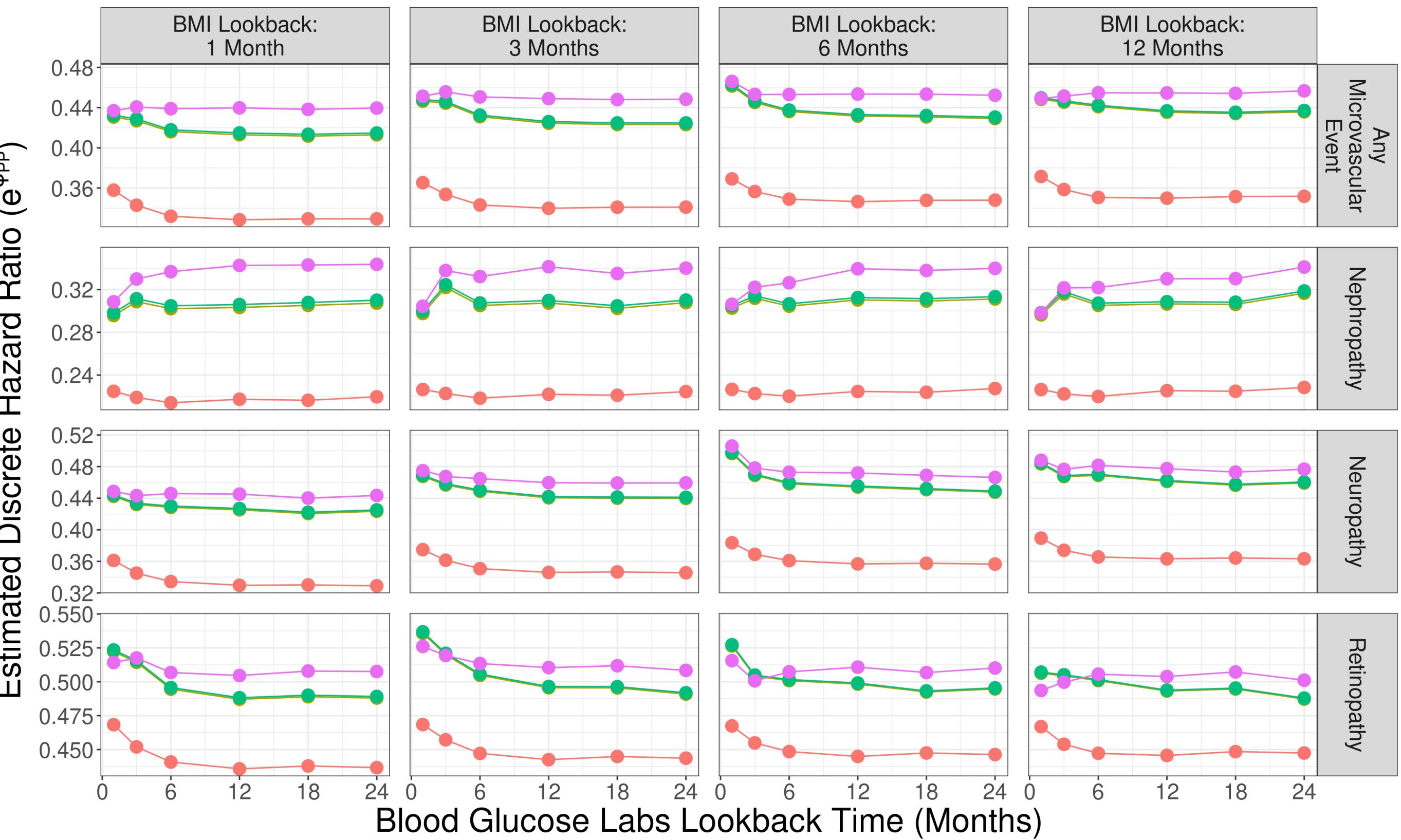
# Effect of Bariatric Surgery on Microvascular Outcomes

## Sensitivity to Various Eligibility Lookback Times

Intention-To-Treat Effect



Per-Protocol Effect

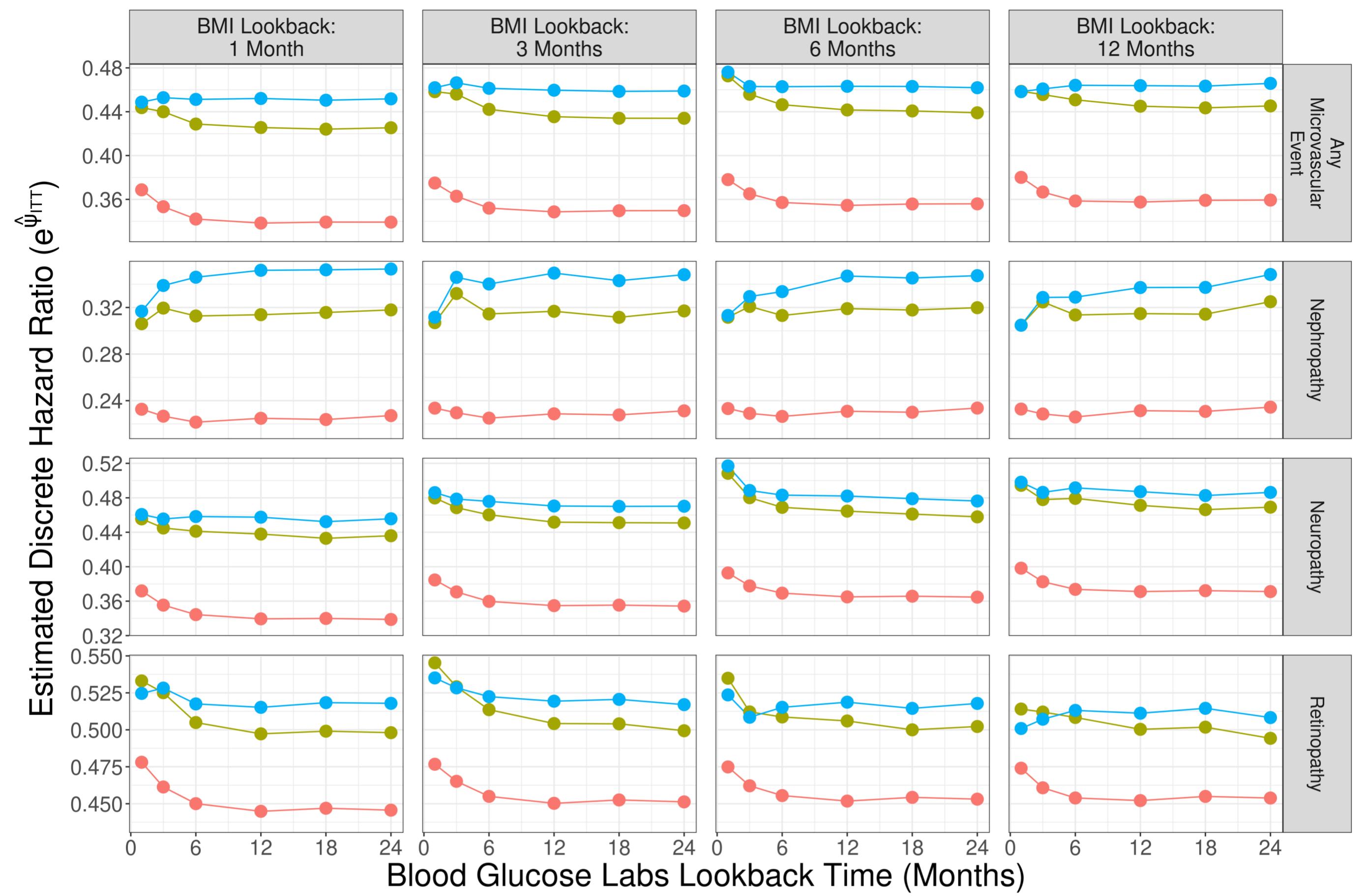


Inverse Probability Weights • Unweighted •  $W^A$  •  $W^A \times W^N$  •  $W^A \times W^R$  •  $W^A \times W^N \times W^R$

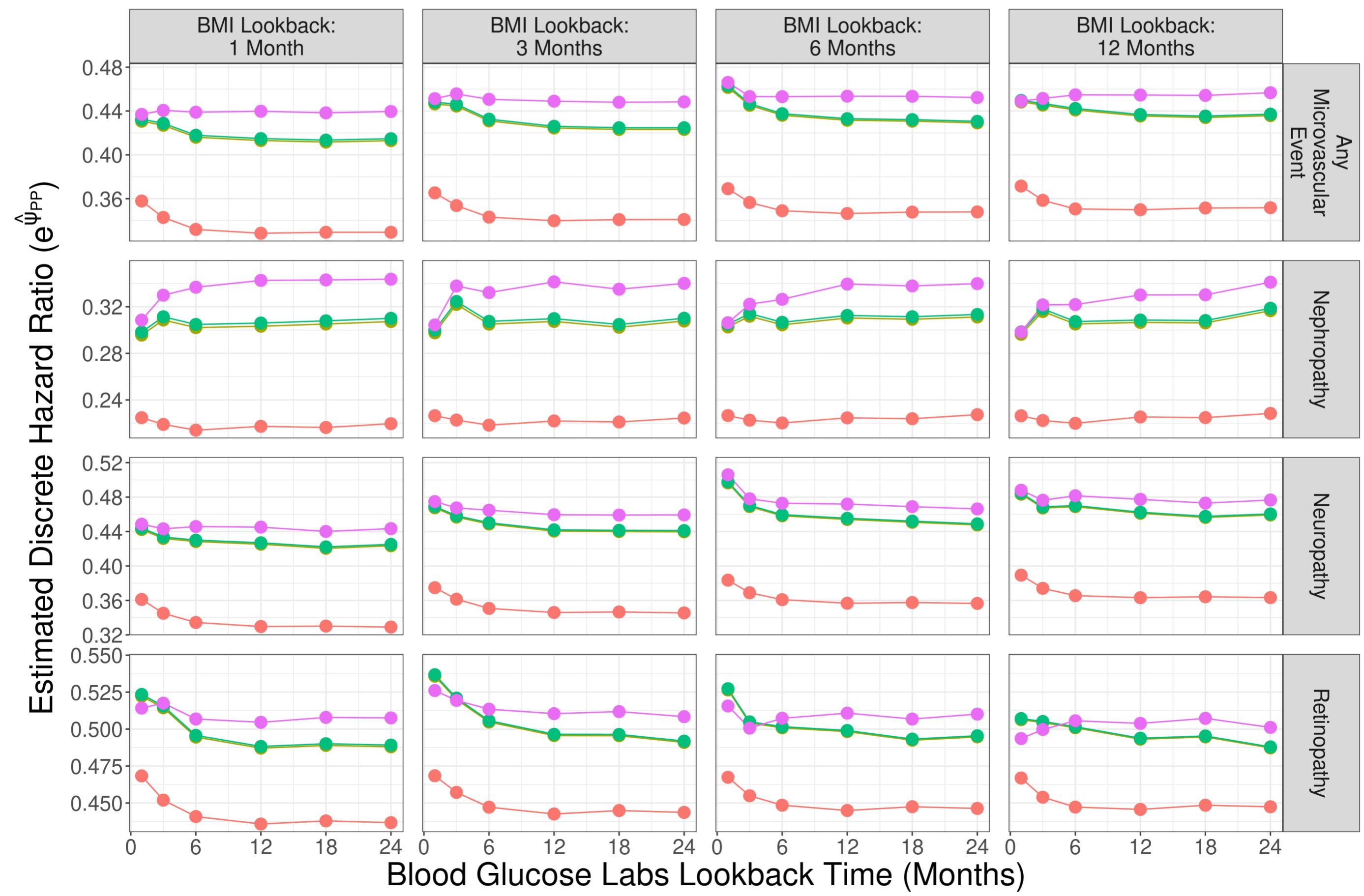
# Effect of Bariatric Surgery on Microvascular Outcomes

## Sensitivity to Various Eligibility Lookback Times

### Intention-To-Treat Effect



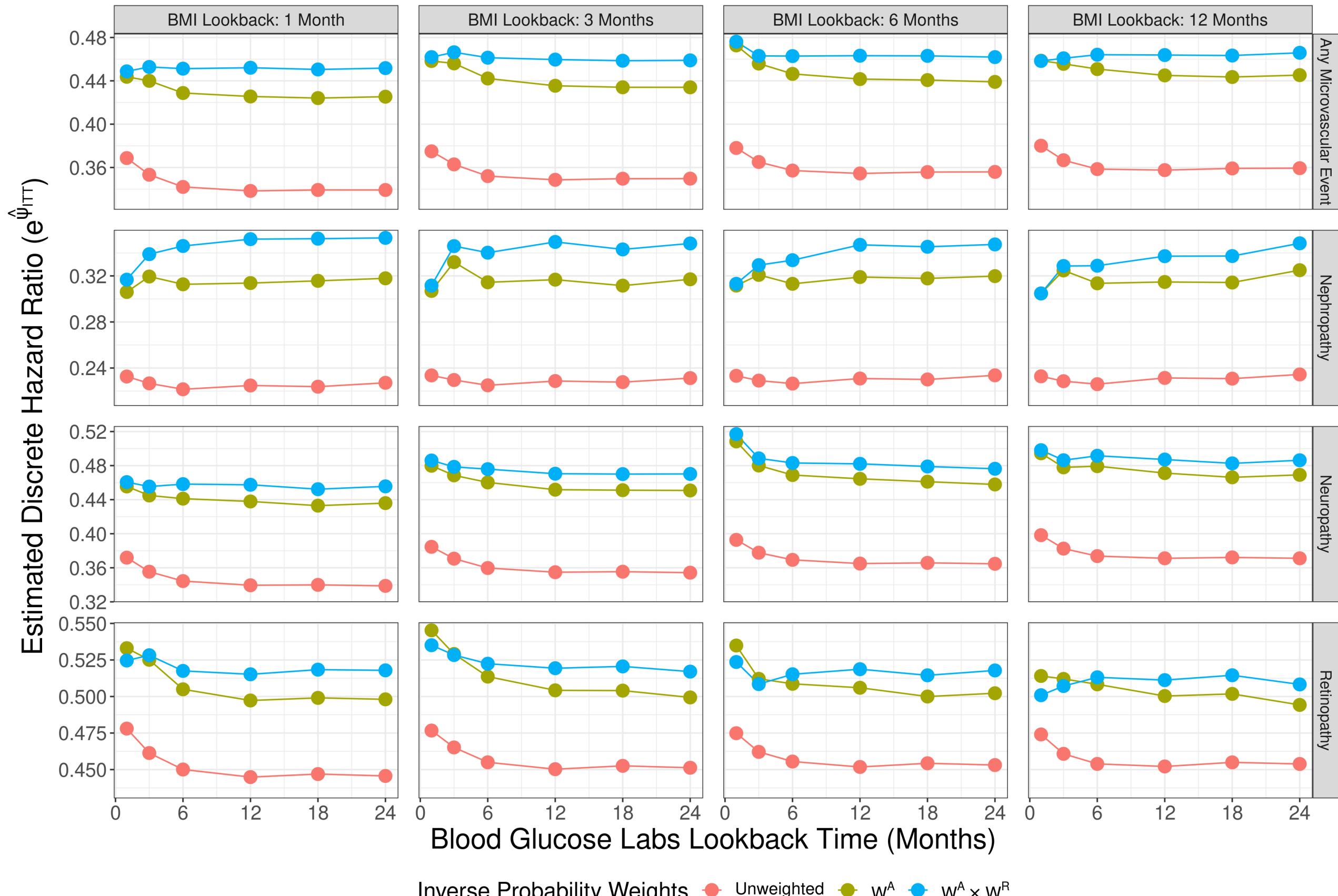
### Per-Protocol Effect



Inverse Probability Weights • Unweighted •  $W^A$  •  $W^A \times W^N$  •  $W^A \times W^R$  •  $W^A \times W^N \times W^R$

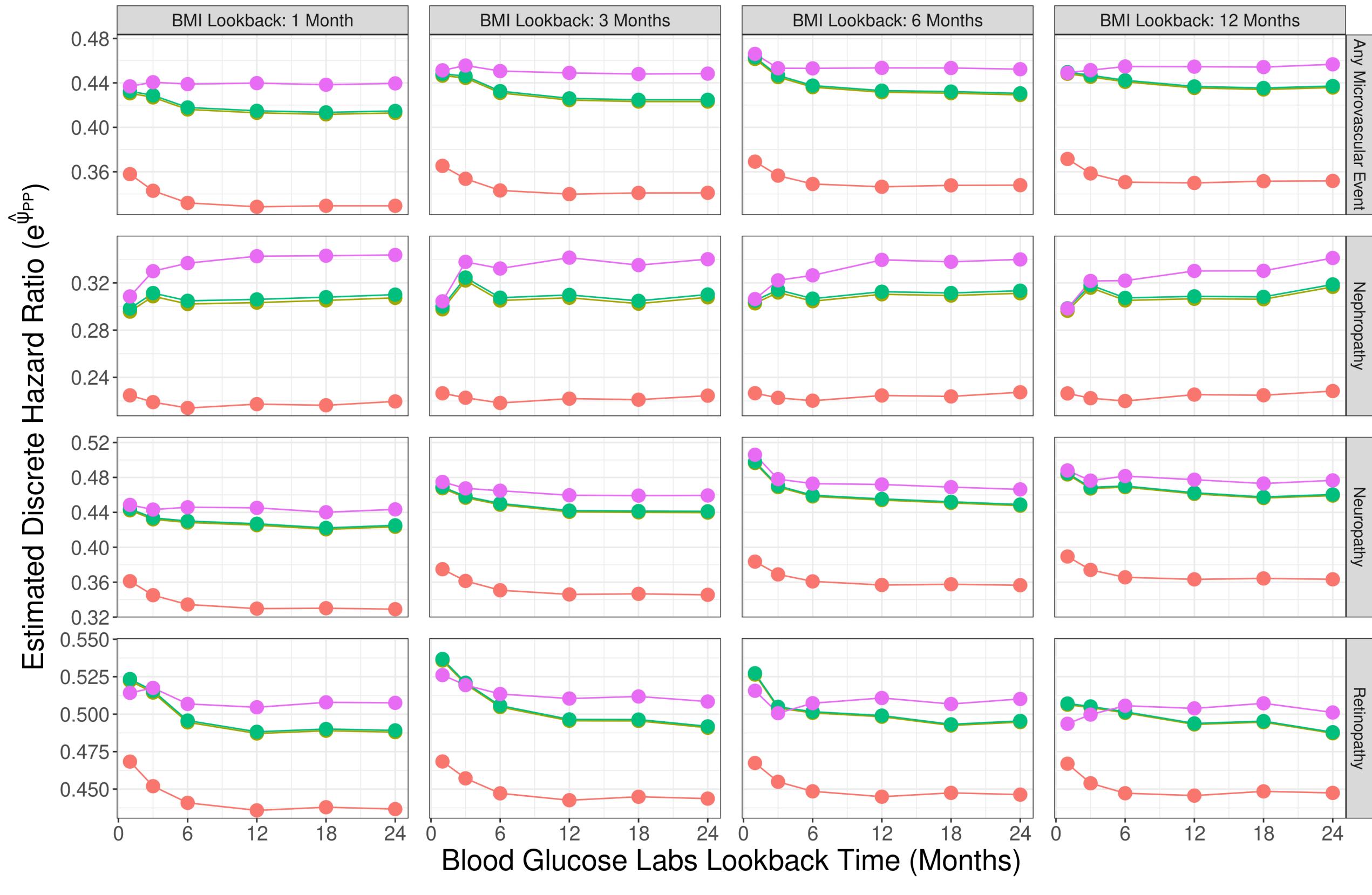
# Effect of Bariatric Surgery on Microvascular Outcomes

## Sensitivity to Various Eligibility Lookback Times



# Effect of Bariatric Surgery on Microvascular Outcomes

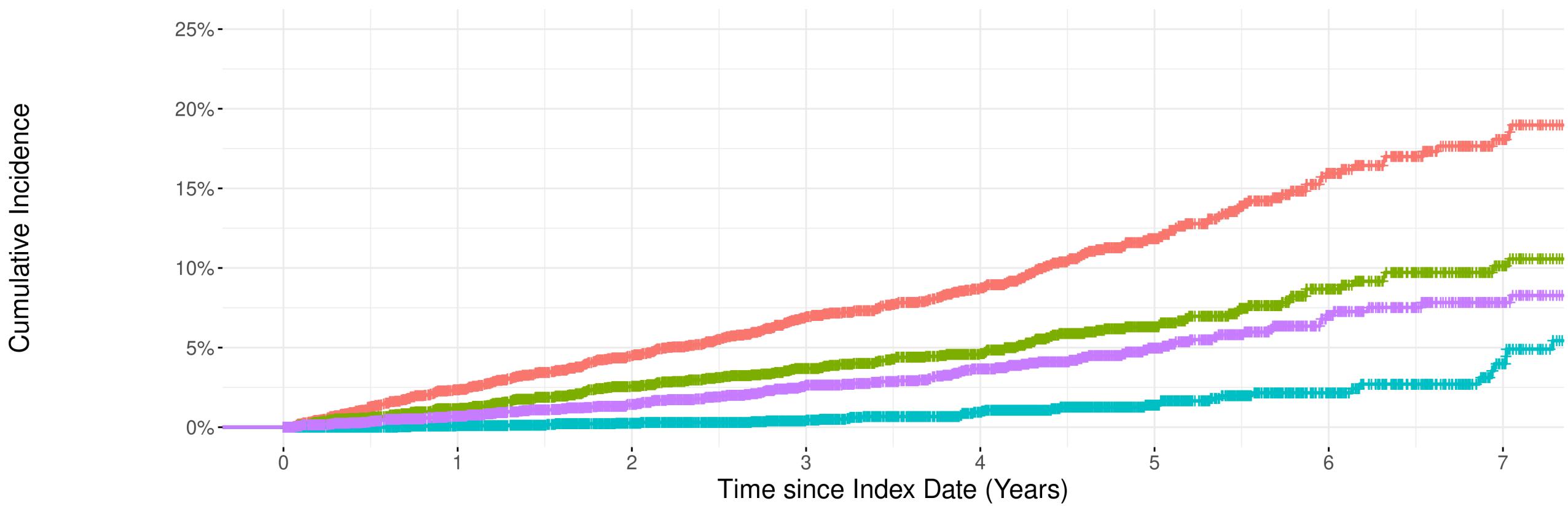
## Sensitivity to Various Eligibility Lookback Times



# Bariatric Surgery Group

## Cumulative Incidence of Microvascular Events

Microvascular Event Neuropathy Nephropathy Retinopathy

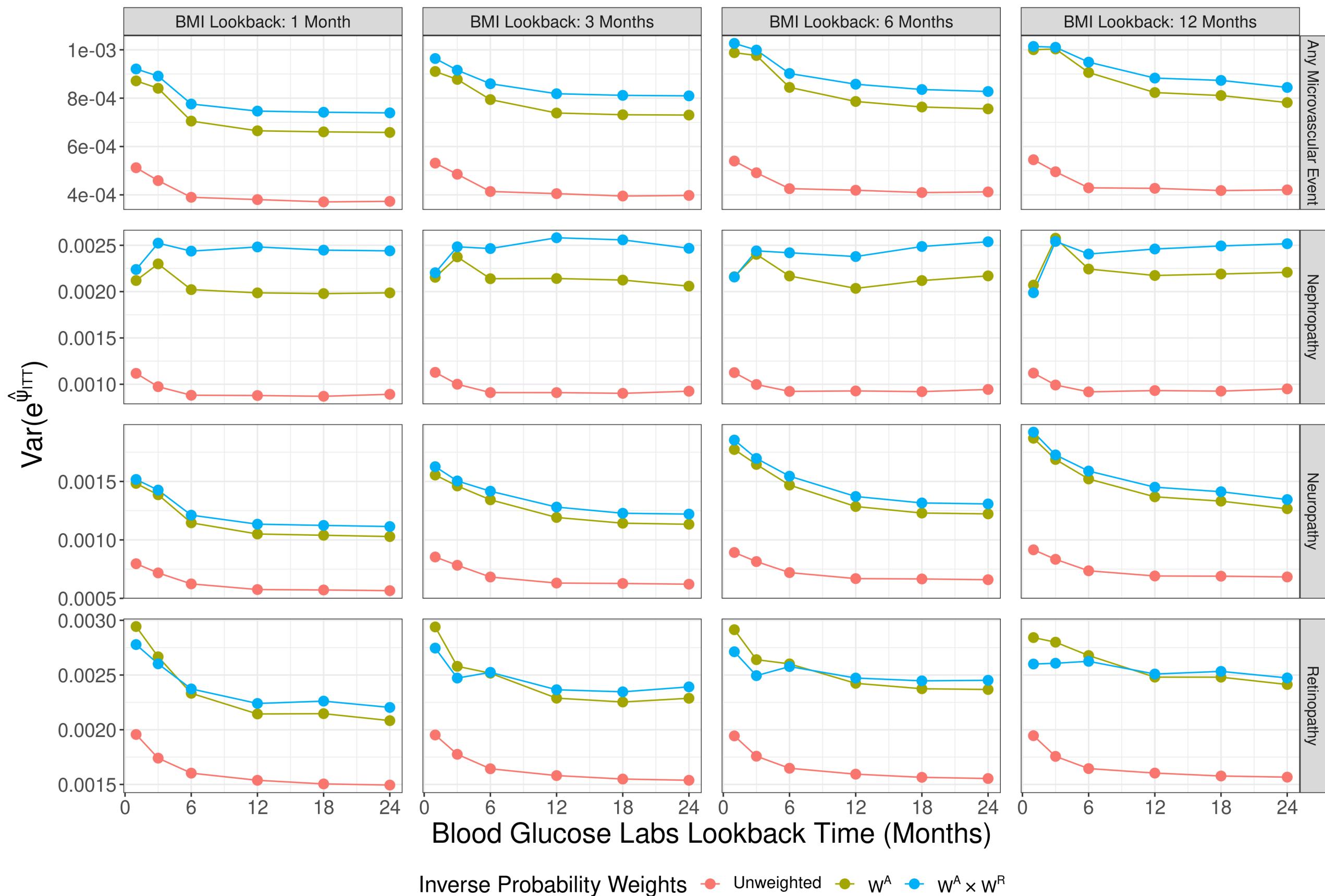


Number at risk

	0	1	2	3	4	5	6	7
Microvascular Event	3418	2859	2335	1826	1361	705	363	189
Neuropathy	3418	2892	2382	1892	1424	754	398	213
Nephropathy	3418	2892	2382	1892	1424	754	398	213
Retinopathy	3418	2904	2408	1912	1430	763	404	217

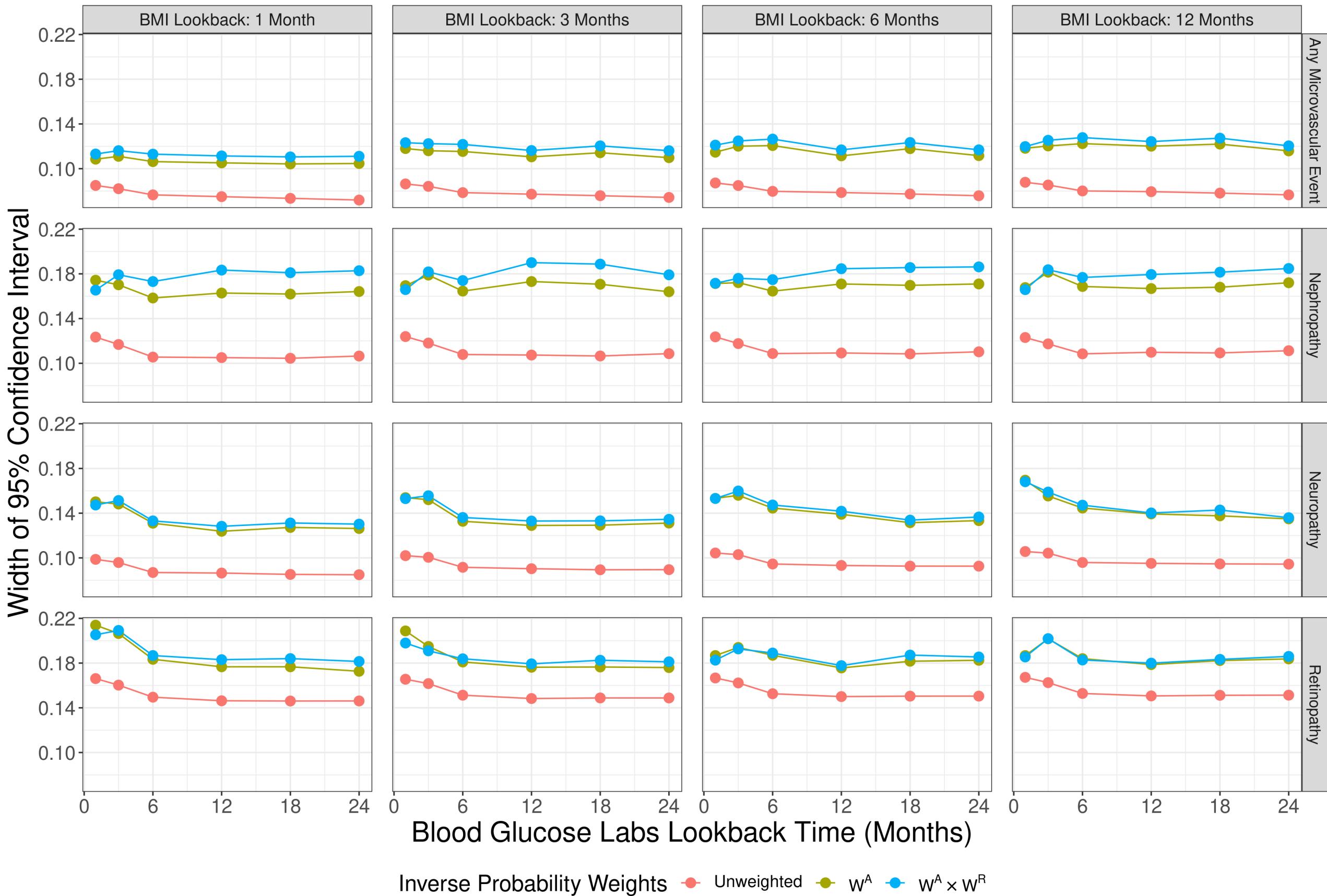
# Variance of IPW Estimators

## 100 Bootstrap Replicates



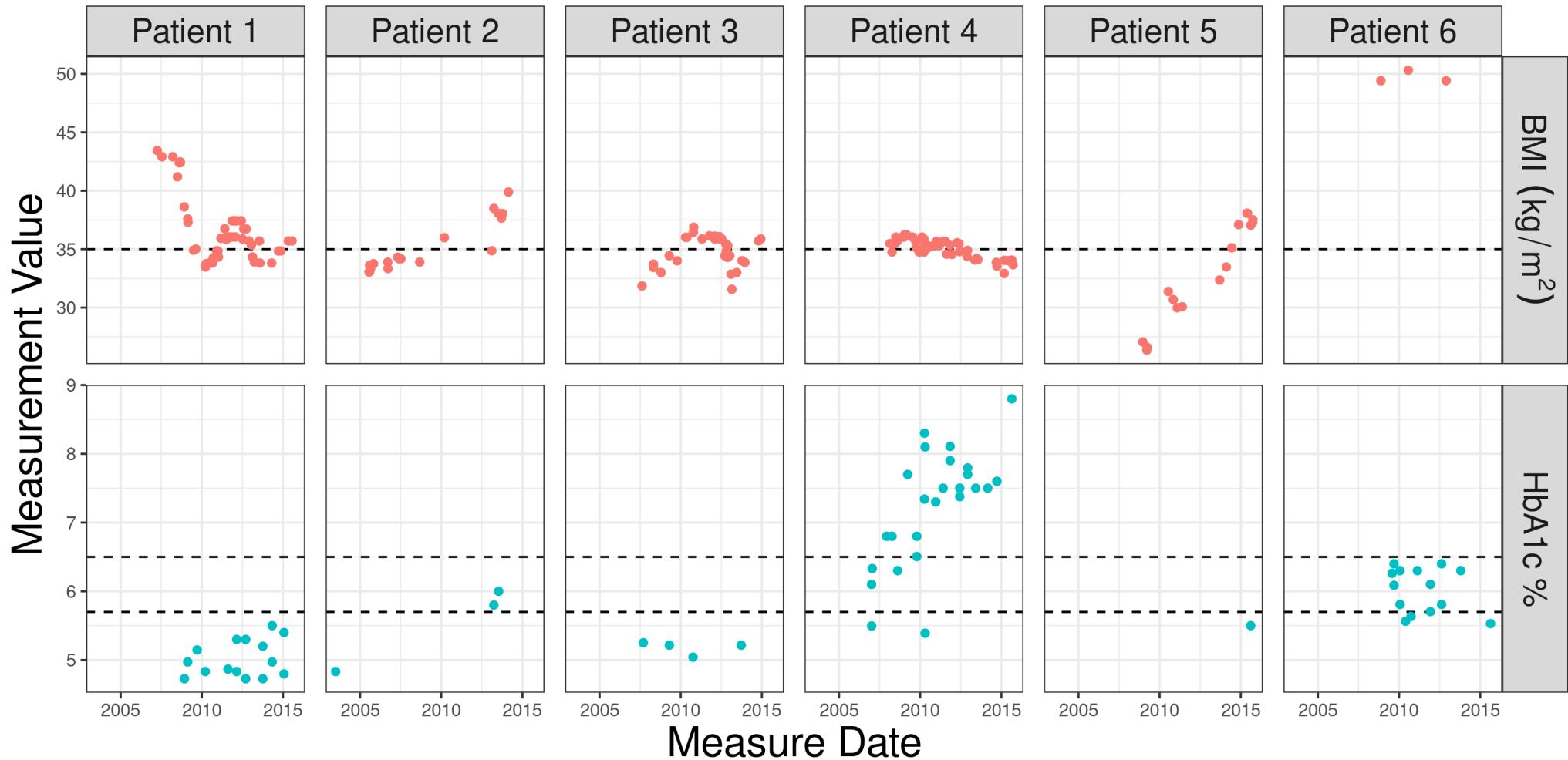
# 95% Confidence Interval Width of IPW Estimators

## 100 Bootstrap Replicates



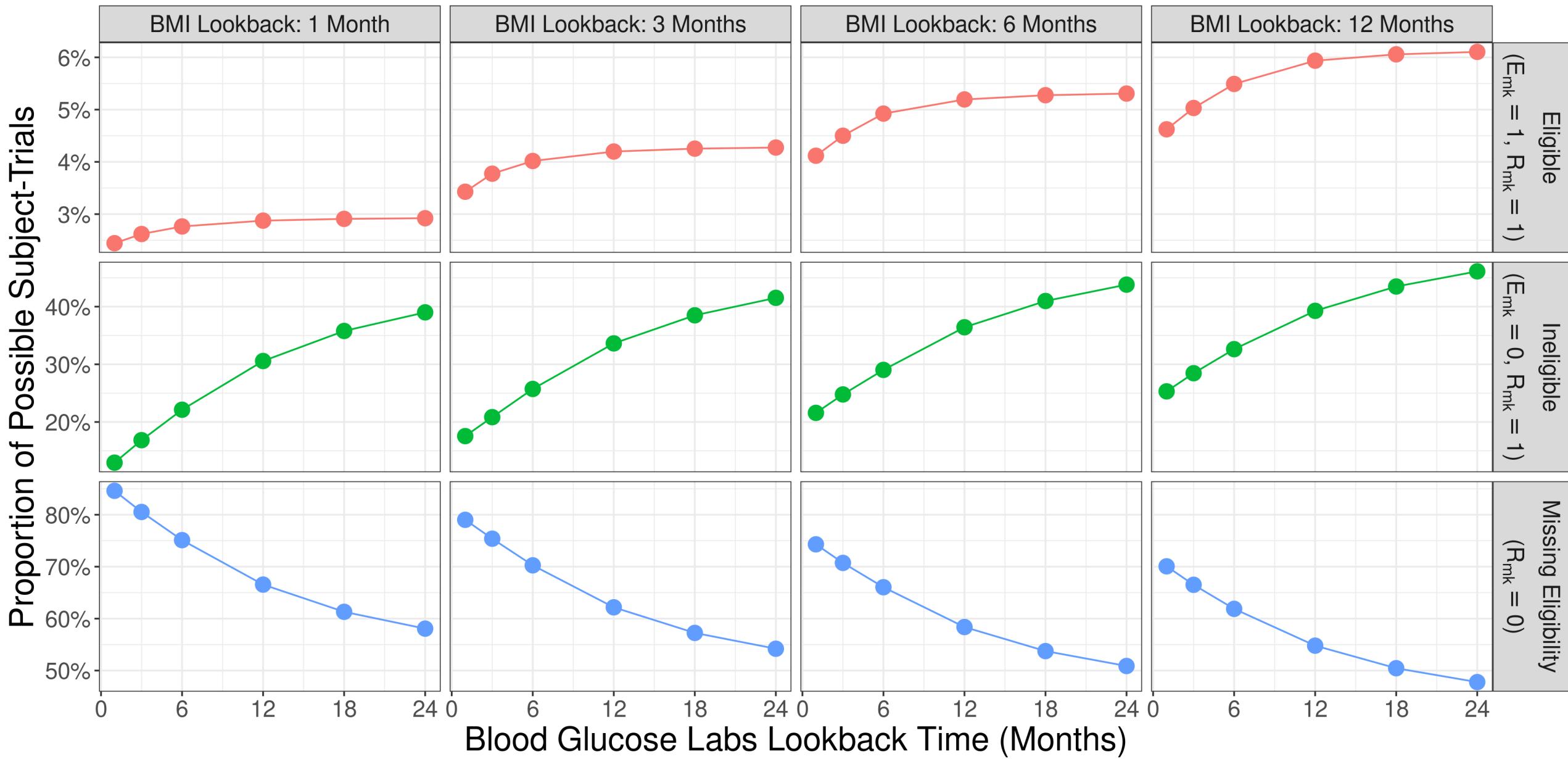
# EHR Derived Measurements

## Select DURABLE Non-Surgical Patients



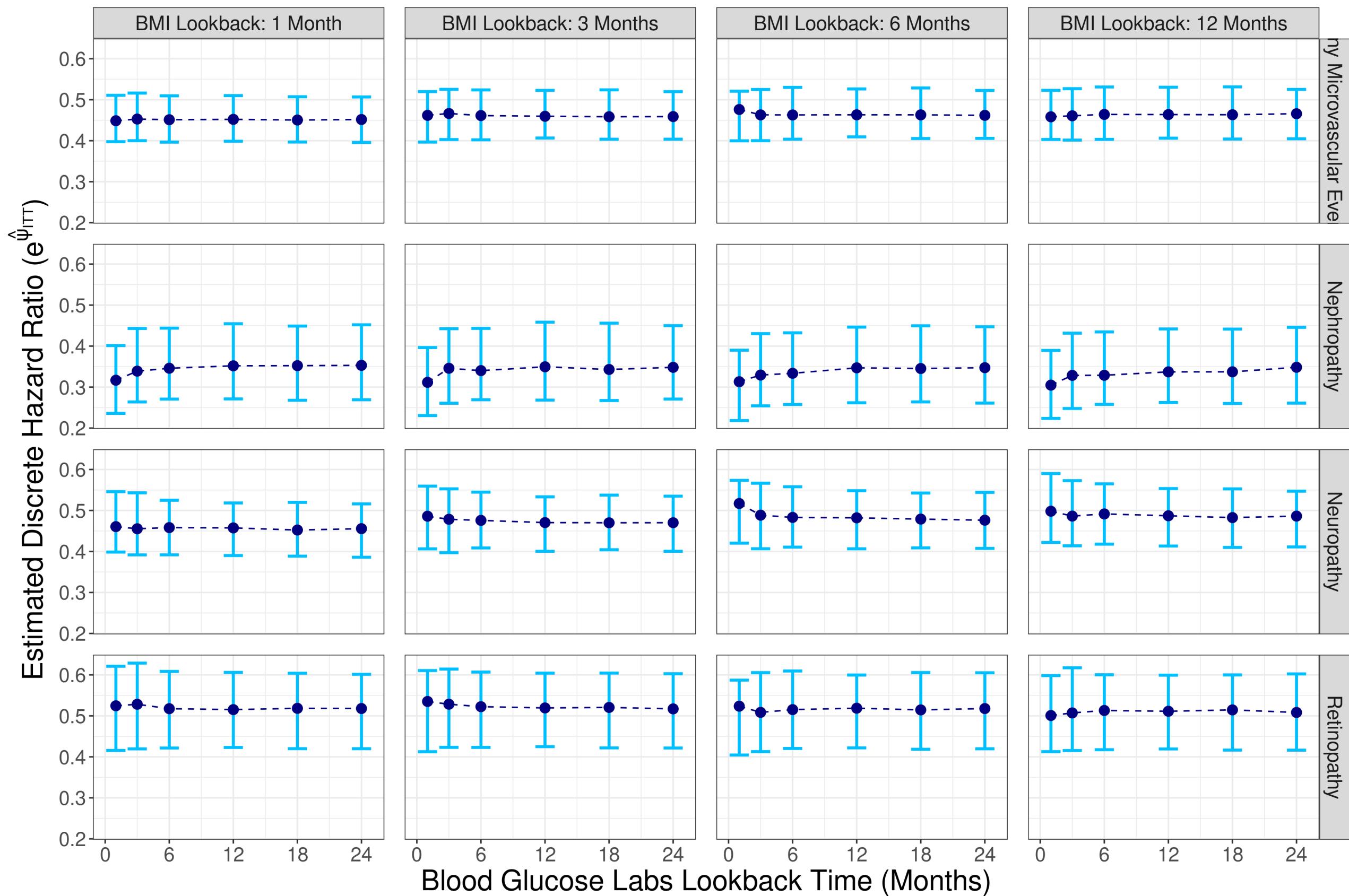
# Distribution of Eligibility Status ( $E_{mk}, R_{mk}$ )

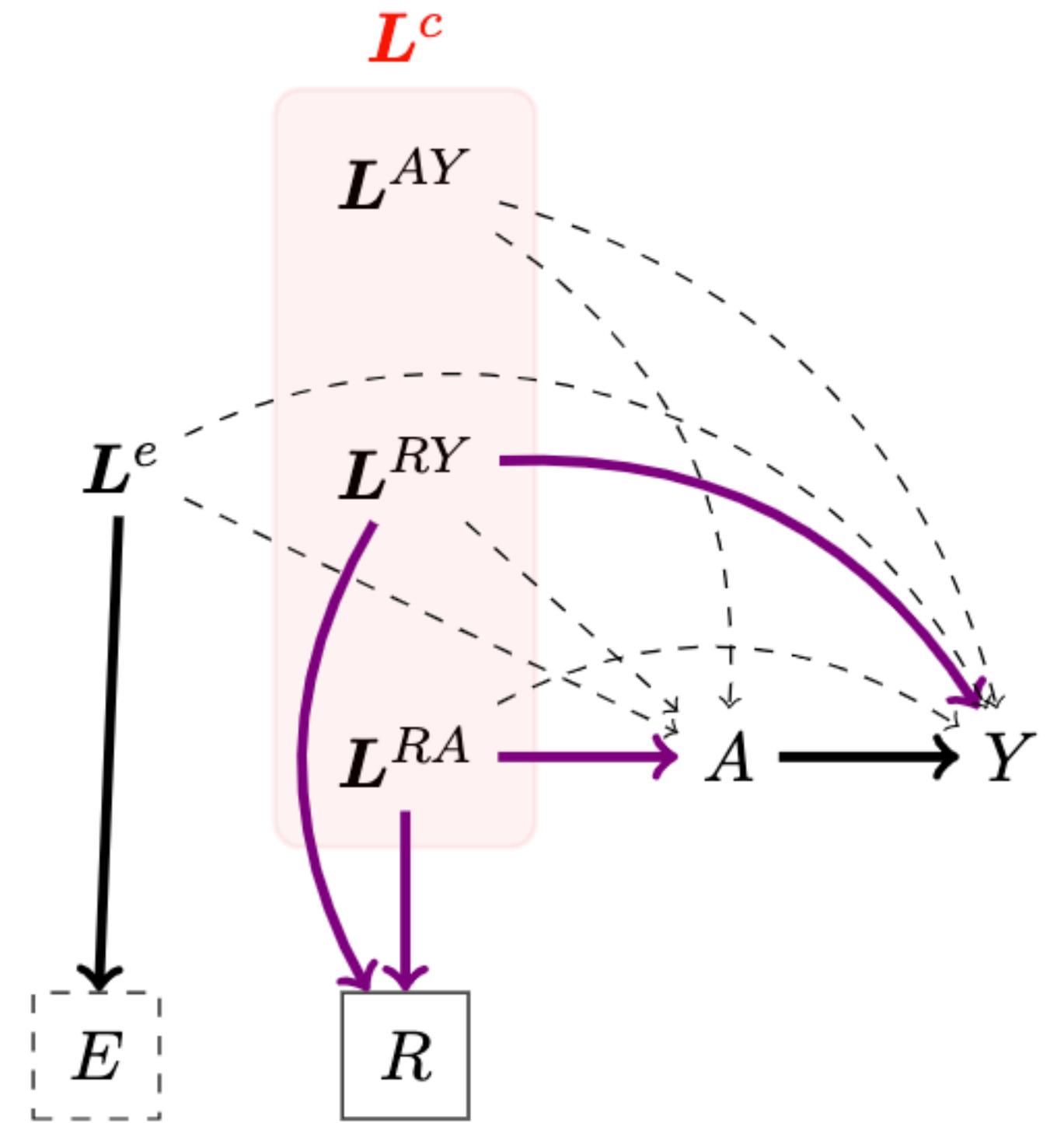
## Among 43,805,080 Subject-Trials



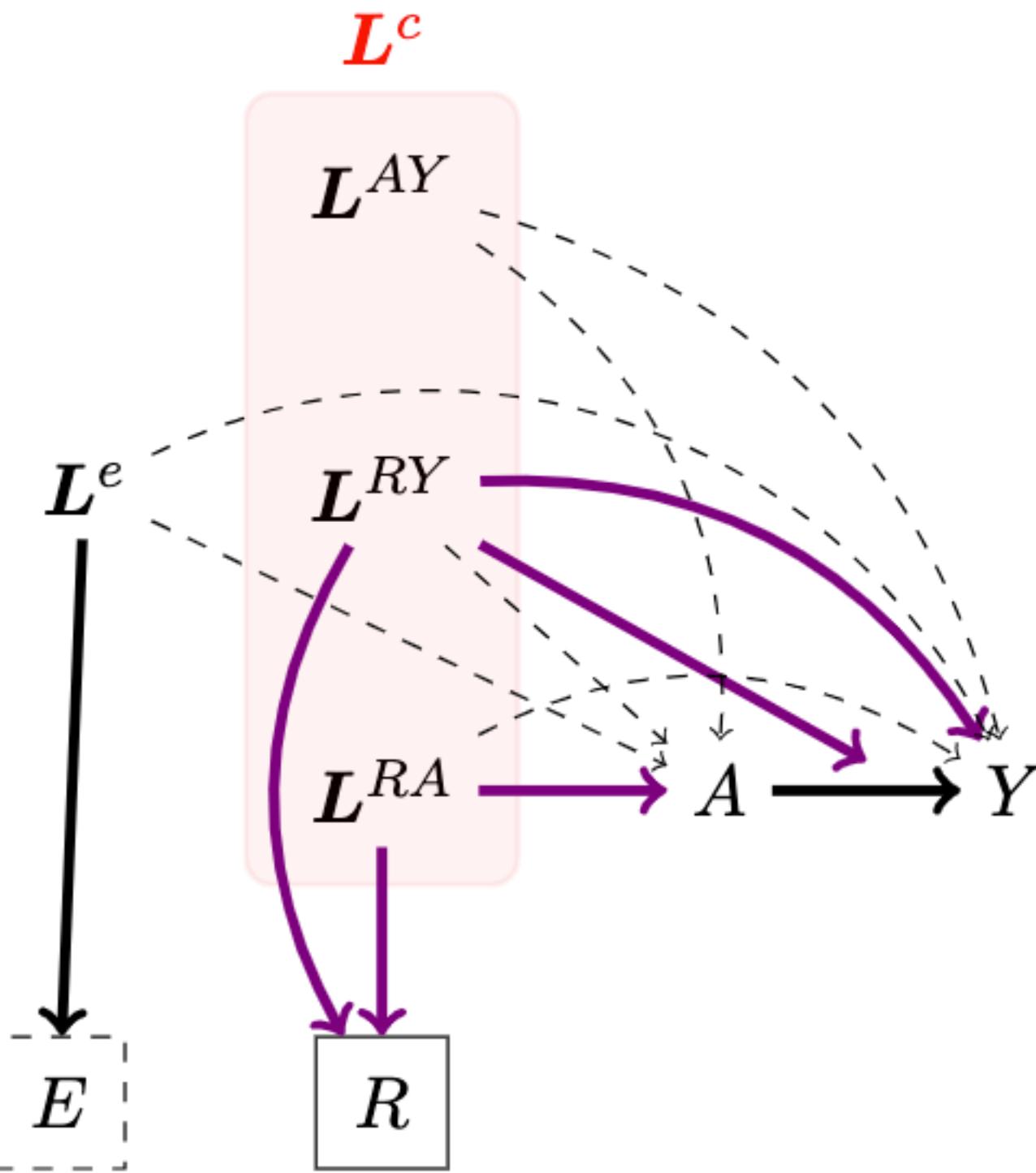
# Variance of IPW Estimator With Weights $W^A \times W^R$

100 Bootstrap Replicates

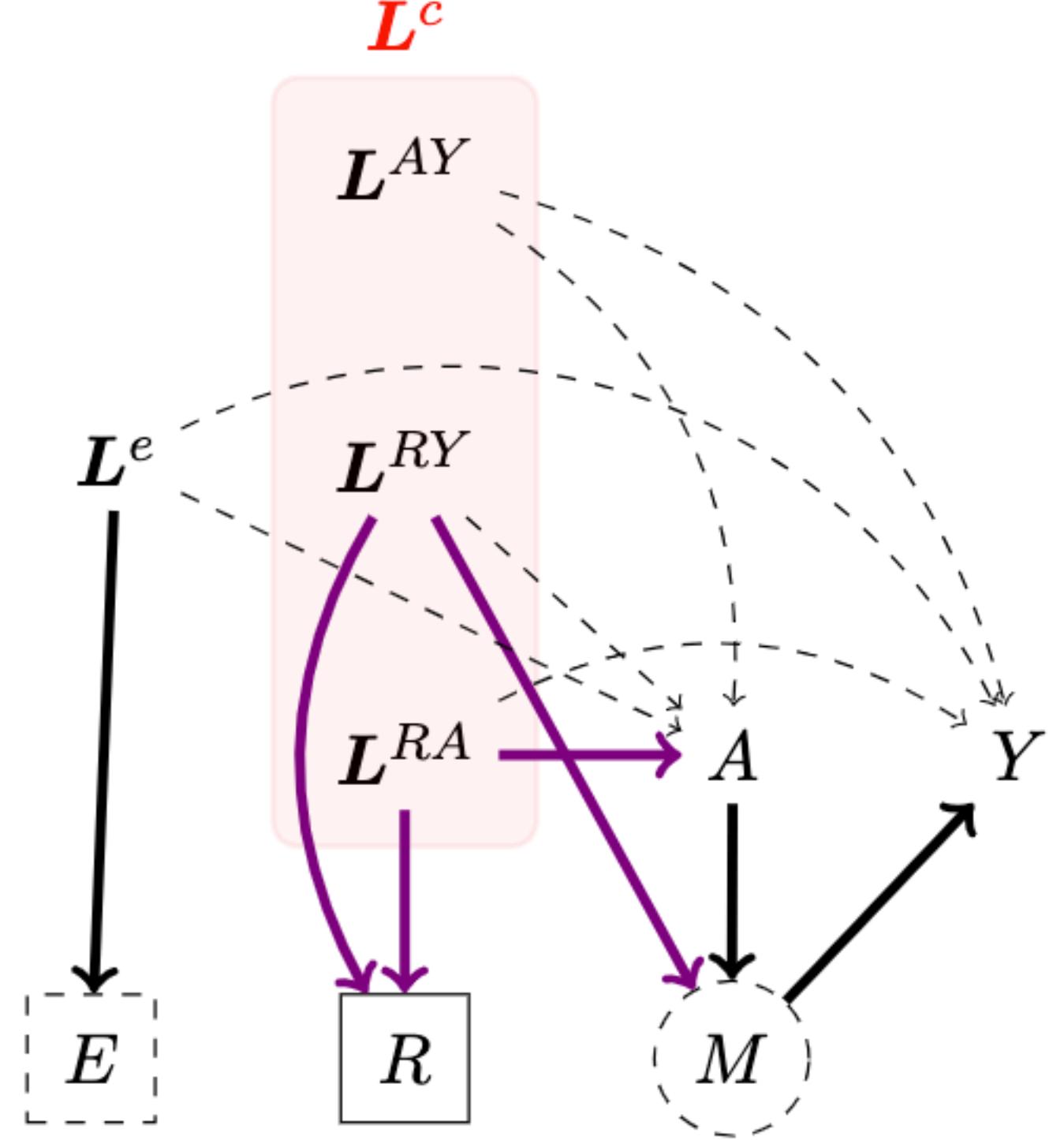




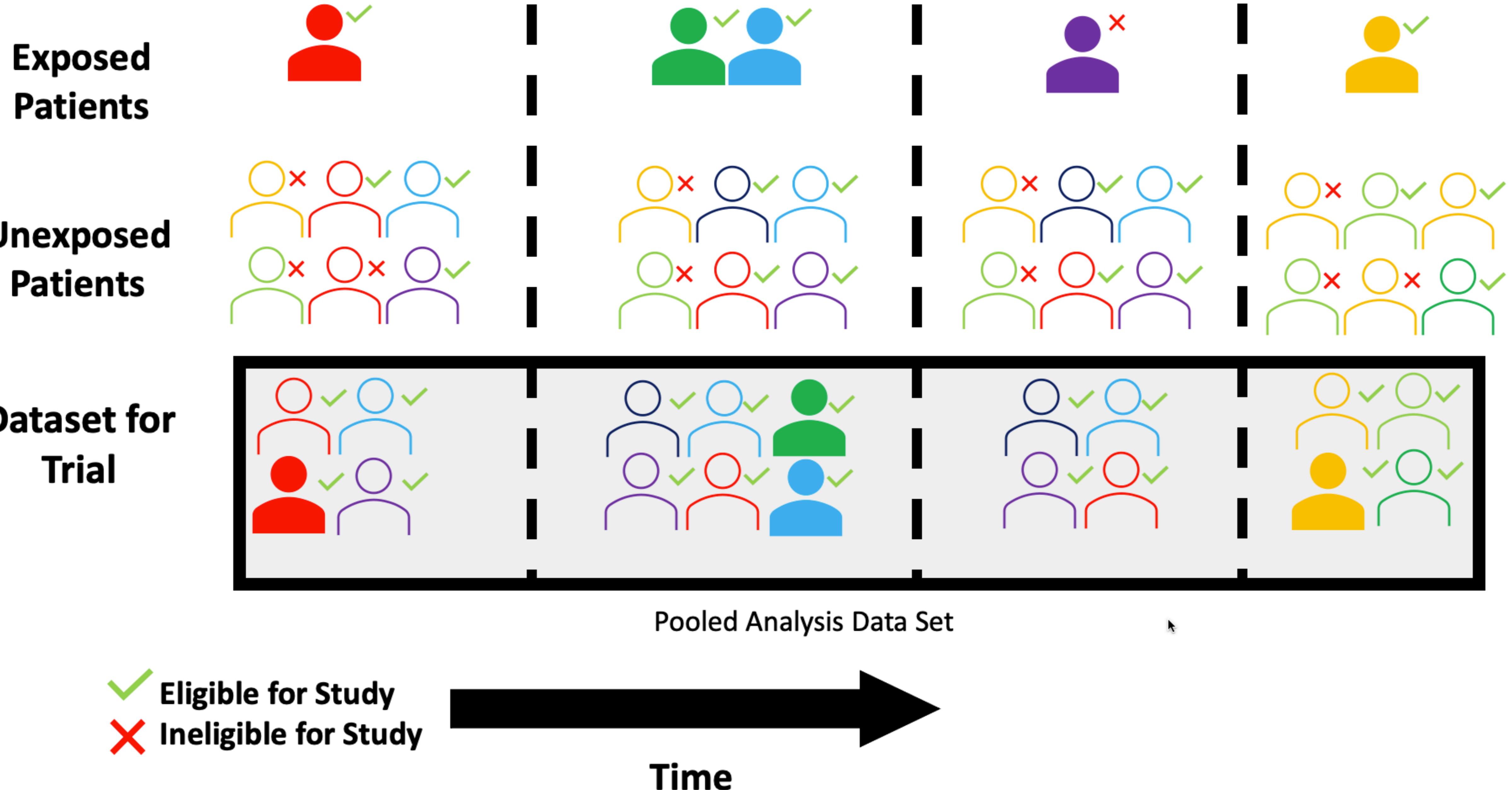
(a) M-Bias



(b) Treatment Effect  
Heterogeneity

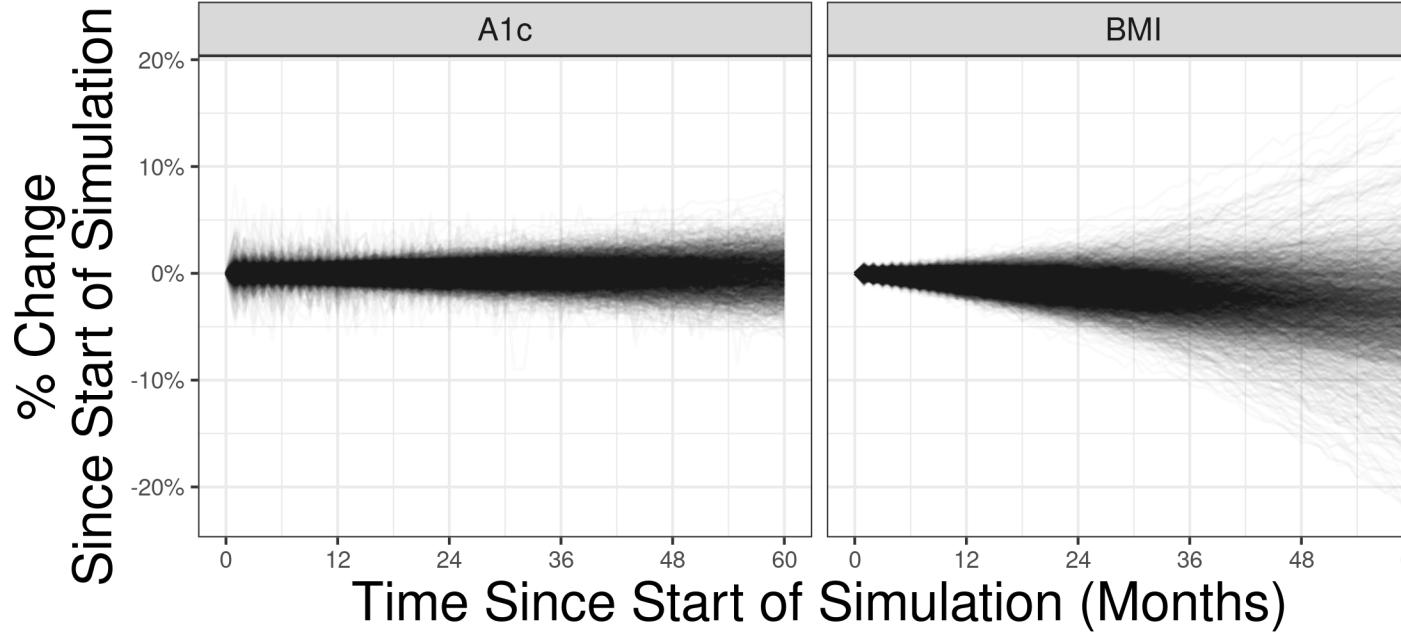


(c) M-Bias Through Unobserved  
Mediator



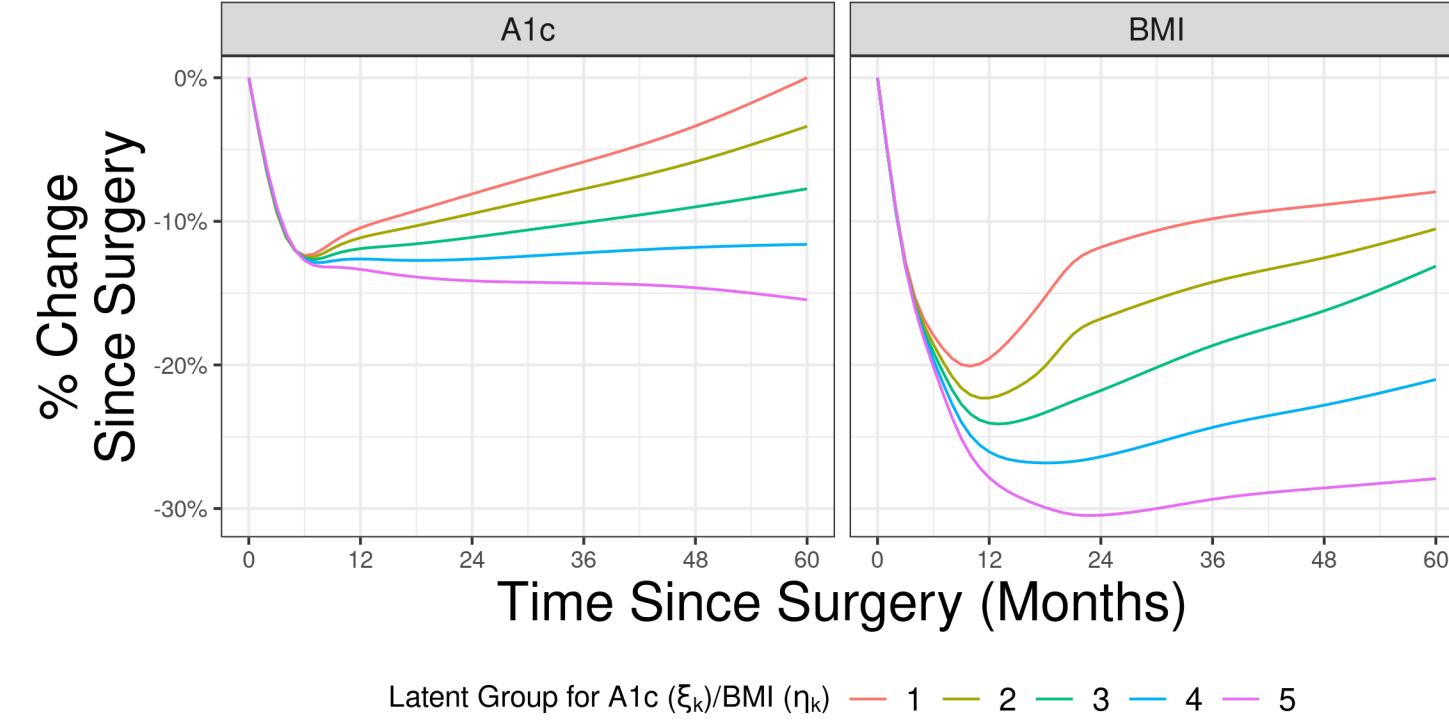
A)

### Sample Pre-Surgical Subject Trajectories



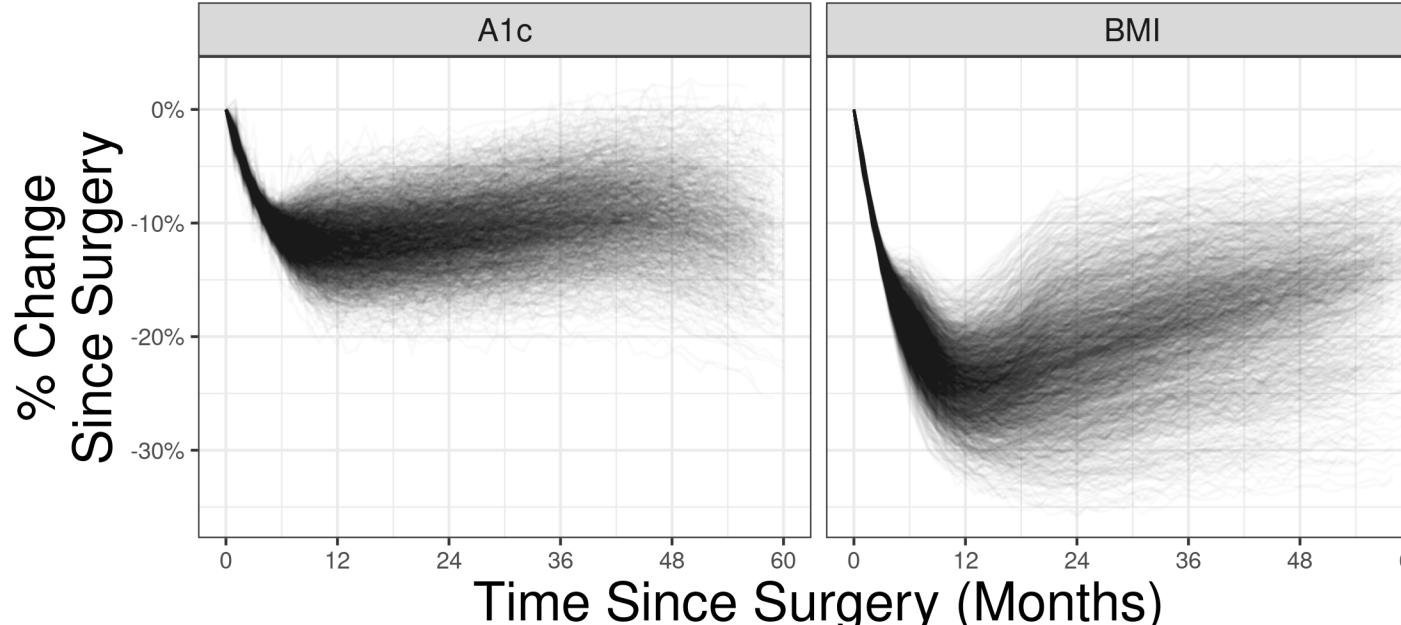
B)

### Latent Post-Surgical Mean Trajectories



C)

### Sample Post-Surgical Subject Trajectories



D)

### Sample Subject Trajectories

