

Supplementary Information

Figure S1. Powers of the seven tests versus the total effect size β for a quantitative trait with $N = 5,000$. The proportion of causal variants is 0.3. Models 1-3 corresponding to Genes 1-3 where we only use the eQTL with the largest weight to generate gene expression; Models 4-6 corresponding to Genes 1-3 where we use two eQTLs with the first two largest weights to generate gene expression.

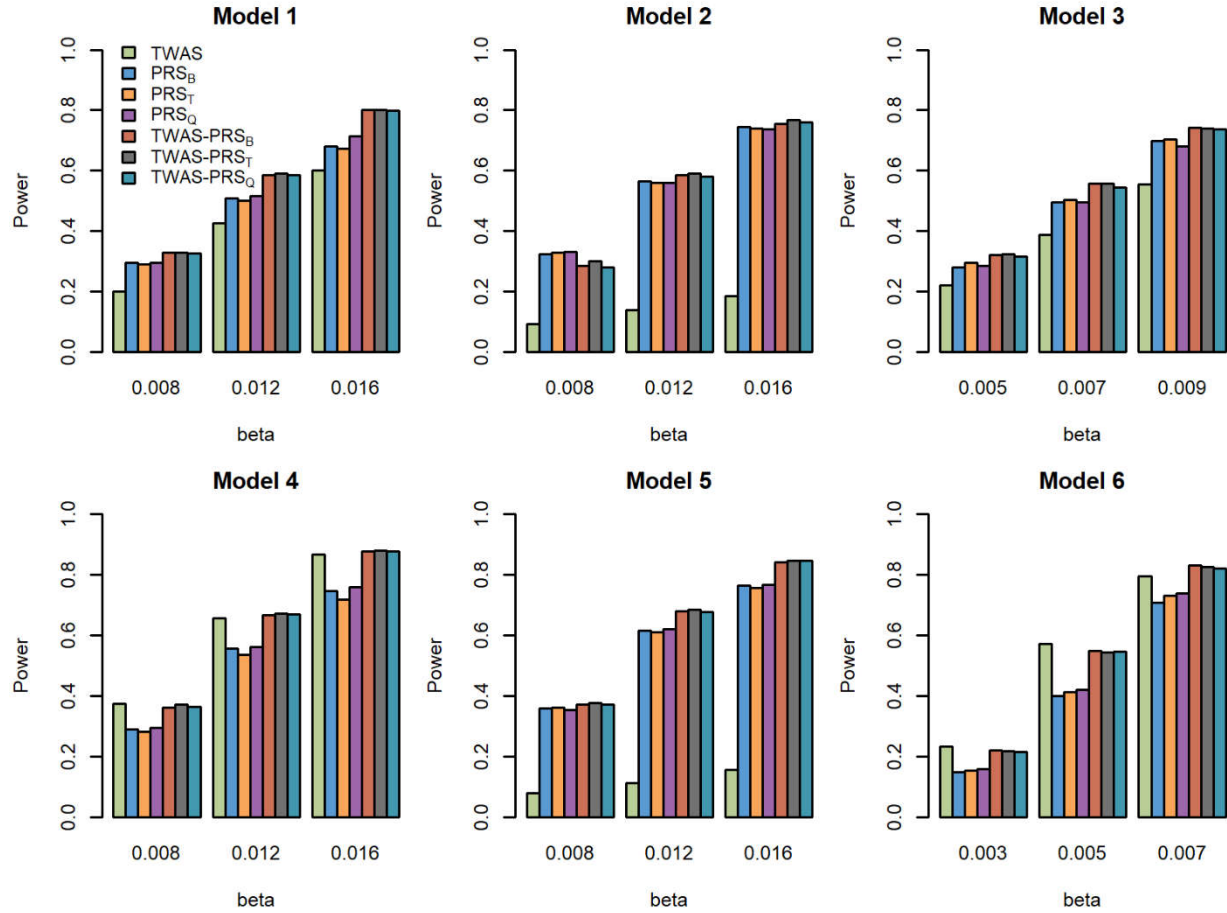


Figure S2. Powers of the seven tests versus the total effect size β for a quantitative trait with $N = 10,000$. The proportion of causal variants is 0.3. Models 1-3 corresponding to Genes 1-3 where we only use the eQTL with the largest weight to generate gene expression; Models 4-6 corresponding to Genes 1-3 where we use two eQTLs with the first two largest weights to generate gene expression.

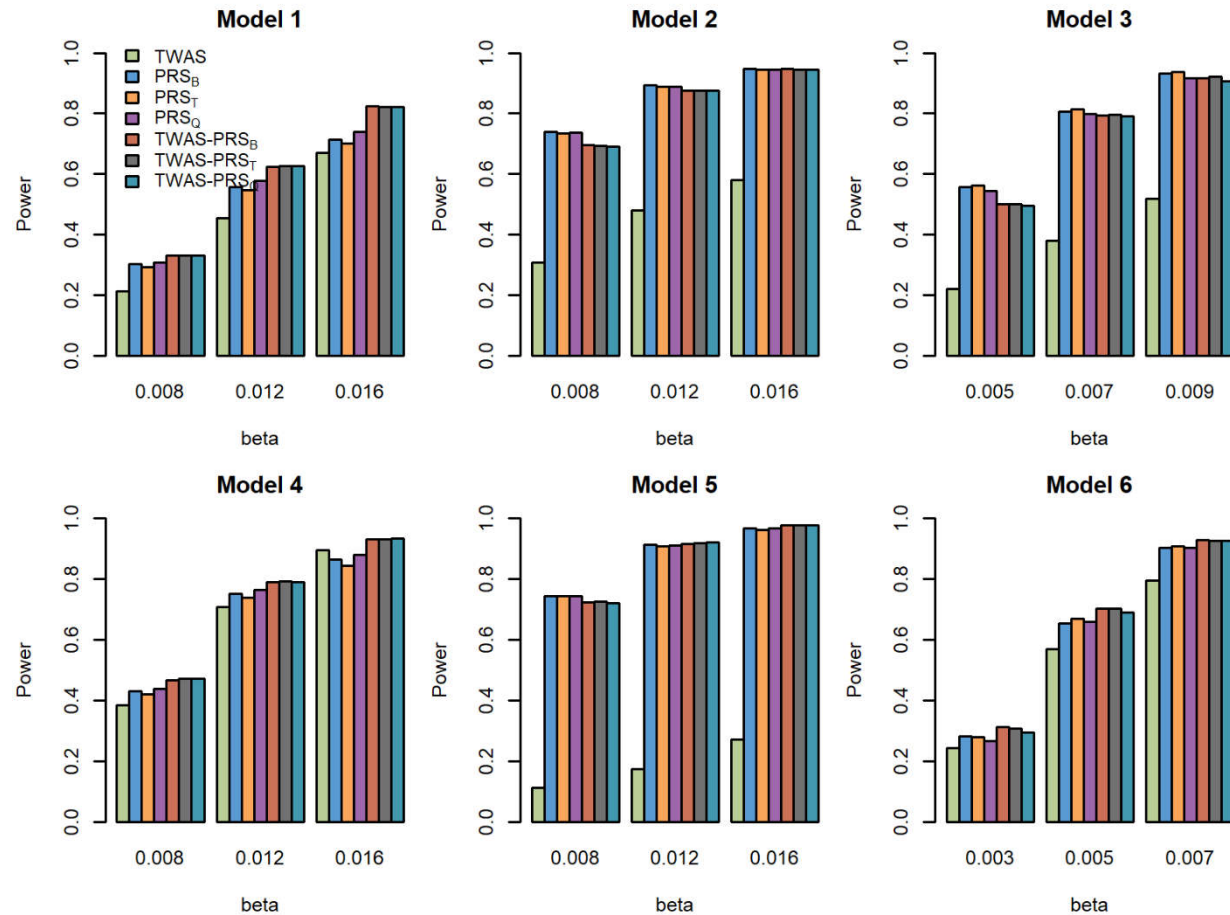


Figure S3. Powers of the seven tests versus the total effect size β for a quantitative trait with $N = 20,000$. The proportion of causal variants is 0.3. Models 1-3 corresponding to Genes 1-3 where we only use the eQTL with the largest weight to generate gene expression; Models 4-6 corresponding to Genes 1-3 where we use two eQTLs with the first two largest weights to generate gene expression.

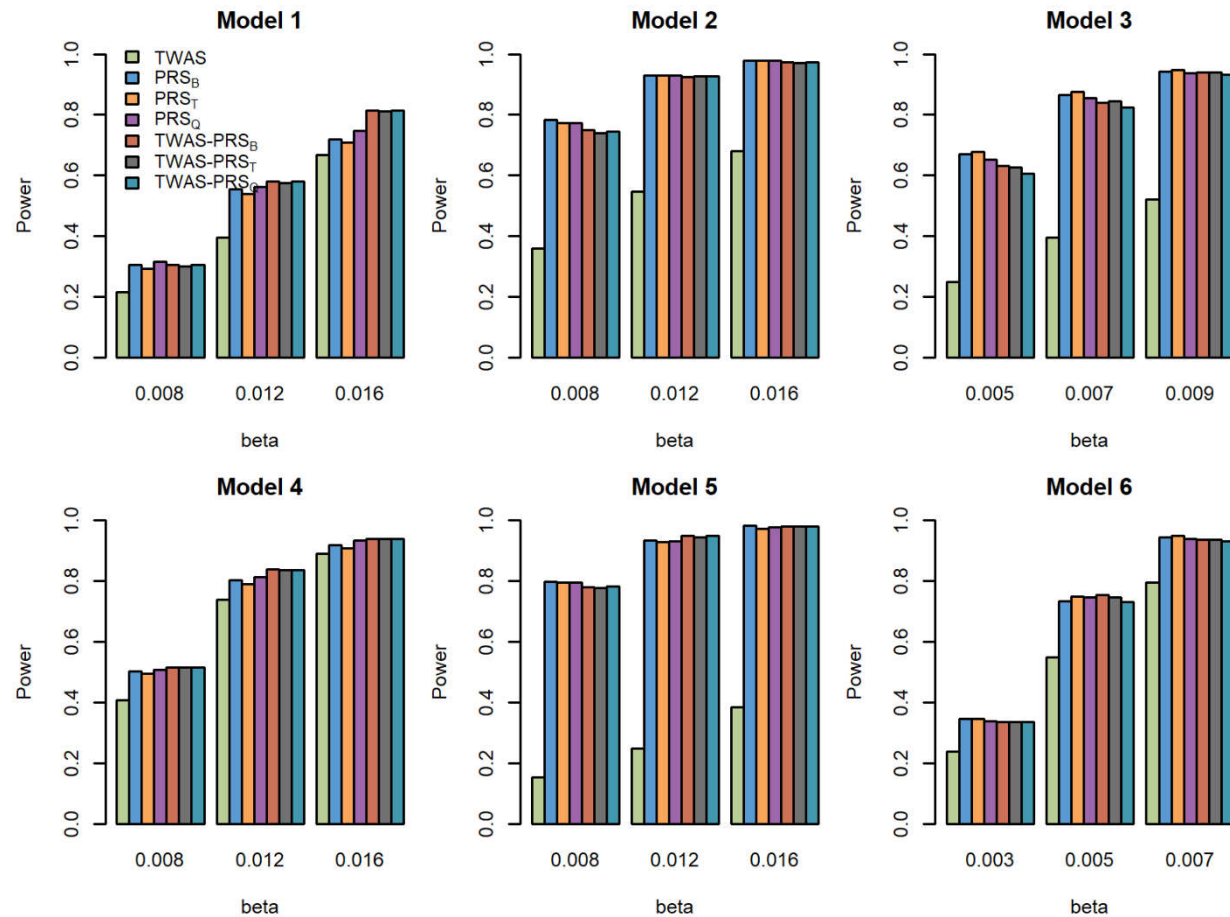


Figure S4. Powers of the seven tests versus the total effect size β for a qualitative trait with $N = 5,000$. The proportion of causal variants is 0.2. Models 1-3 corresponding to Genes 1-3 where we only use the eQTL with the largest weight to generate gene expression; Models 4-6 corresponding to Genes 1-3 where we use two eQTLs with the first two largest weights to generate gene expression.

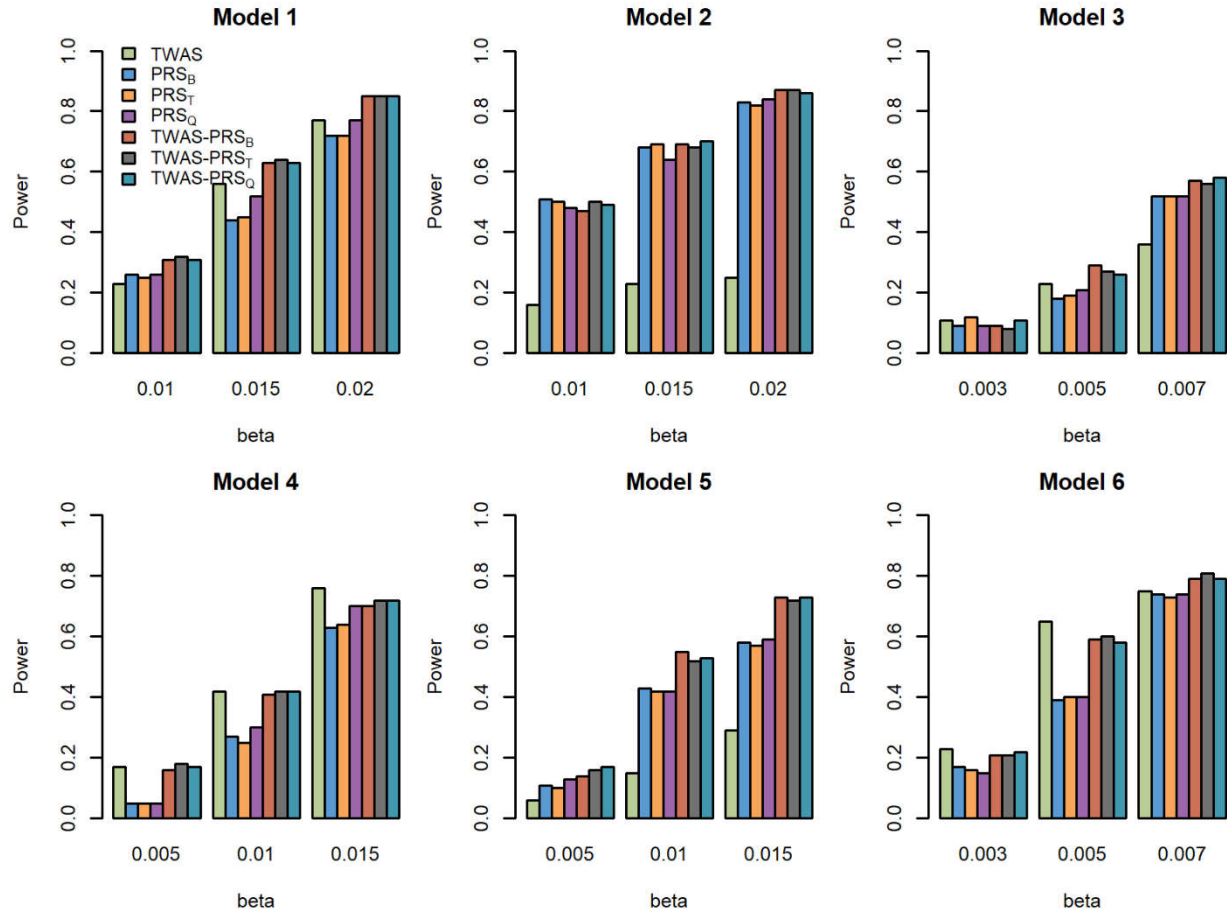


Figure S5. Powers of the seven tests versus the total effect size β for a qualitative trait with $N = 10,000$. The proportion of causal variants is 0.2. Models 1-3 corresponding to Genes 1-3 where we only use the eQTL with the largest weight to generate gene expression; Models 4-6 corresponding to Genes 1-3 where we use two eQTLs with the first two largest weights to generate gene expression.

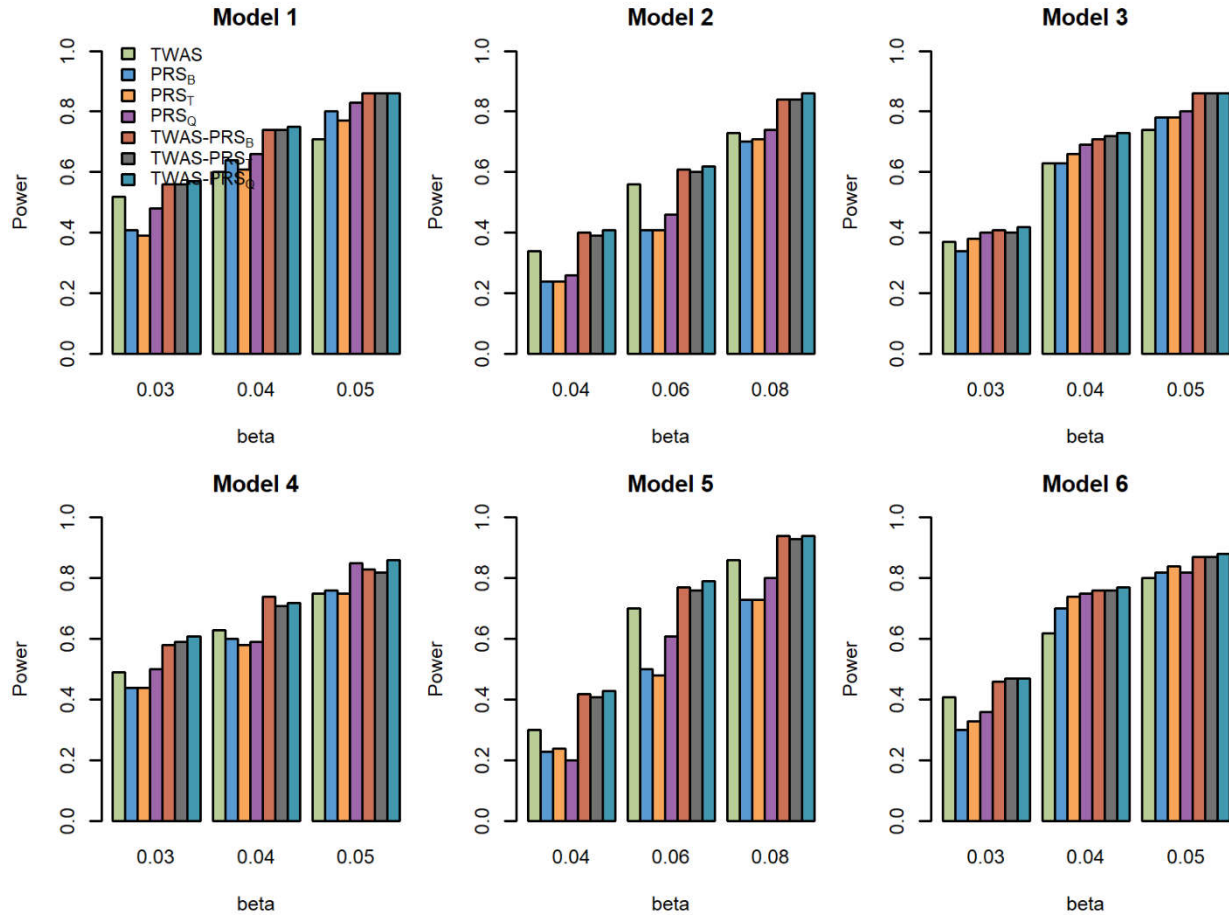


Figure S6. Powers of the seven tests versus the total effect size β for a qualitative trait with $N = 20,000$. The proportion of causal variants is 0.2. Models 1-3 corresponding to Genes 1-3 where we only use the eQTL with the largest weight to generate gene expression; Models 4-6 corresponding to Genes 1-3 where we use two eQTLs with the first two largest weights to generate gene expression.

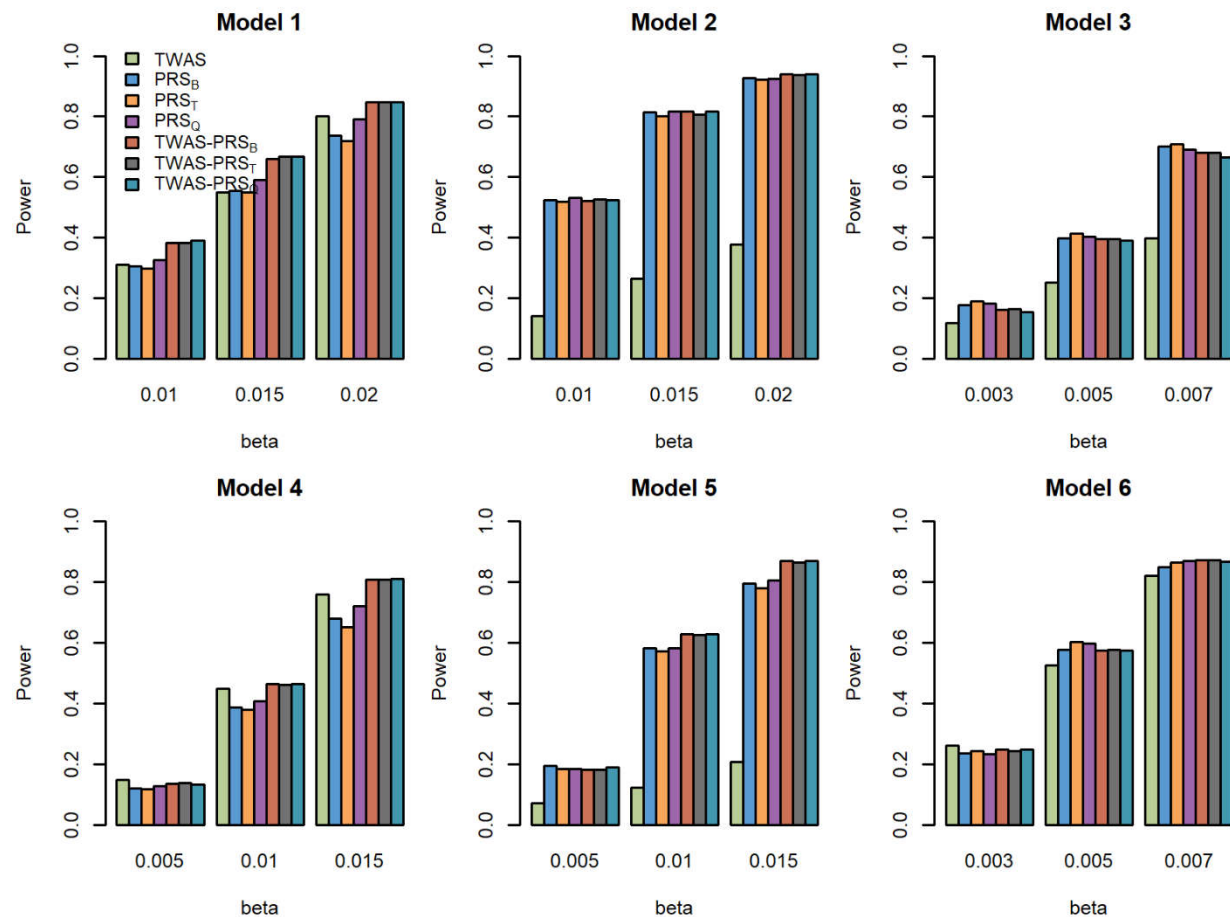


Figure S7. Powers of the seven tests versus the total effect size β for a qualitative trait with $N = 5,000$. The proportion of causal variants is 0.3. Models 1-3 corresponding to Genes 1-3 where we only use the eQTL with the largest weight to generate gene expression; Models 4-6 corresponding to Genes 1-3 where we use two eQTLs with the first two largest weights to generate gene expression.

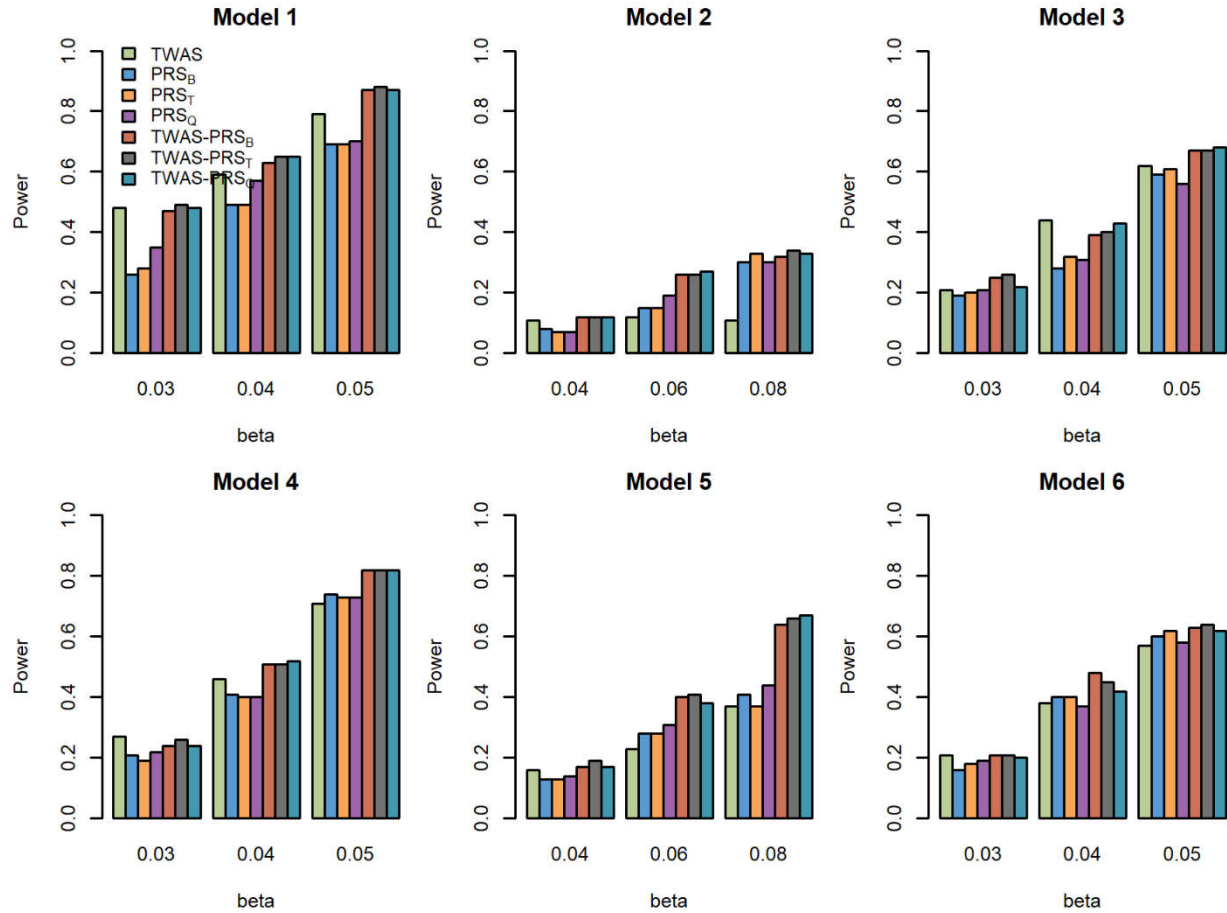


Figure S8. Powers of the seven tests versus the total effect size β for a qualitative trait with $N = 10,000$. The proportion of causal variants is 0.3. Models 1-3 corresponding to Genes 1-3 where we only use the eQTL with the largest weight to generate gene expression; Models 4-6 corresponding to Genes 1-3 where we use two eQTLs with the first two largest weights to generate gene expression.

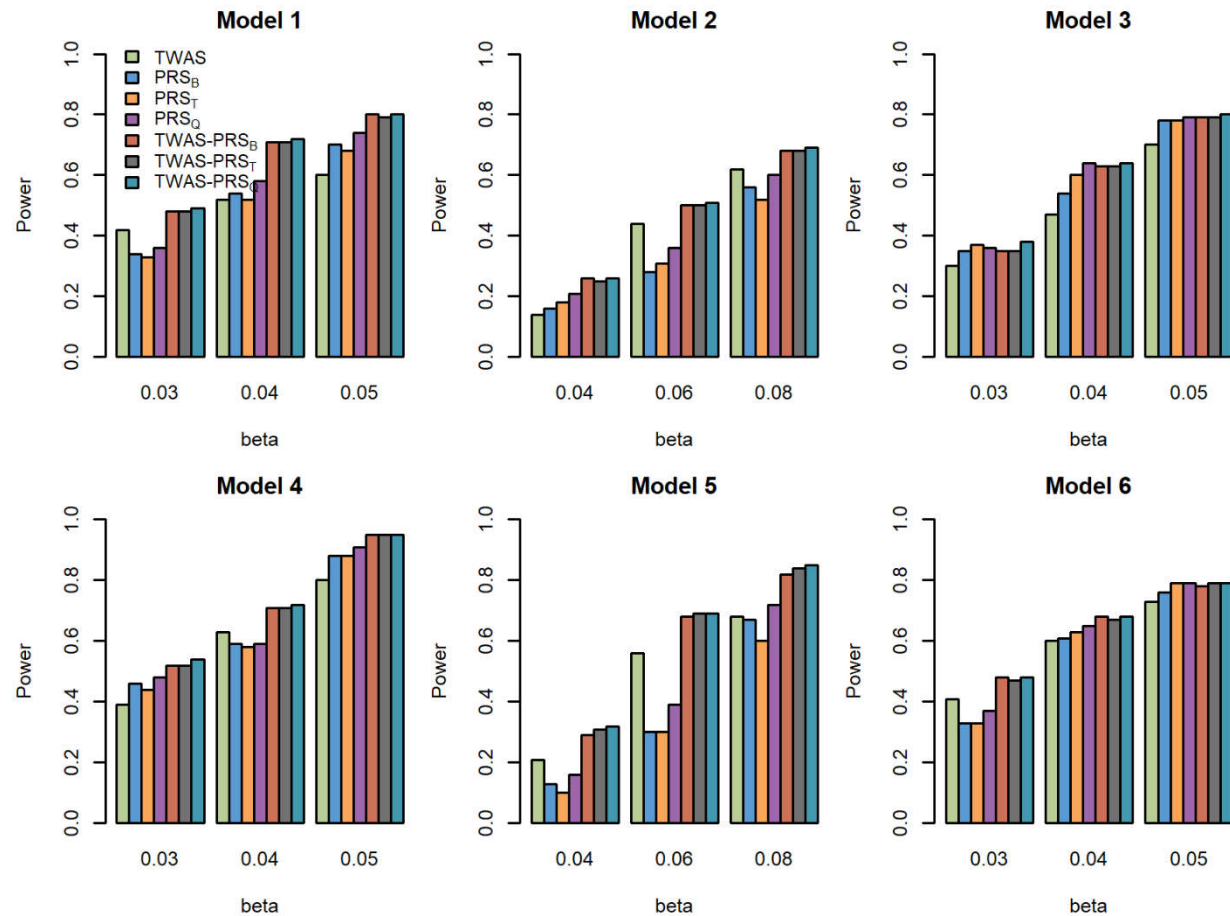


Figure S9. Powers of the seven tests versus the total effect size β for a qualitative trait with $N = 20,000$. The proportion of causal variants is 0.3. Models 1-3 corresponding to Genes 1-3 where we only use the eQTL with the largest weight to generate gene expression; Models 4-6 corresponding to Genes 1-3 where we use two eQTLs with the first two largest weights to generate gene expression.

