Figure S1 presents a generalization of Schadt et al. 2005 approach to distinguish direct and indirect effects of two common QTLs.

In Figures S2 and S3 the performance of the PC-skeleton algorithm to discover undirected edges is measured by the height (number of times the edge was recovered out of 100 simulations) of each bar in the plot. The accuracy of the edge orientation approaches is represented by bar shading. Black represents correctly inferred direction, dark gray (for PC-algorithm only) represents undirected edges, and white color represents incorrectly inferred directions. Edges belonging to unshielded collider patterns are labeled as uc.
Figure S 1: Distinguishing direct and indirect effects of two common QTLs. When two connected phenotypes are affected by two common QTLs ($Q_1$ and $Q_2$) we need to consider seven different models. In general the number of models is given by $2^{k+1} - 1$ where $k$ represents the number of common QTLs.
Figure S 2: Performances of the QDG method as % of correct direction per edge (black) for sample sizes 60, 300 and 500.
Figure S 3: Performances of the PC-skeleton algorithm as % of correct direction per edge (black) for sample sizes 60, 300 and 500.