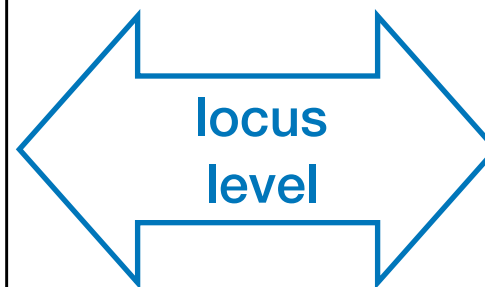
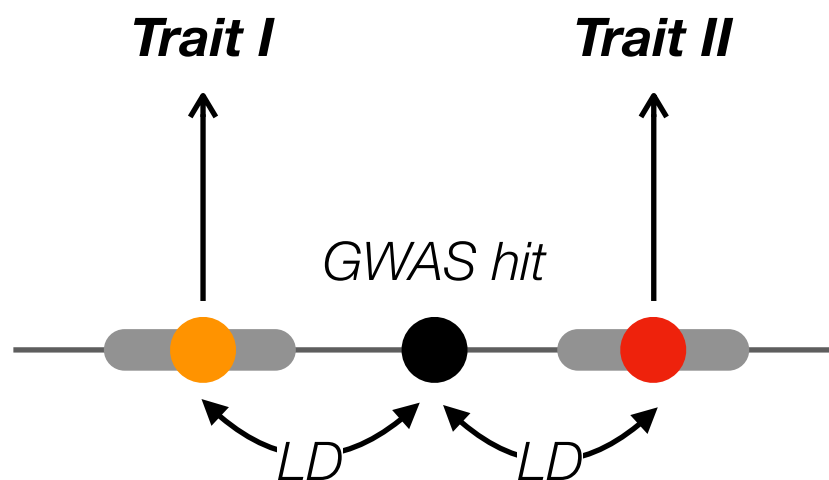


## A Linkage

“Spurious” pleiotropy

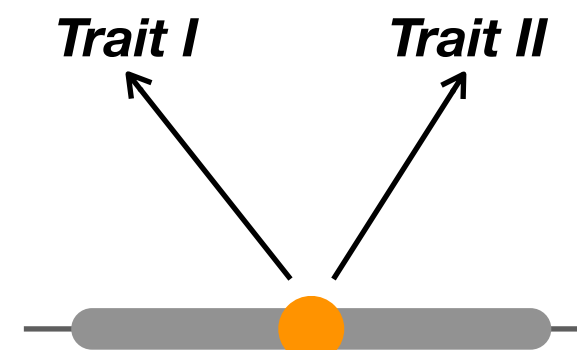
**GWAS hit** is in LD with *causal variants* in two distinct loci (pathway is different).



## C Biological

“True” pleiotropy

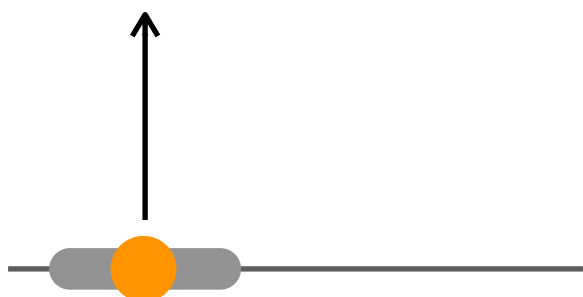
*Causal variant(s)* colocates in same locus.



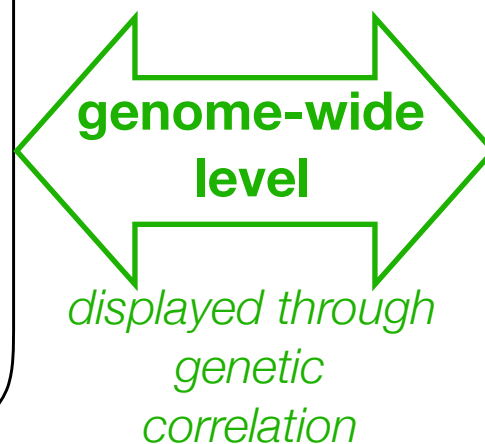
## B Causality

“Mediated” pleiotropy

**Trait I** → **Trait II**



A *causal variant* effects trait B through an effect on trait A.



## D Confounding

Pleiotropy through shared confounding

**Trait I**      **Trait II**

