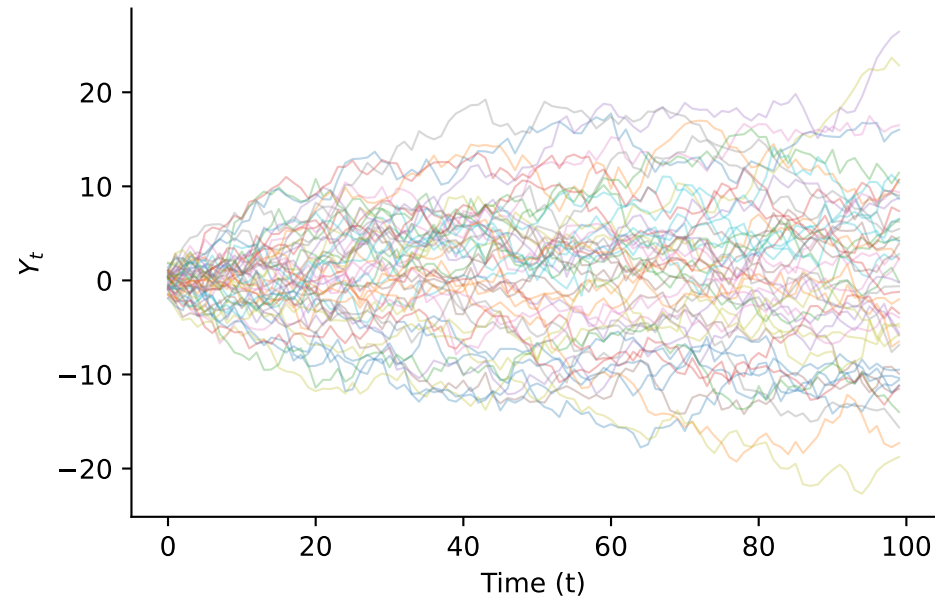**Random Walk Paths: Variance Increases**

Variance Grows Linearly with Time

$\text{Var}(Y_t) = t \cdot \sigma^2$