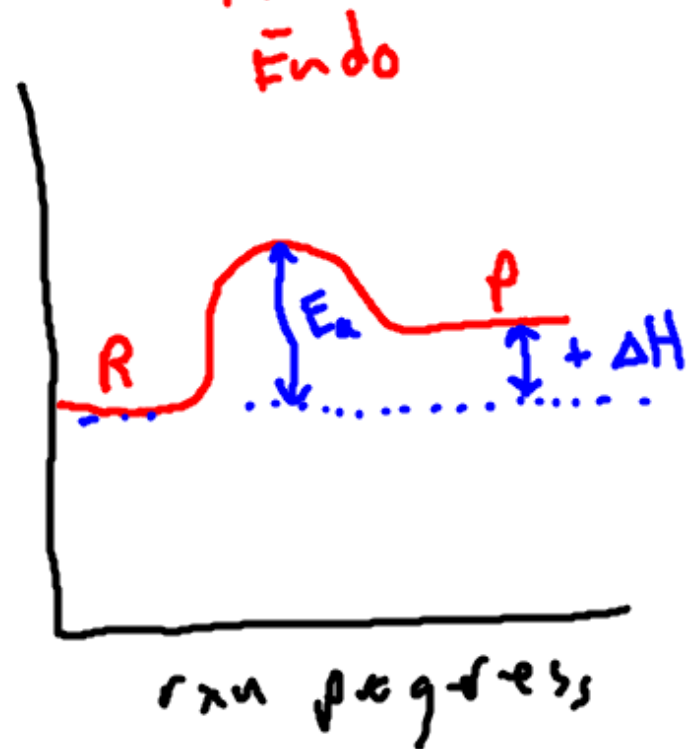
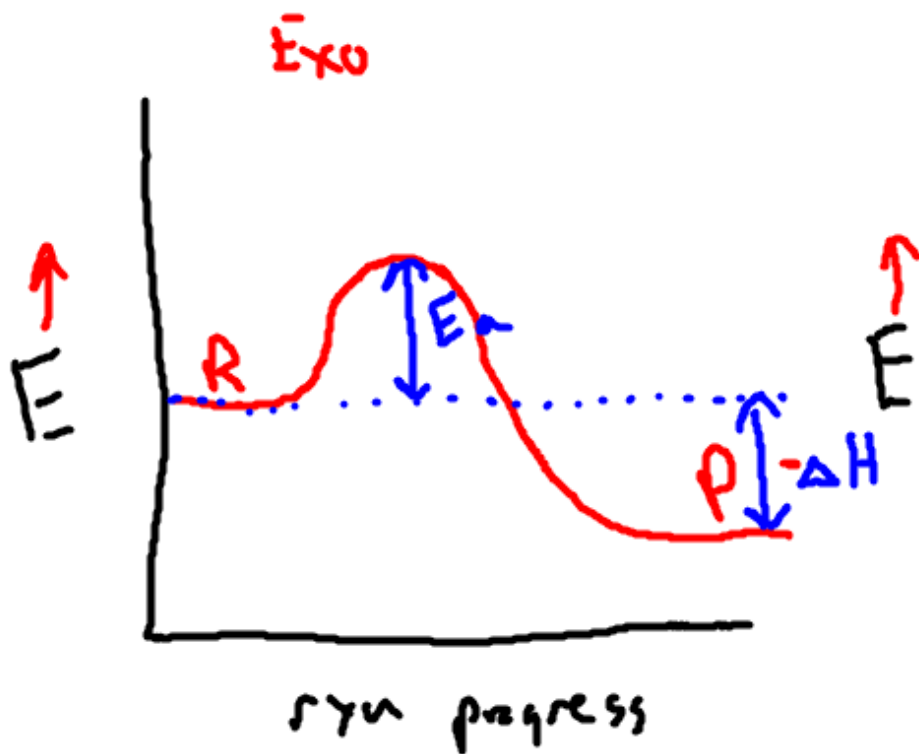


# Kinetics: Reaction Rates

rxn rates: How fast a rxn occurs

activation Energy - E needed to make a rxn happen



# Factors Affecting Rxn Rates

- ① Temperature  
How? speed of particles
- ② Concentration - amount of Reactants  
more part  $\rightarrow$  more collisions
- ③ Catalyst - something that speeds up the rxn but does not get used up

# Enzymes

common - Bio catalysts (protein)

faster - 100,000 - 10,000,000 times faster

How work? - aligns <sup>(down)</sup> molecules

Missing or defective - health concerns

milk Lactase - enzyme used to break  
down dairy