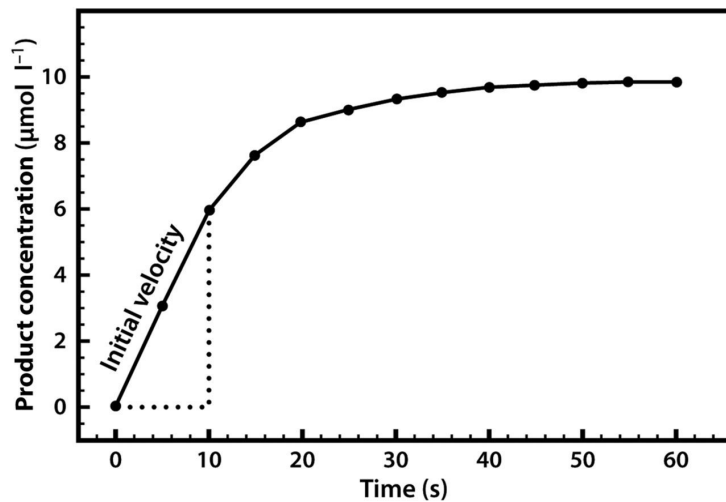


The course of a reaction:



- When the enzyme and substrate are first mixed, there are large numbers of substrate molecules.
- At any moment, almost every enzyme molecule has a substrate molecule in its activation site
- The rate at which the reaction occurs depends only on how many enzyme molecules there are and the speed at which the enzymes can convert the substrate into a product, release it and bind to another substrate molecule

Factors that affect enzyme concentration

- As the concentration of enzyme is increased, there are more available active sites for substrates to fit into. More enzyme-substrate complexes are formed, more products are formed and the rate of reaction is increased. The limiting factor is the enzyme concentration. Once all substrates have formed enzyme-substrate complexes, a further increase in concentration will have no effect on the rate of reaction. At this point, the limiting factor is the substrate concentration. During comparison, look at initial rate to ensure differences in reaction rate are caused only by differences in enzyme concentration.

