



# Cannabis and CYP450 Metabolism

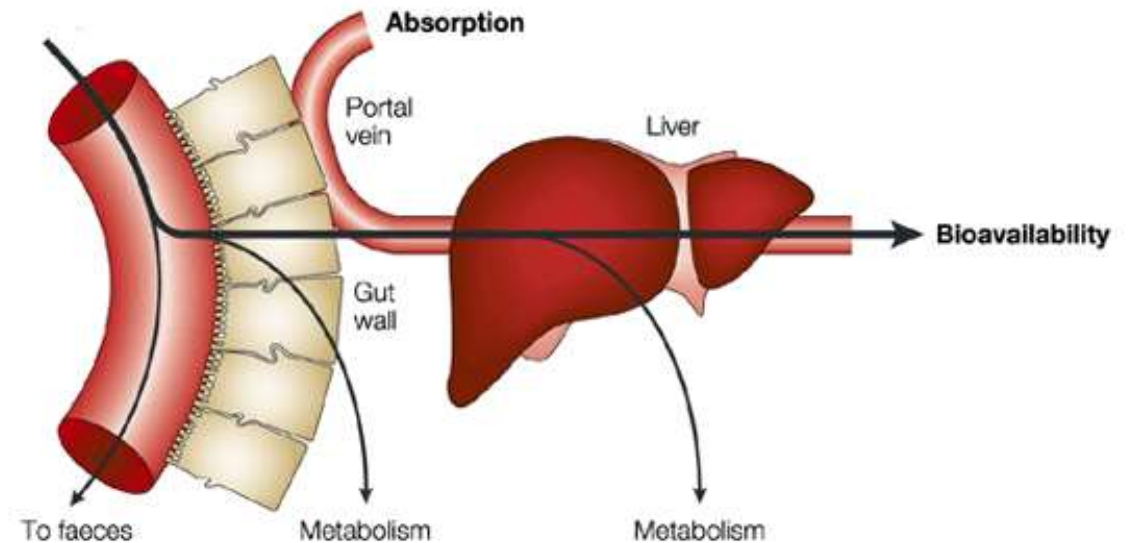
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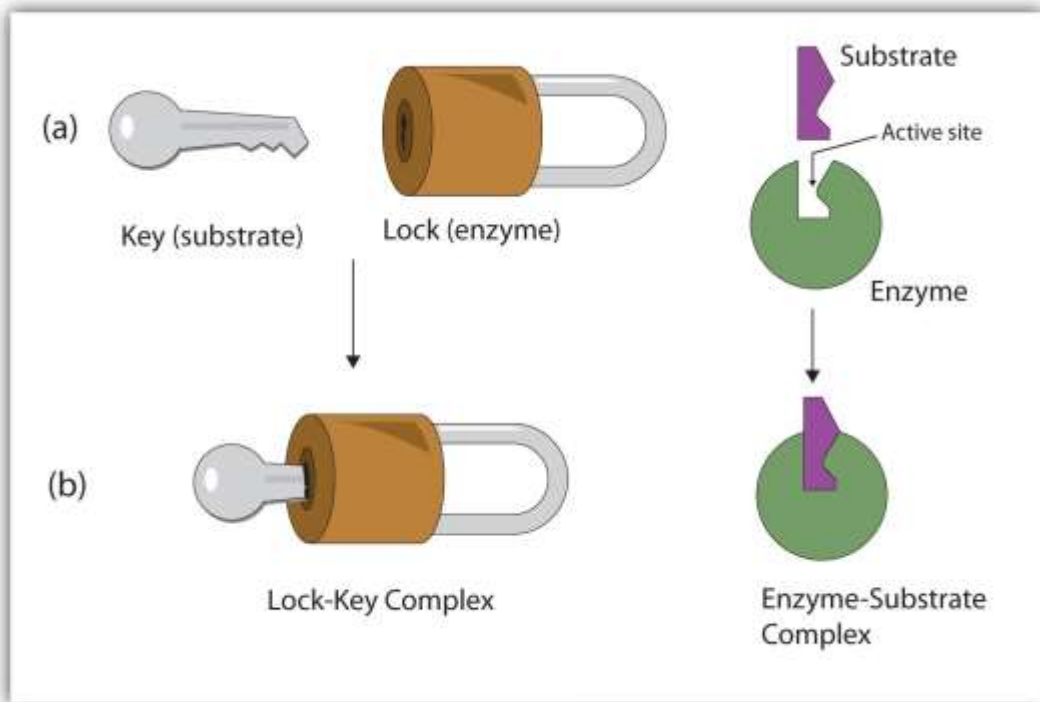
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# Metabolism of Drugs in the Liver: First Pass Metabolism

- ▶ Drug enters the body through the digestive tract
- ▶ Is absorbed from the gut wall into the portal vein
- ▶ Some is lost in metabolism in the gut wall
- ▶ Some of the drug is lost due to metabolism in the liver

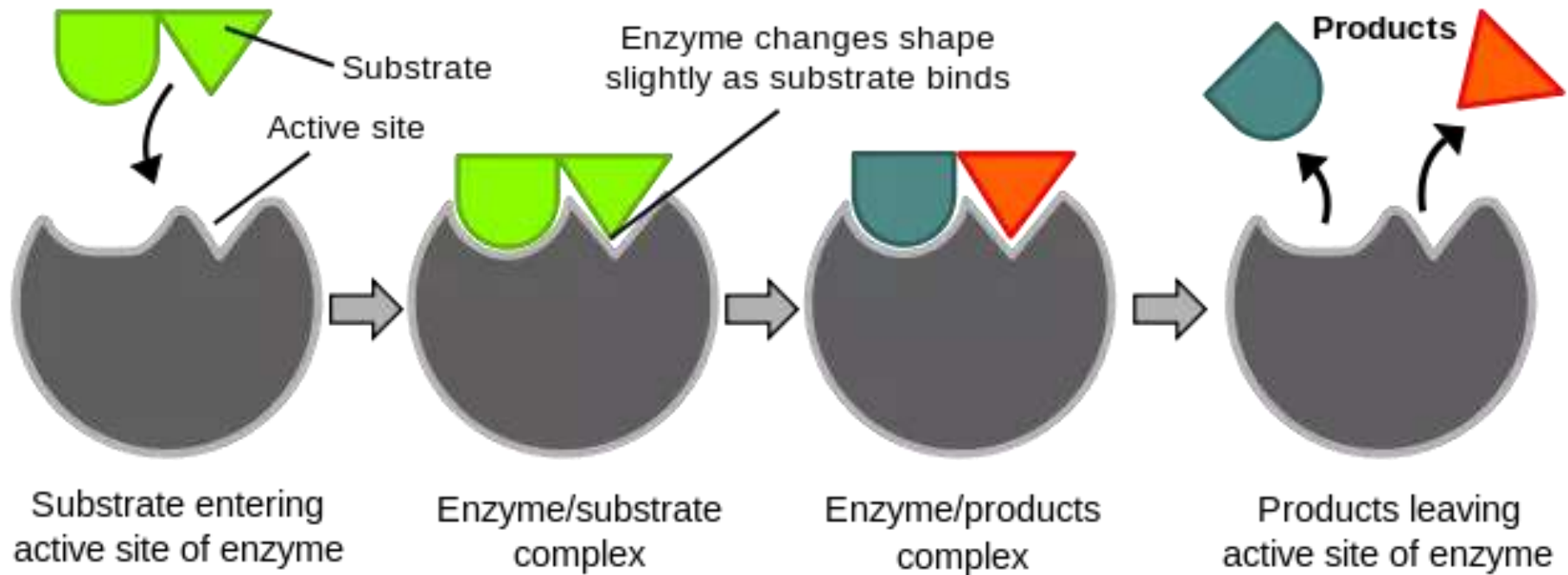


# What is Cytochrome P450: What is an Enzyme?



- ▶ Enzymes speeds up a chemical process in the body, chemical reaction
- ▶ Substance produced by the body
- ▶ Enzymes have a 3D active site
- ▶ Substrate (Cbd or drug) fits into active site
- ▶ P450 cytochrome makes up 70-80% of our liver enzymes

# What is Cytochrome P450: How does an Enzyme work?



# Cannabis' Impact on Pharmaceuticals: Spacing with other Medications

- ▶ Cannabinoids build up in the body over time due to this mechanism
- ▶ This process protects the cannabinoids from being metabolized out as quickly
- ▶ Spacing does NOT necessarily mean this interaction will be avoided

# Cannabinoid Impact on Pharmaceuticals: Precautions

- ▶ What can we do to protect yourself?
  - ▶ When in doubt ask your doctor
  - ▶ Grapefruit juice is a known inhibitor of one of the enzymes(CYP450-3A4) good indicator, not the only indicator
- ▶ Spacing still advised to avoid potential interaction with outer coating
- ▶ Be aware of the more common classes of medications that have the potential to interact
- ▶ CBD has been studied to primarily show this, however other cannabinoids are metabolized through this pathway as well

# Common Drug Classes with P450 Metabolism

- ▶ Anti-coagulants
- ▶ Anti-epileptic medications (this causes the increase)
- ▶ Antidepressants
- ▶ Blood pressure medications
- ▶ Other heart medications (antiarrhythmics)
- ▶ Opioid analgesics
- ▶ Anti-spasmodics (gabapentin)
- ▶ Lots of drug classes have at least one or two metabolized by this pathway





Questions?