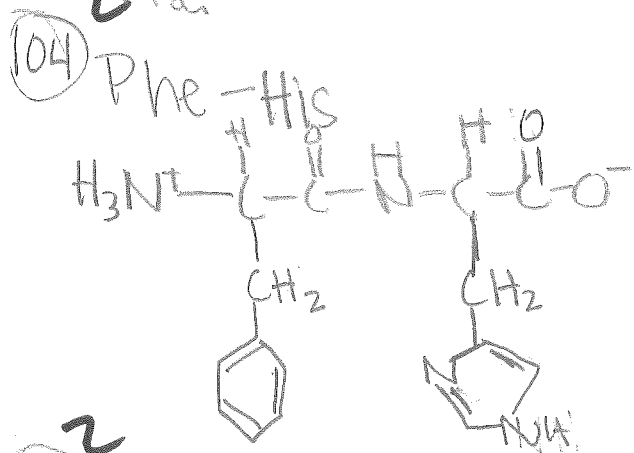


# Chem in Meds: ACE Inhibitors

<sup>3</sup>  
(102) The main symptom of Hypertension is chronically elevated blood pressure. The health risks for someone with hypertension are stroke, heart attack, heart failure, and kidney failure.

<sup>2</sup>  
(103) Angiotension II initiates a number of physiological events that raise blood pressure. Therefore, stopping the production of Angiotension II makes it less likely that blood pressure will rise.



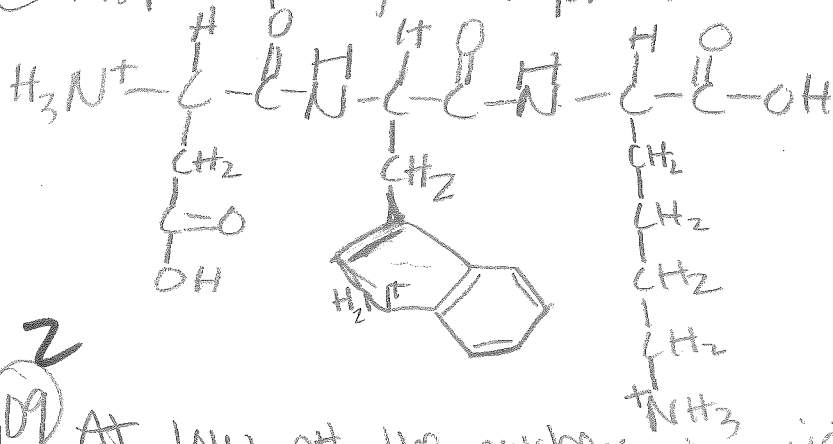
<sup>2</sup>  
(105) The angiotension converting enzyme breaks the peptide bond between Phe and His in angiotension I.

<sup>2</sup>  
(106) Captopril binds to the active site of ACE. It does not change the shape of ACE because captopril is a competitive inhibitor of ACE.

<sup>3</sup>  
(107) When valine replaces glutamic acid in hemoglobin, an acidic polar side chain has been replaced with a non-polar side chain and a potential salt bridge has been removed, changing the shape of the protein. The tertiary and quaternary shape of the protein have been affected.

3  
108

Asp-Trp-Lys at pH=1



2  
109

At low pH, the carboxylic acids are in their unionized form. They cannot form salt bridges with positively charged side chains. Therefore, the tertiary + quaternary structure of the protein is disrupted.