Aldehydes and ketones can be prepared using a wide variety of reactions. Although these reactions are discussed in greater detail in other sections, they are listed here as a summary and to help with planning multistep synthetic pathways. Please use the appropriate links to see more details about the reactions.

\[
\begin{align*}
\text{C}_2\text{H}_4\text{OH} & \text{PCC} \rightarrow \text{C}_2\text{H}_2\text{O} \\
1^\circ \text{Alcohol} & \text{CH}_2\text{Cl}_2
\end{align*}
\]

Anti-Markovnikov addition of a hydroxyl group to an alkyne forms an aldehyde. The addition of a hydroxyl group to an alkyne causes tautomerization which subsequently forms a carbonyl.

Typically uses Jones reagent (\(\text{CrO}_3\) in \(\text{H}_2\text{SO}_4\)) but many other reagents can be used.
The addition of a hydroxyl group to an alkyne causes tautomerization which subsequently forms a carbonyl. Markovnikov addition of a hydroxyl group to an alkyne forms a ketone.

This is an example of a Ozonolysis reaction.

- Prof. Steven Farmer ([Sonoma State University](https://www.sonoma.edu))