damage that occur frequently. Only a few types of DNA damage are repaired in this way, particularly pyrimidine dimers resulting from exposure to UV light and alkylated guanines.

In the example opposite, uracil (U) has been formed by deamination of cytosine (C) and is therefore opposite a guanine (G) in the complementary strand of DNA. The bond between uracil and the deoxyribose is cleaved by a DNA glycosylase, leaving a sugar with no base attached in the DNA (an AP site). This site is recognized by AP endonuclease, which cleaves the DNA chain. The remaining deoxyribose is removed by deoxyribosephosphodiesterase. The resulting gap is then filled by DNA polymerase and sealed by ligase, leading to incorporation of the correct base (C) opposite the G.

However, there are plenty more mechanisms:

- Direct reversal
    - Photolyase – UV damage
        - Prokaryotes only
    - MGMT
        - O-6-methylguanine-DNAmethyltransferase
    - Oxidative dealkylation
- Excision Repair
- Repair of double – strand breaks
    - Homologous recombination (error free)
    - Non-homologous end-joining (error prone)