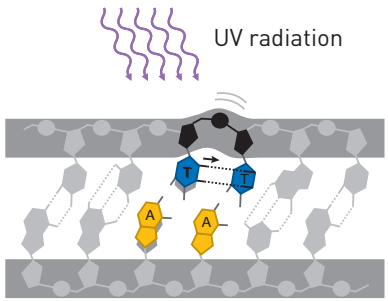
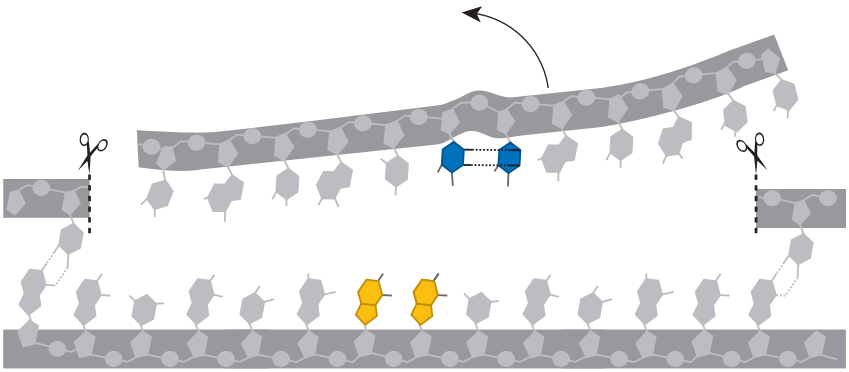
Nucleotide excision repair

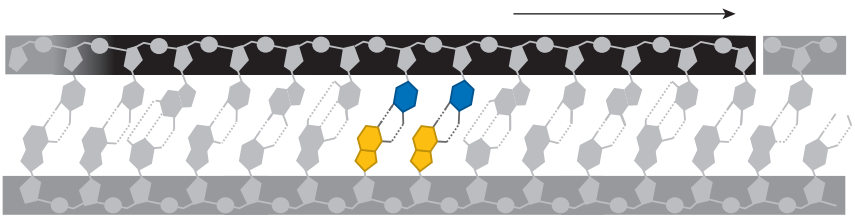
Nucleotide excision repairs DNA-injuries caused by UV radiation or carcinogenic substances like those found in cigarette smoke.



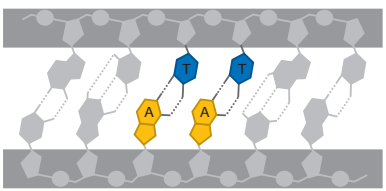
1 UV radiation can make two thymines bind to each other incorrectly.



2 The enzyme exinuclease finds the damage and cuts the DNA strand. Twelve nucleotides are removed.



3 DNA polymerase fills in the resulting gap.



4 DNA ligase seals the DNA strand. Now the injury has been dealt with.