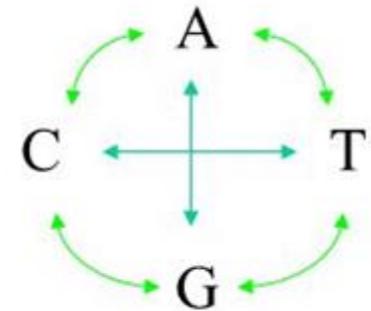


# **Mutations de l'ADN et systèmes de réparation**

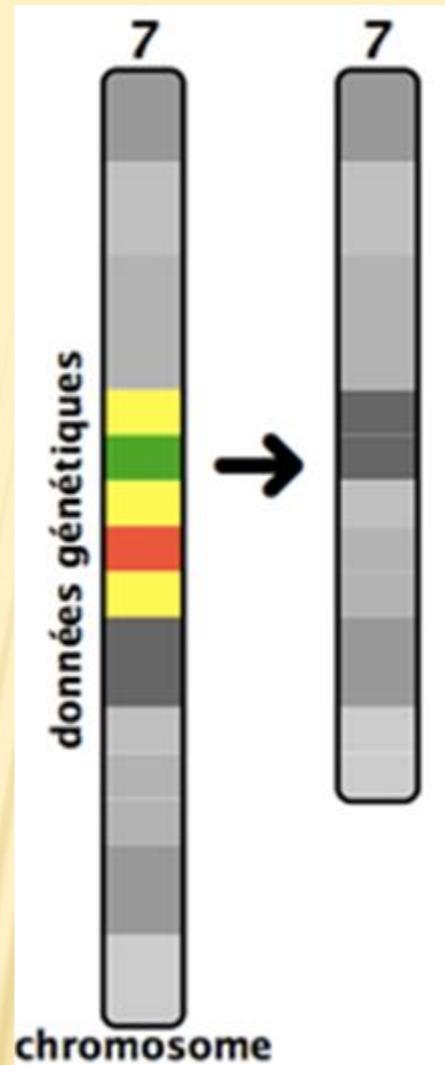
. PONCTUELLES:

Transition

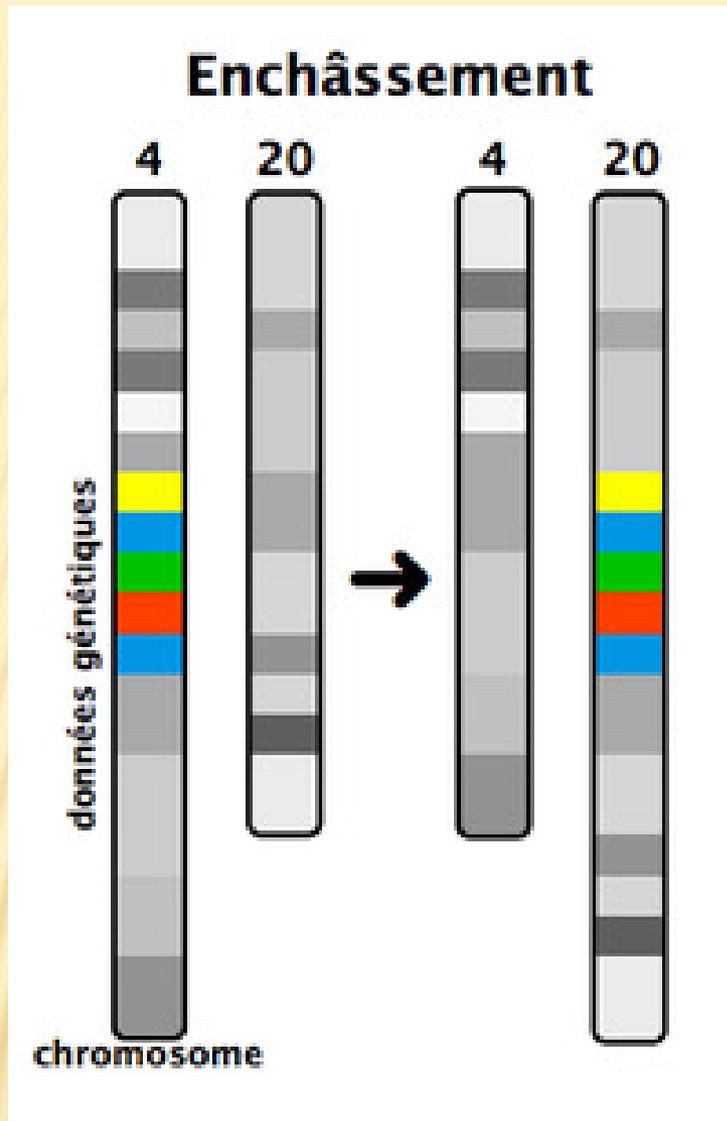
Transversion



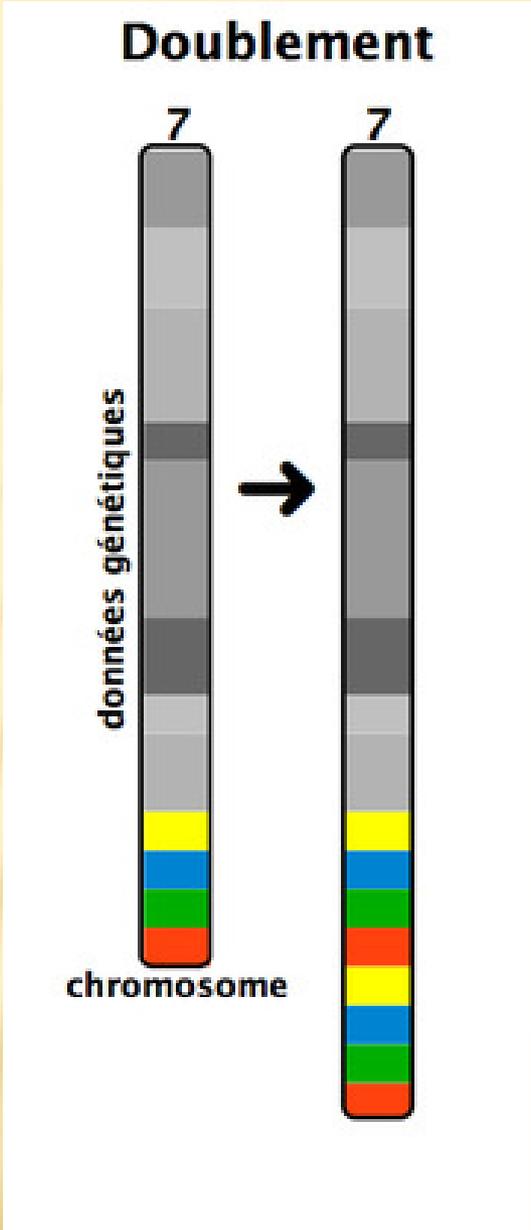
**Mutation ponctuelle**



**Mutation par délétion**

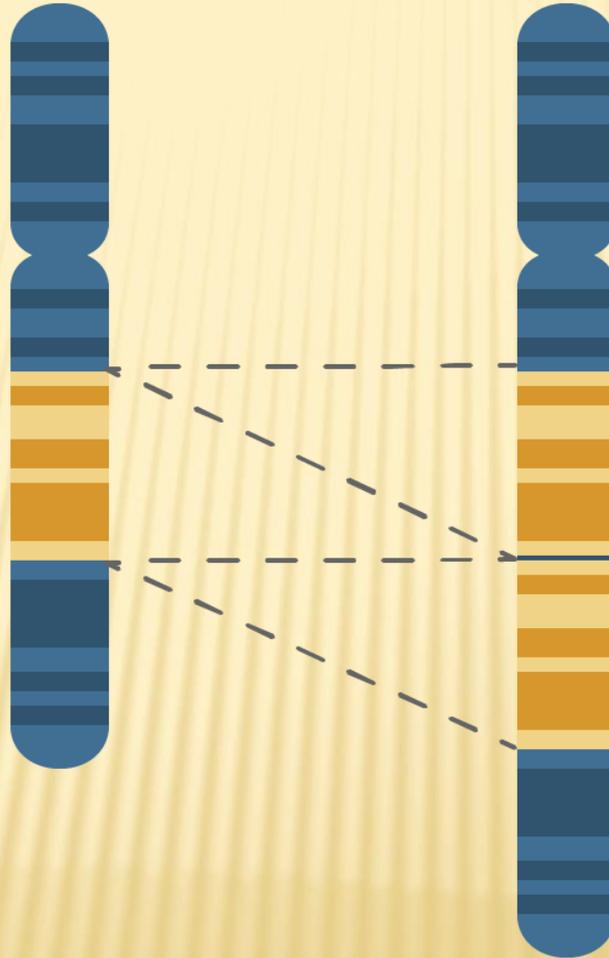


**Mutation par insertion**



**Mutation par duplication**

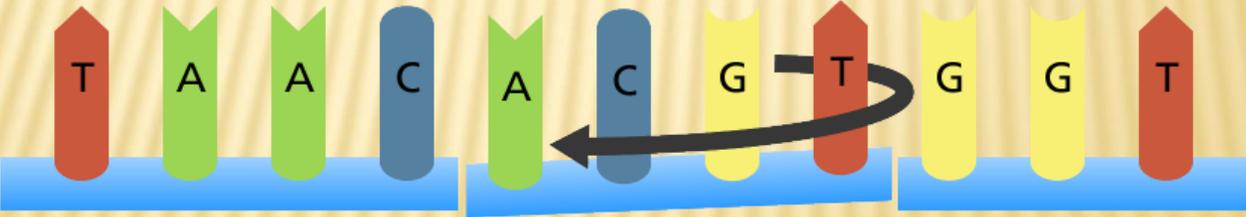
# Duplication



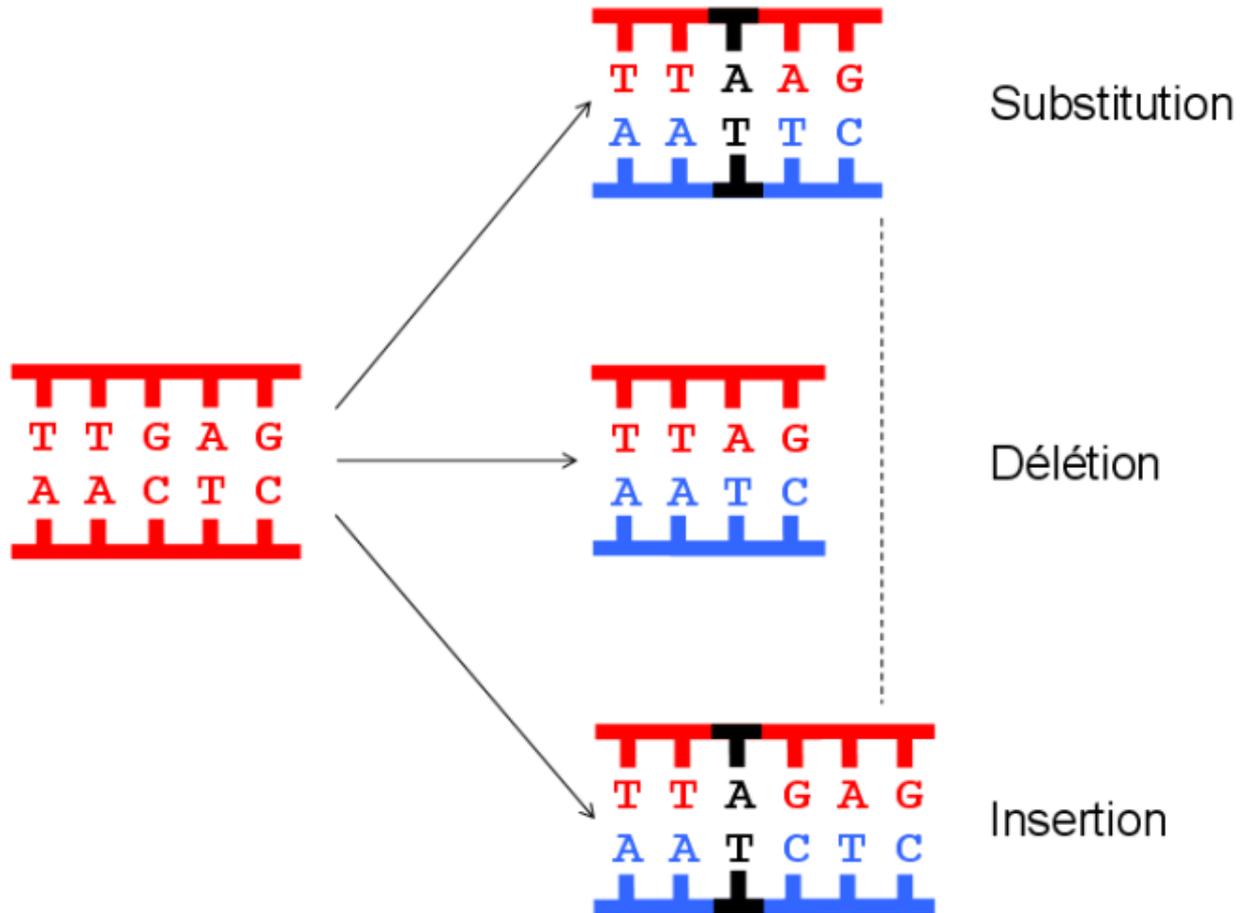
Original sequence



Inversion



**Mutation par inversion**



CAC TGG AAT TTG ADN avant  
 GUG ACC UUA AAC ARNm  
 Val — Thr — Leu — Asn protéine

### Addition

CAC TGG AAT TTG ADN avant  
 CAC TGG **TAA** TTT ADN après  
 GUG ACC **AUU** AAA ARNm  
 Val — Thr — **Ile** — **Lys** protéine

### Délétion

CAC TGG AAT TTG ADN avant  
 CAC TGG ATT TG ADN après  
 GUG ACC UAA AC ARNm  
 Val — Thr ... protéine

Substitution

### Mutation silencieuse

CAC TGG AAT TTG ADN avant  
 CAC TG**T** AAT TTG ADN après  
 GUG **ACA** UUA AAC ARNm  
 Val — Thr — Leu — Asn protéine

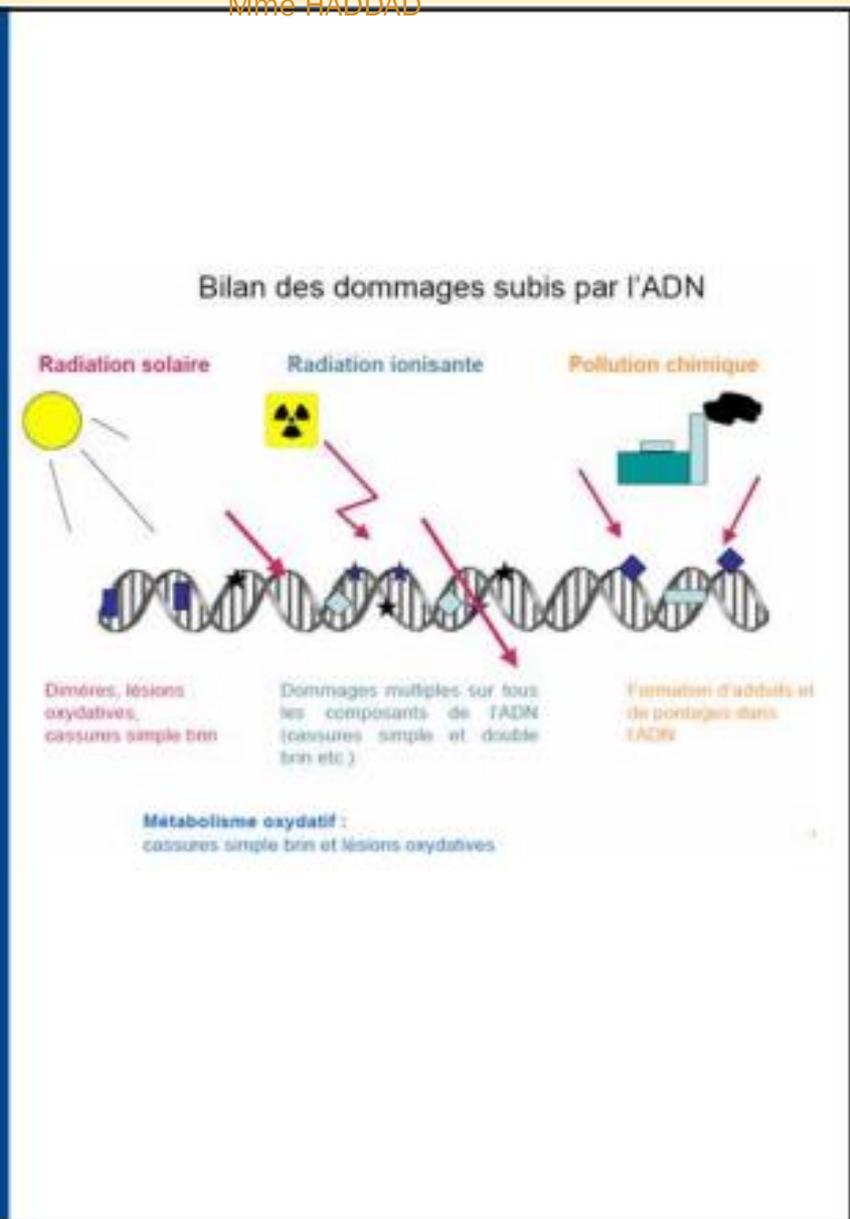
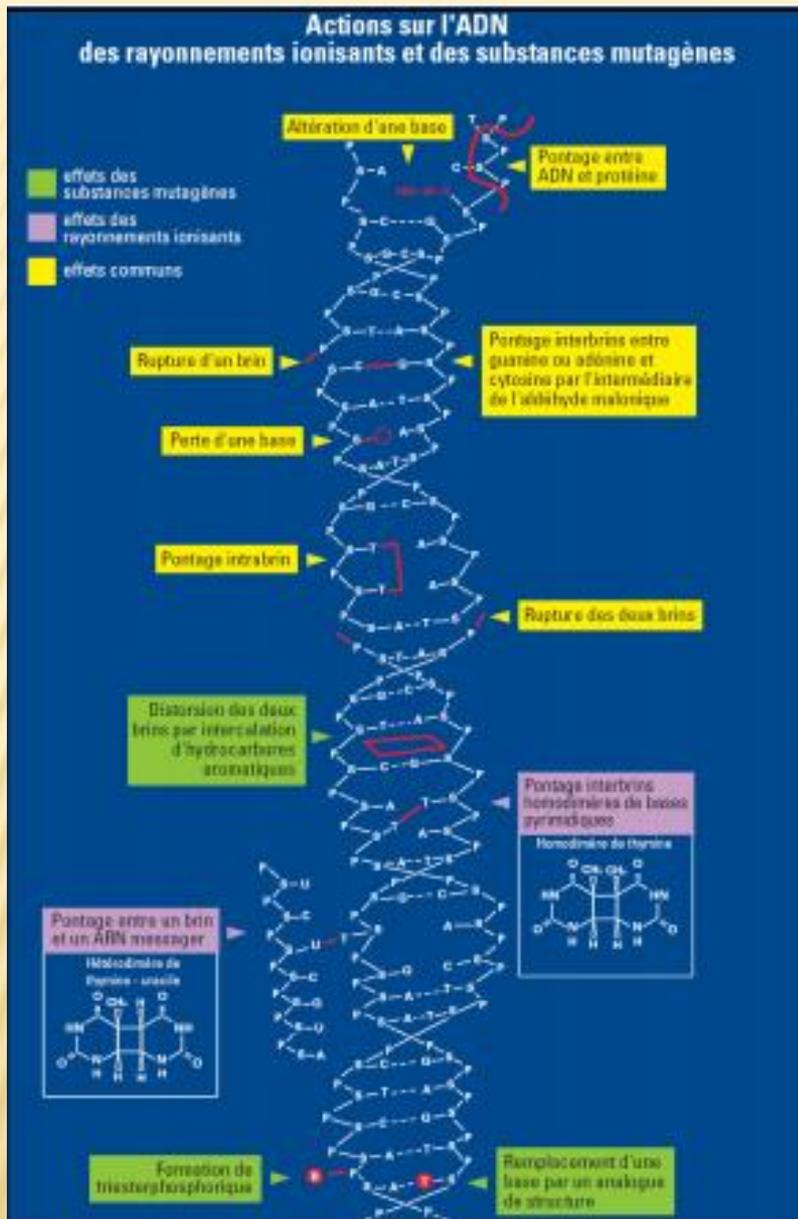
### Mutation faux-sens

CAC TGG AAT TTG ADN avant  
 CAC T**CG** AAT TTG ADN après  
 GUG **AGC** UUA AAC ARNm  
 Val — **Ser** — Leu — Asn protéine

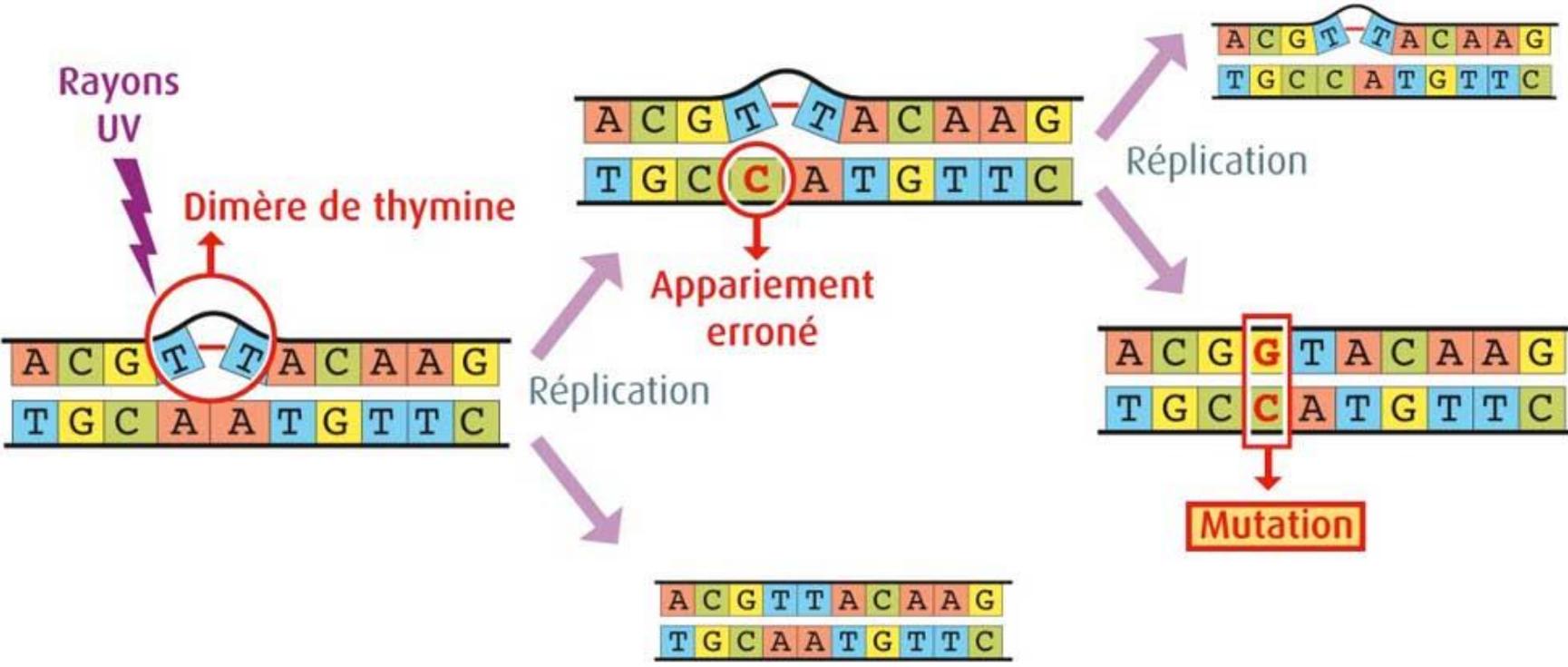
### Mutation non-sens

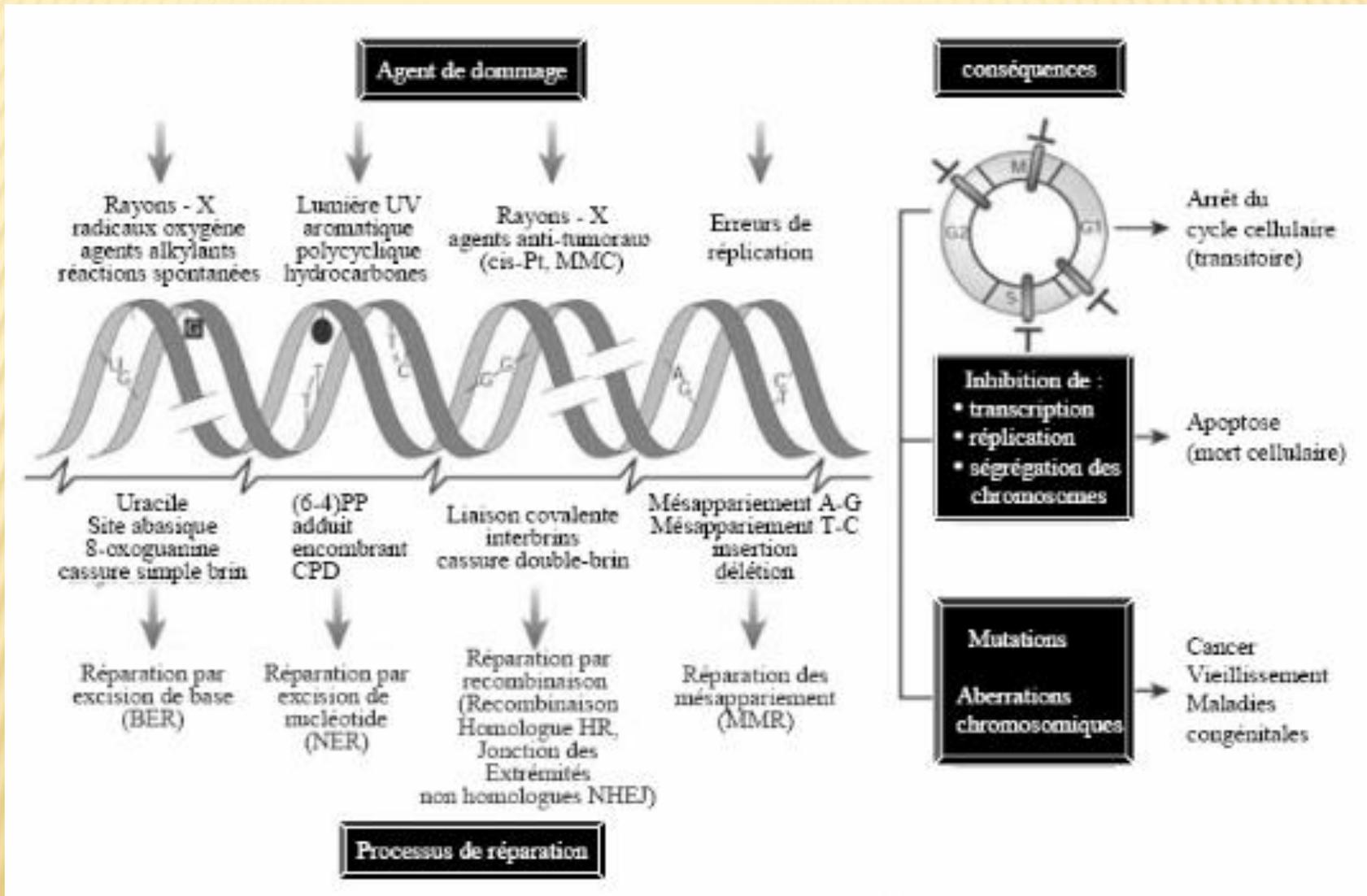
CAC TGG AAT TTG ADN avant  
 CAC TGG A**CT** TTG ADN après  
 GUG ACC **UGA** AAC ARNm  
 Val — Thr ... protéine

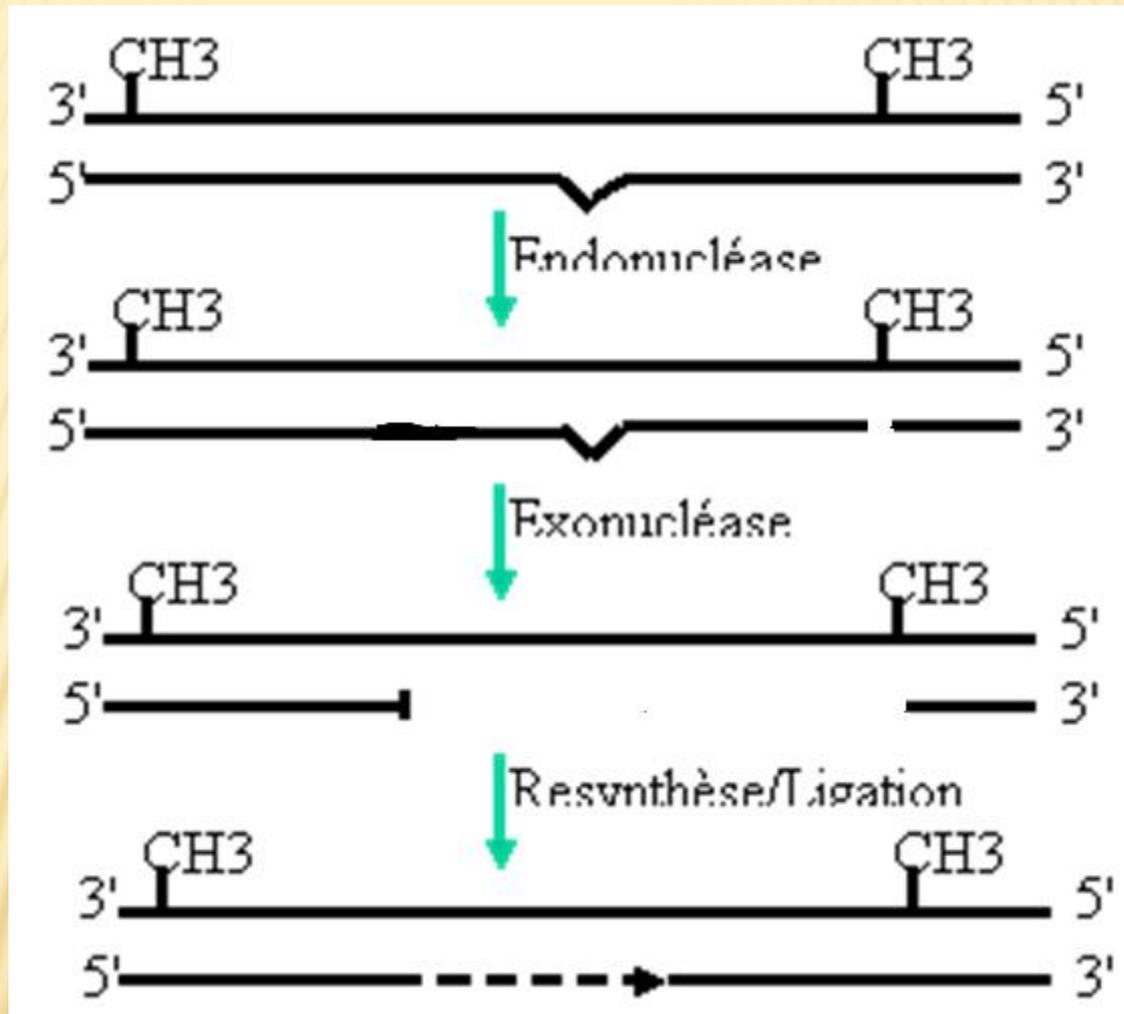
## Différents types de mutation



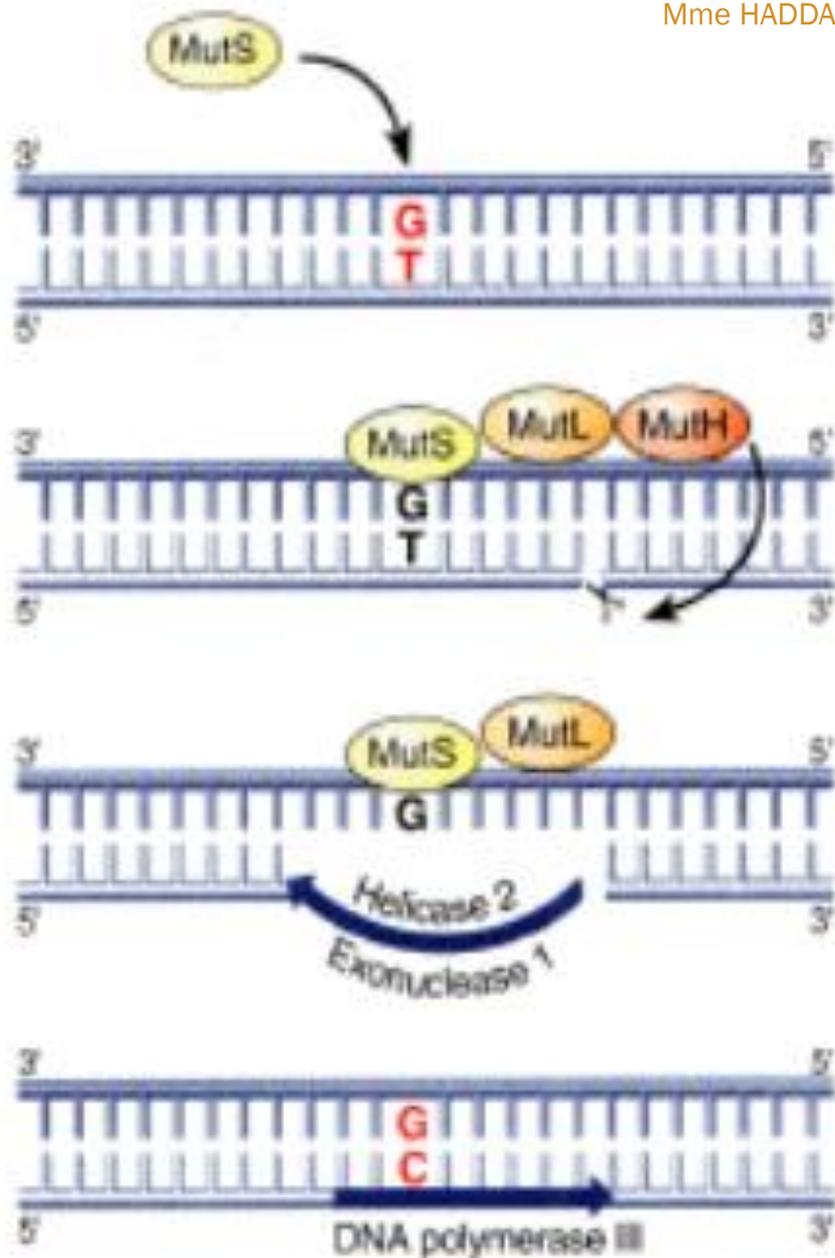
## Les facteurs mutagènes



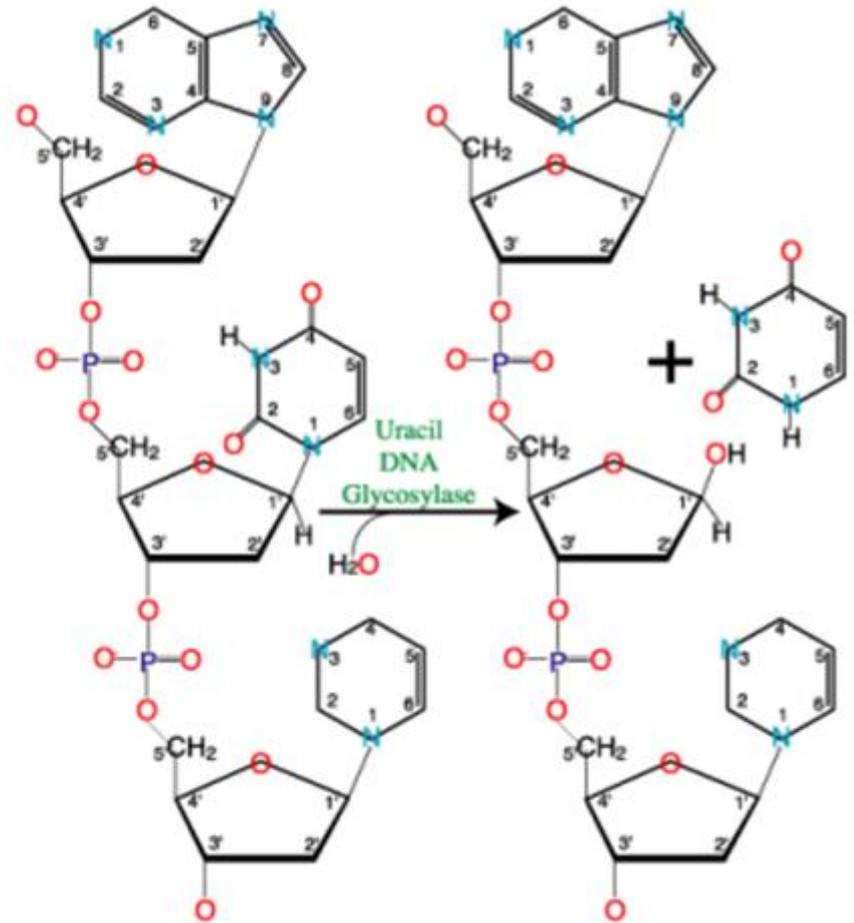
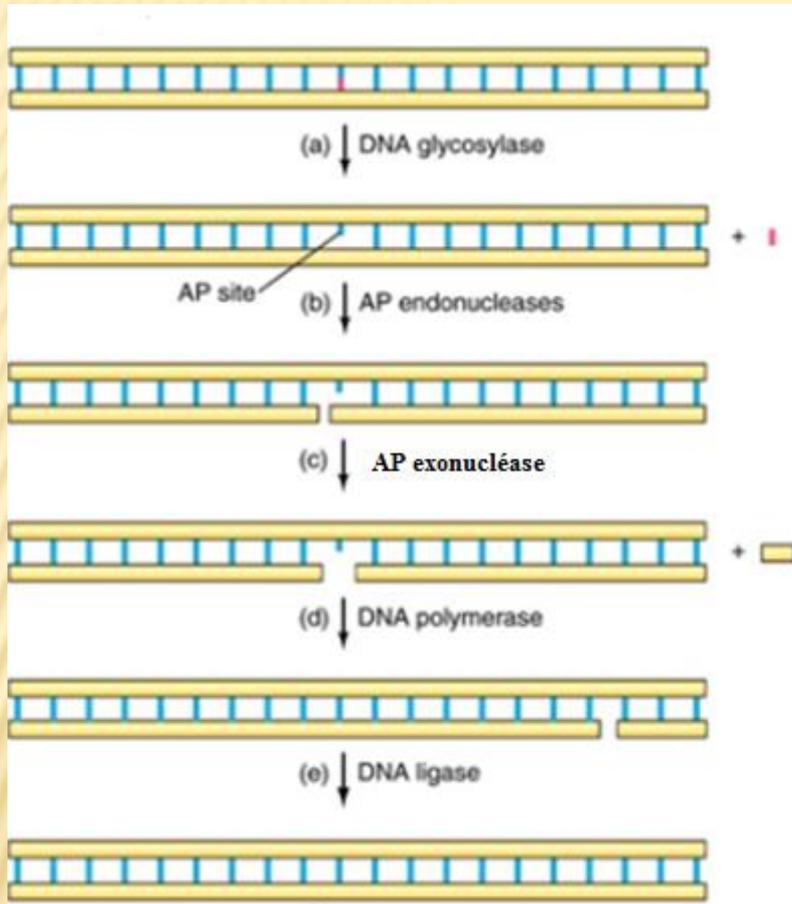




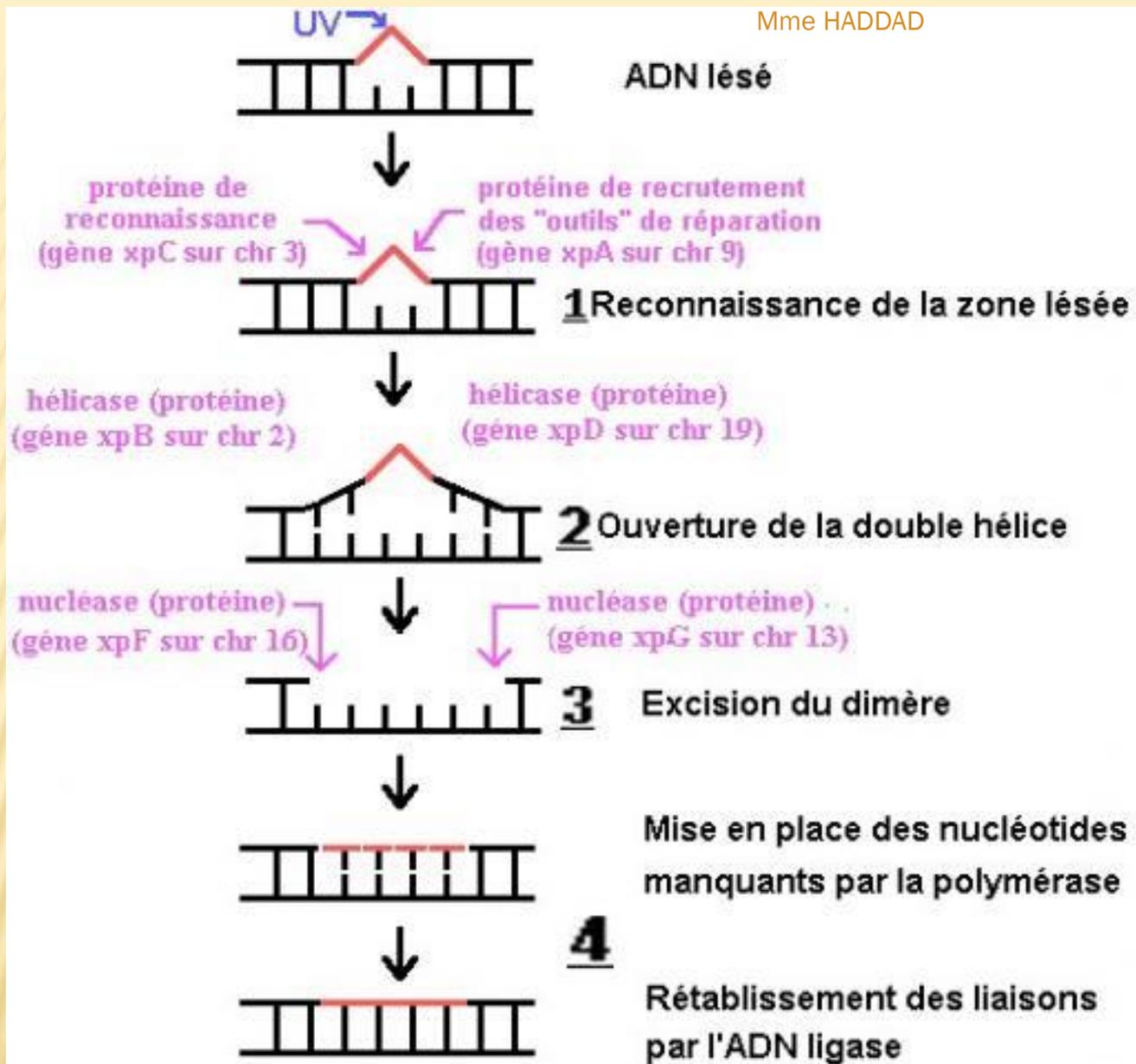
**Réparation des mismatch (MMR)**



Réparation des mismatch (MMR) chez E.coli



## Réparation par excision de base (BER)



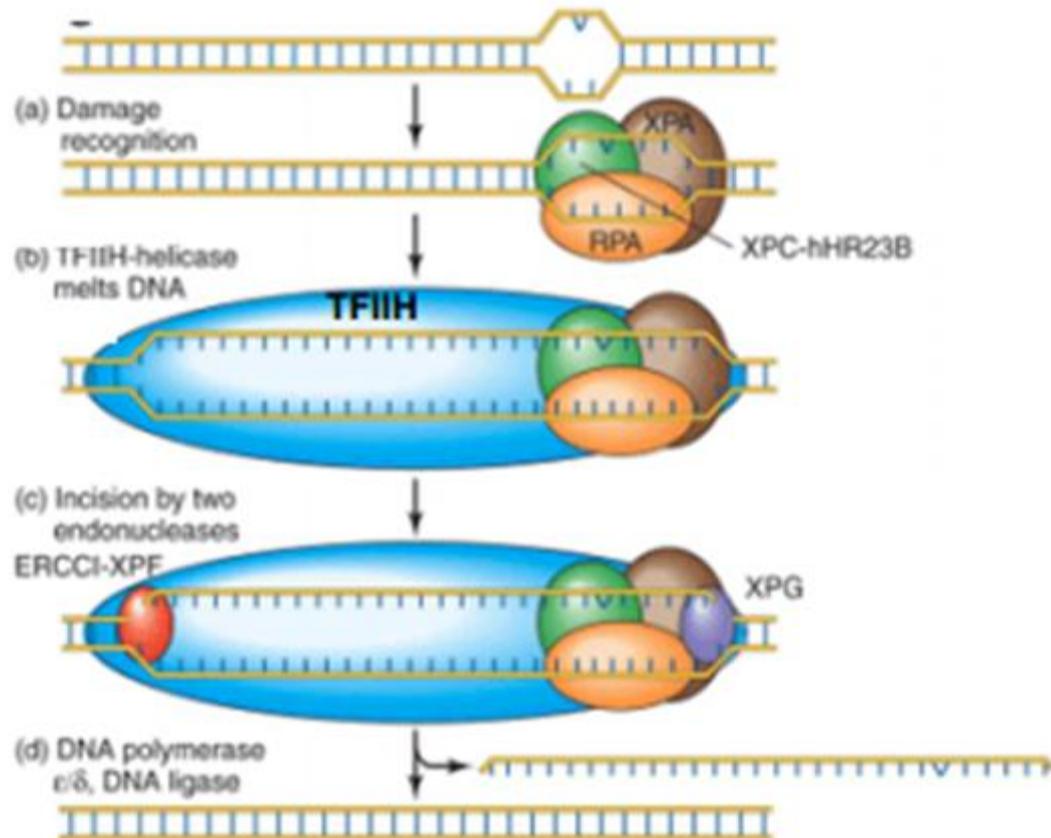
## Réparation par excision de nucléotides

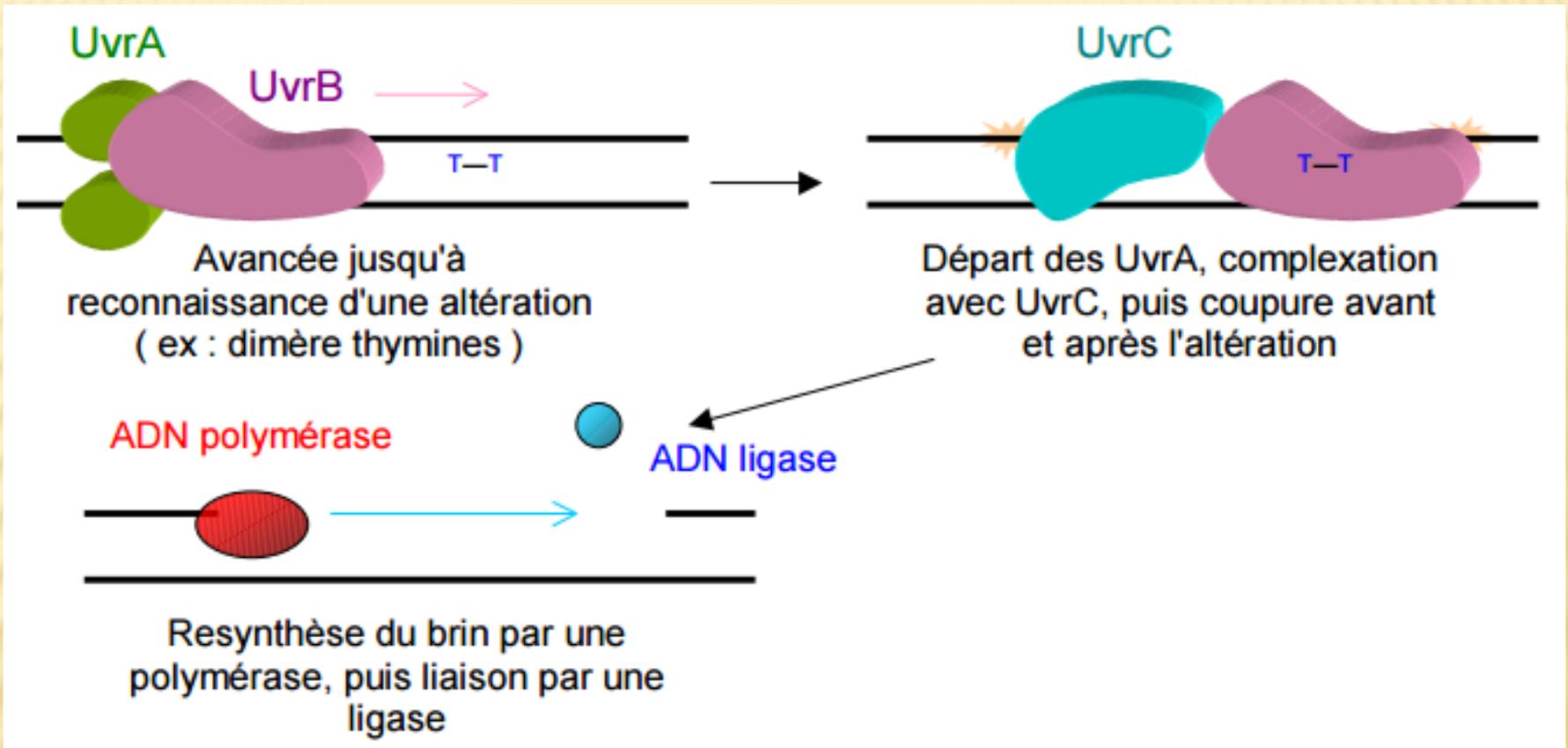
Enzyme	Fonction
XPC et XPE	Reconnaissance de la structure spatiale anormale de l'ADN à l'endroit de la lésion
XPB et XPD	Séparation des deux brins de l'ADN
XPA	Reconnaissance du brin d'ADN à réparer
XPF	Coupure du brin d'ADN en amont de la lésion
XPG	Coupure du brin d'ADN en aval de la lésion

# Réparation par excision de nucléotides NER

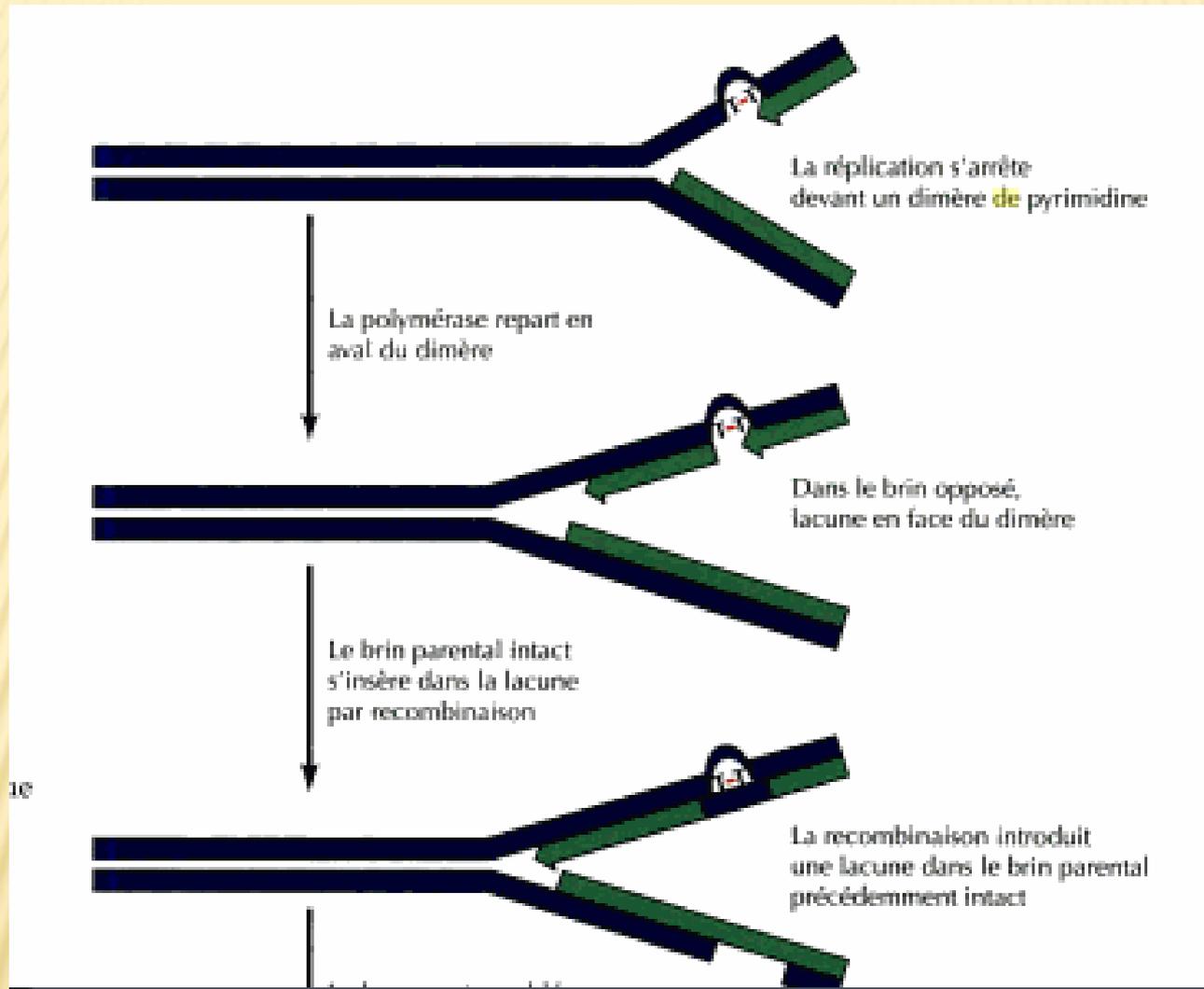
## Modèle humain

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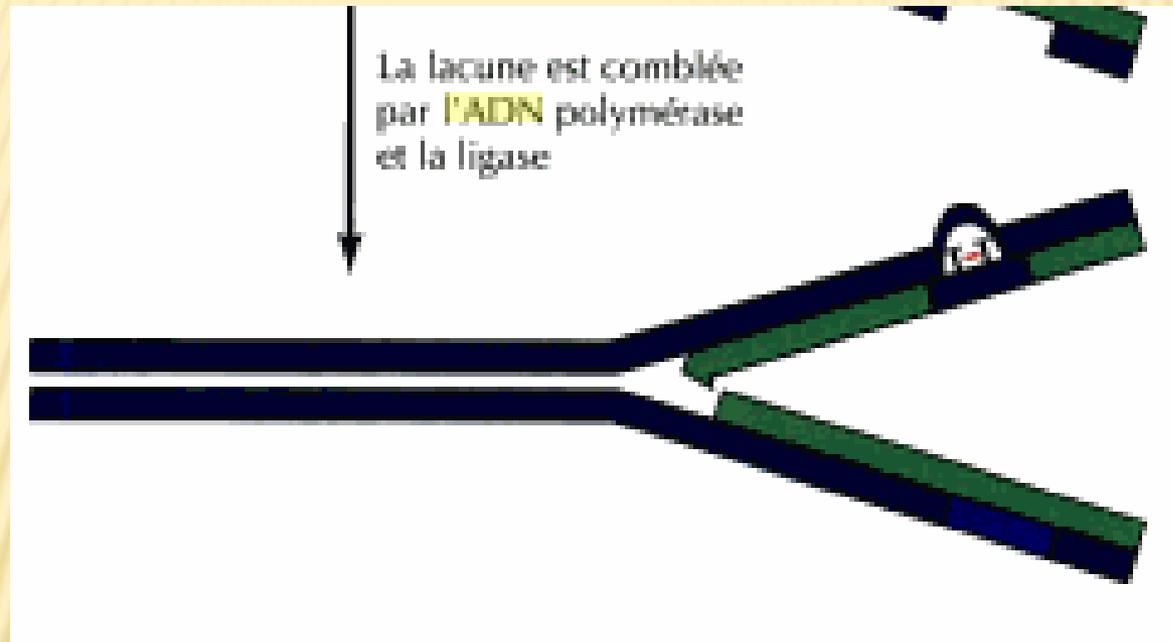




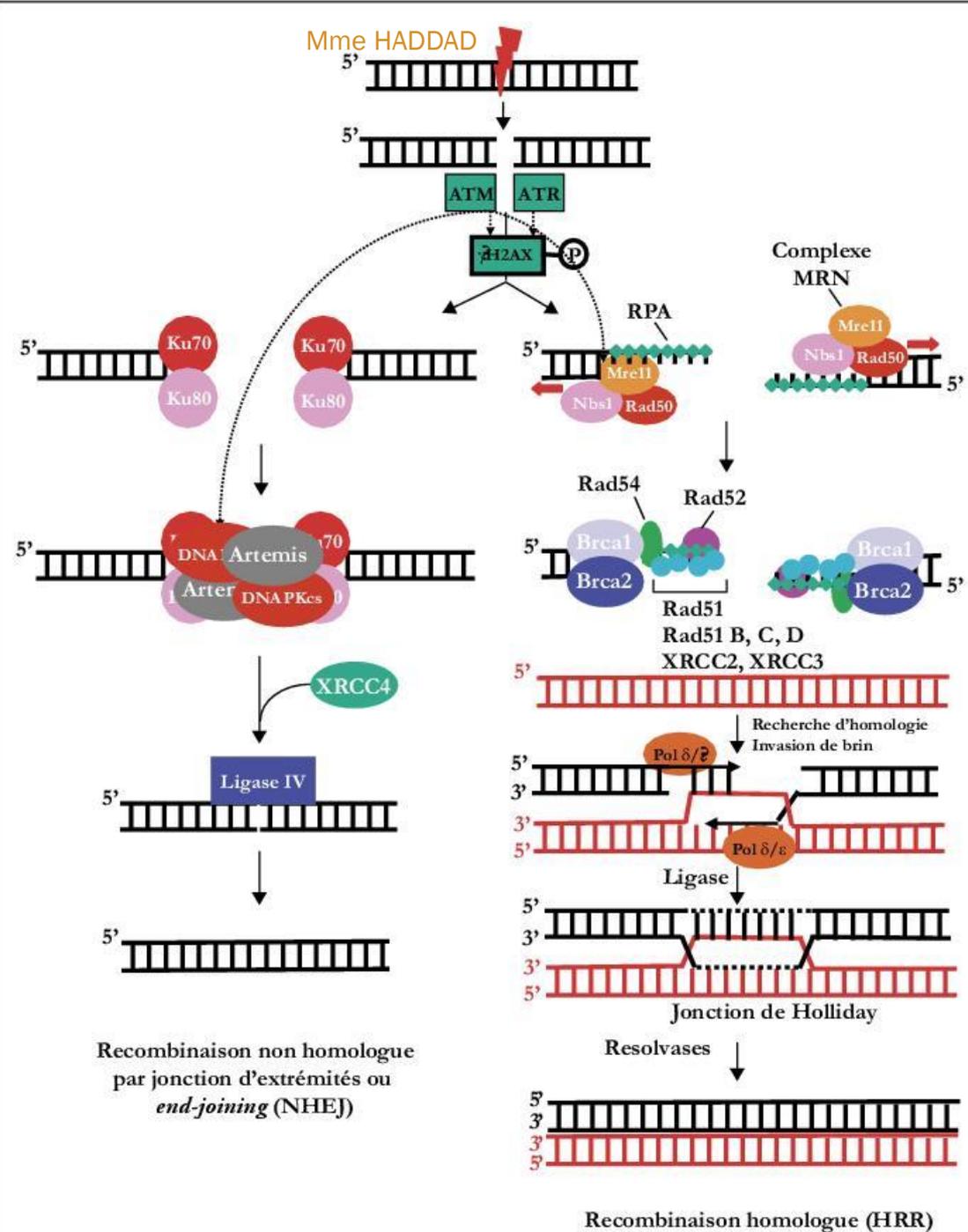
## Réparation par excision de nucléotides (NER) (bactéries)



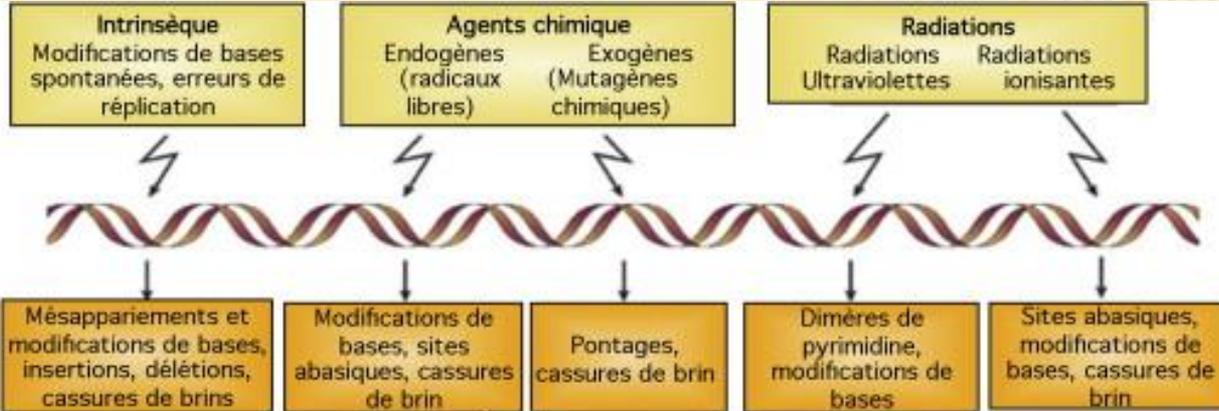
## Réparation par recombinaison (réparation des fourches de réplication)



# Réparation par recombinaison (réparation des cassures double brin)



Sources des dommages



Lésions de l'ADN

Mécanismes de réparation

