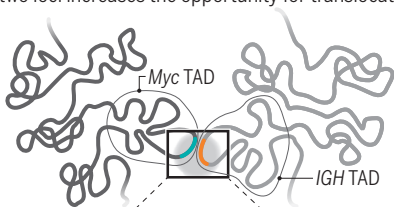


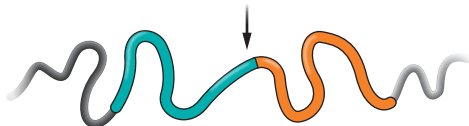
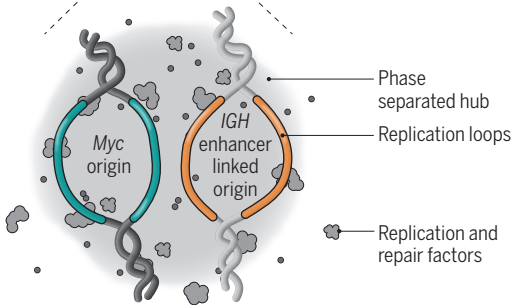
# Translocations at replication hubs

The immunoglobulin heavy chain (*IGH*) enhancer on chromosome 14 and the *MYC* locus on chromosome 8 form translocations that are associated with lymphoma. These loci also contain DNA replication origins and the *IGH* locus undergoes recombination in B cells during antibody maturation. These processes and the proximity of the two loci increases the opportunity for translocation.

The **MYC** and **IGH** loci are in topological associating domains (TADs) that are close to each other in the nucleus.



*MYC* and *IGH* chromatin loops contain replication origins. The concentration of replication and recombination repair proteins creates a **phase separated hub**.



Replication and recombination creates opportunities for DNA double strand breaks to arise in *MYC* and *IGH*, which can be joined to form **oncogenic *IGH-MYC* translocation**.