

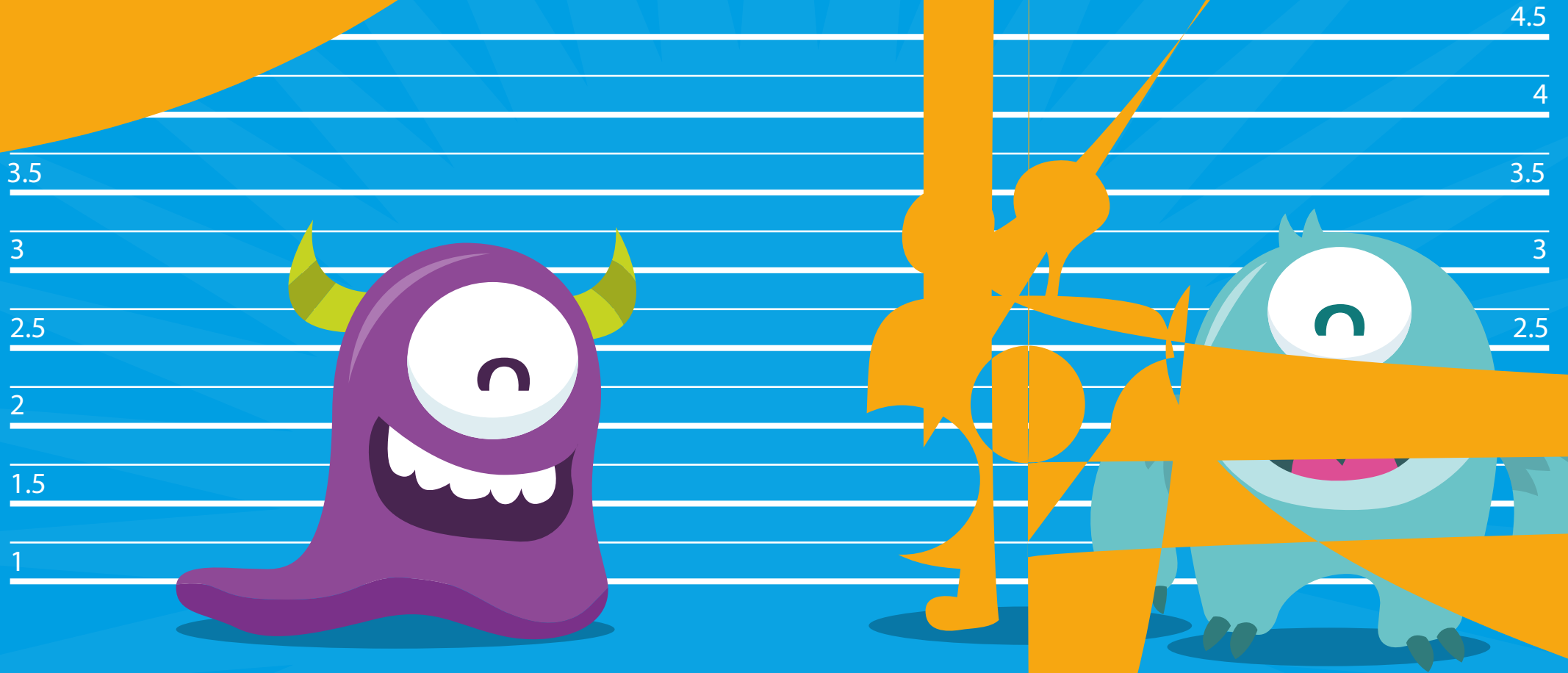
Missing Antibody Puzzle Pieces – Danger to Older People



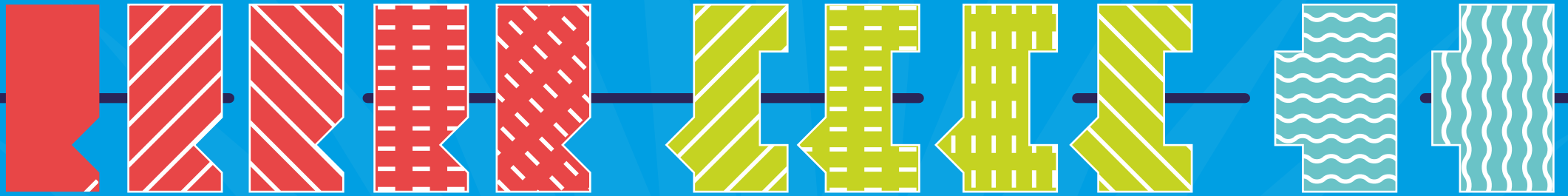
Instead, every B-Cell makes its own **unique antibody** out of a small set of components - **V**, **D** and **J** gene segments:



to recognise and stick to
(ms), known as antigens.



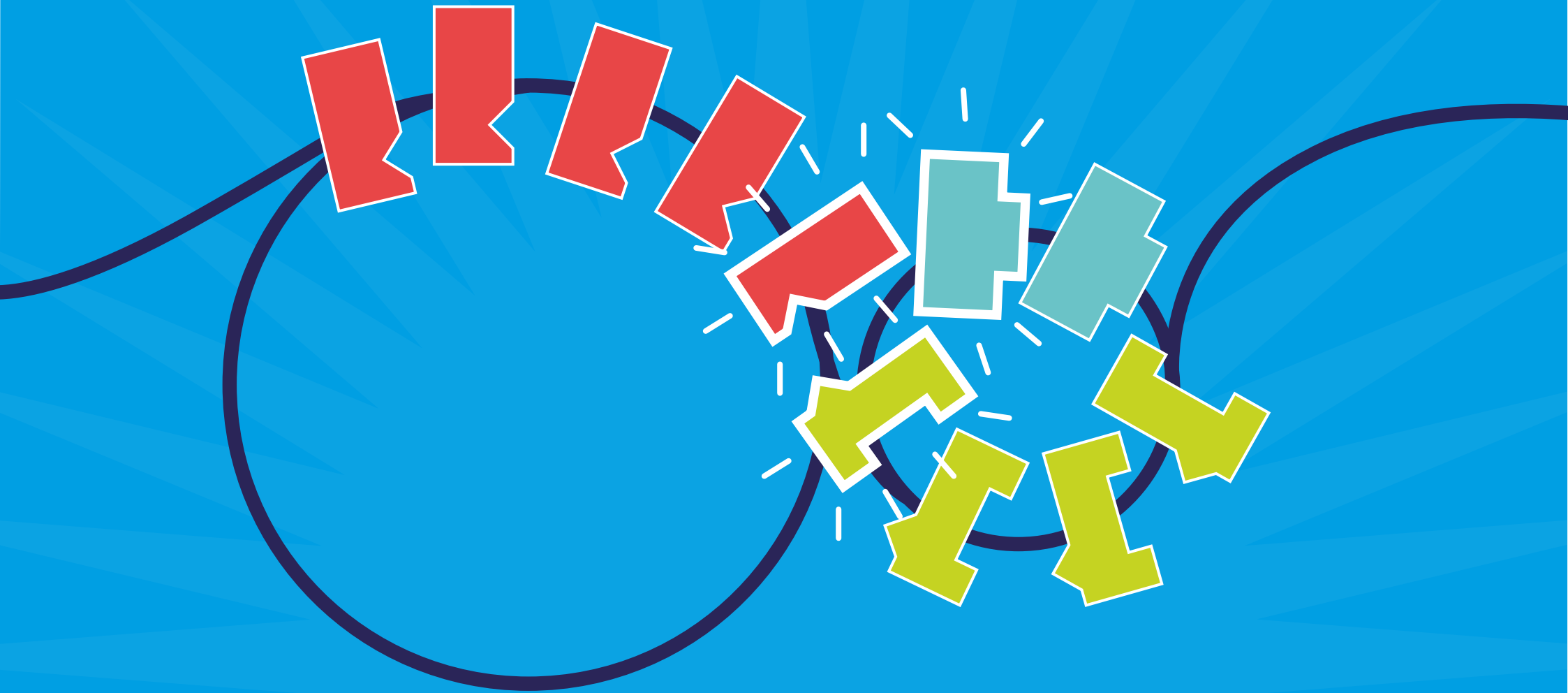
The DNA has to be **cut up and stuck back together** again to make an antibody.

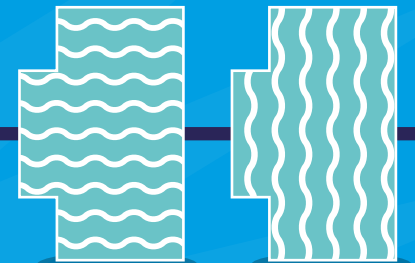
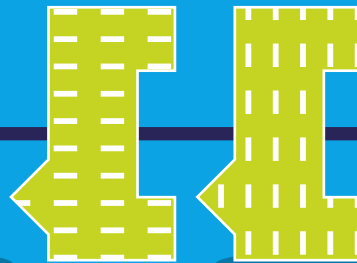
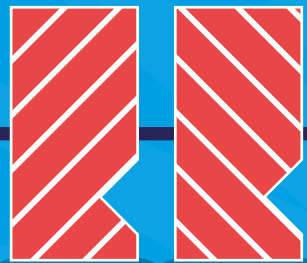


But the piece of DNA is so long that some of the gene segments are too far apart to be stuck together



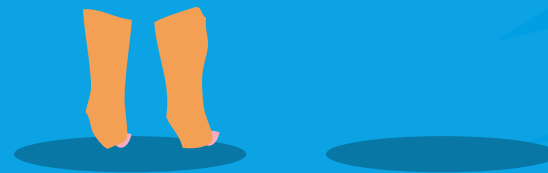
B-Cells get around this problem by making loops in the DNA, pulling **far apart** gene segments **closer together**.







Older people have a weakened immune response.
VDJseq shows that **in older mice the far away V genes don't get chosen** as much as in younger mice.



We hope to understand whether problems with DNA looping or epigenetic marks cause this defect.



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Research in the Corcoran Lab focuses on understanding the role of chromatin and nuclear organisation in controlling gene expression during the development of the immune system:
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