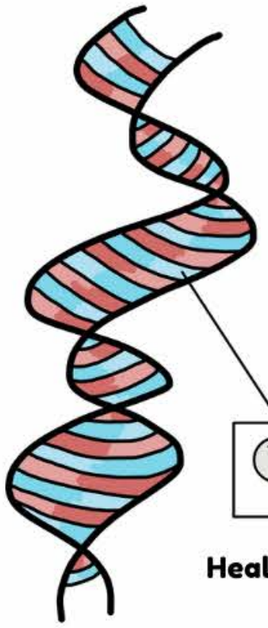
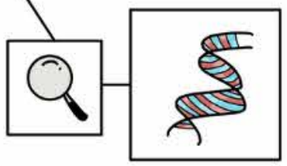
gene therapy

AN ADVANCEMENT IN BIOTECHNOLOGY.

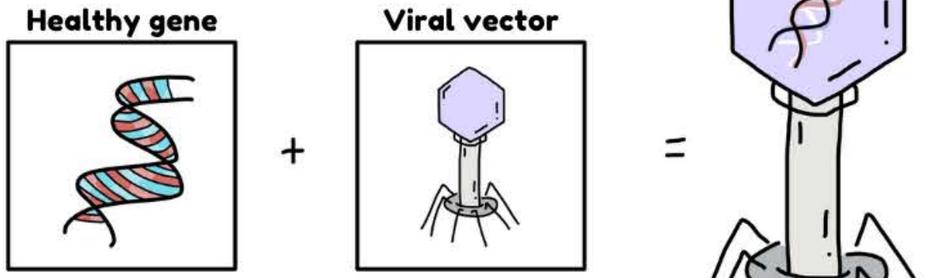


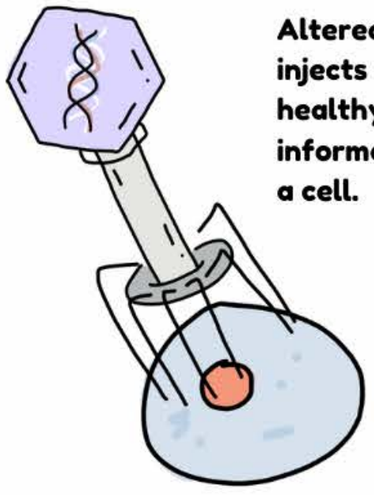
1. A healthy gene is isolated from a DNA strand with restriction enzymes.



Healthy gene detected!

2. The healthy gene is inserted into a viral vector.

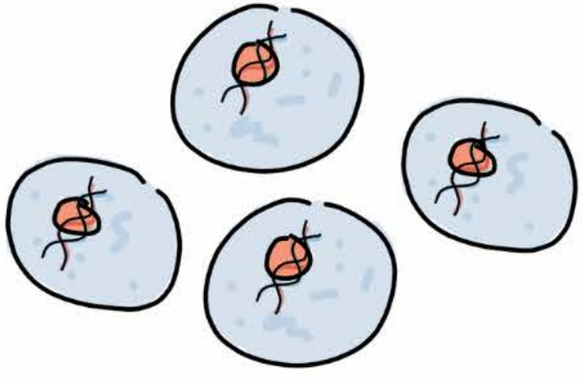




Altered virus injects the healthy gene's information into a cell.

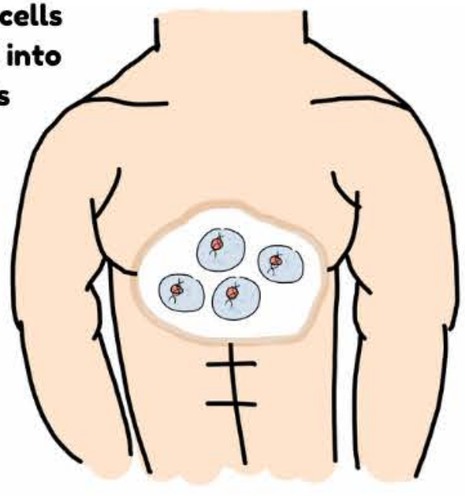
→

Cells become transgenic.



Transgenic cells are injected into the patient's body.

→



3. The altered virus feeds the healthy gene to the cells, making the cells transgenic. The transgenic cells are then injected into the patient's body, allowing the them to be treated.

Gene therapy is a technique that uses a viral vector with a healthy gene to replace a non functioning one. Diseases are often caused by mutations. Mutations in the DNA sequence change the proteins that are built. By using gene therapy, the gene with the correct DNA sequence is expressed, producing the needed protein. Gene therapy can treat diseases like cystic fibrosis, hemophilia, sickle cell anemia, heart disease, diabetes, etc.