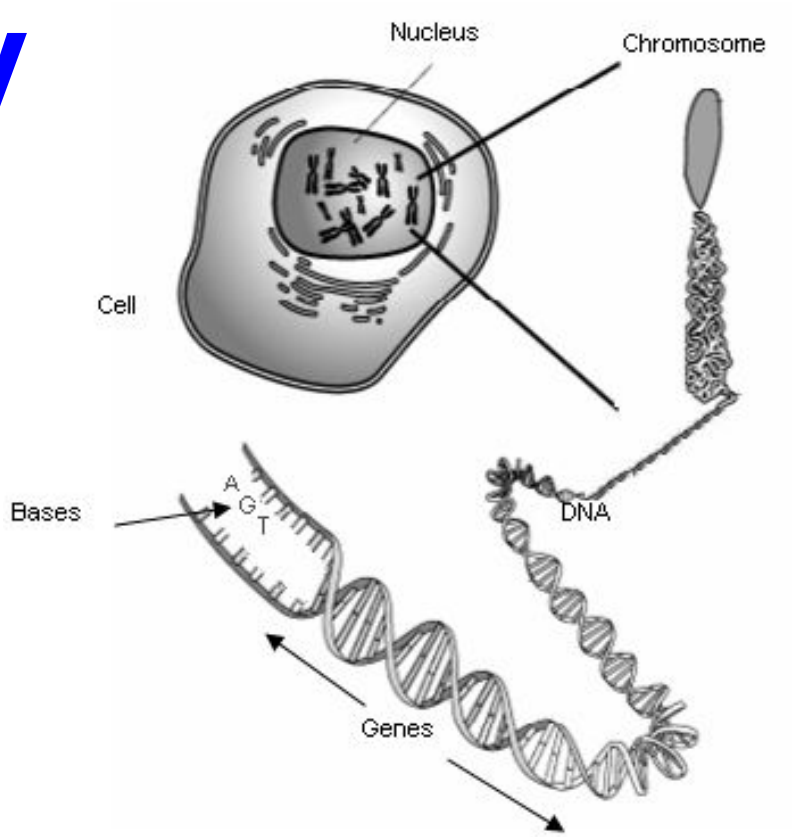
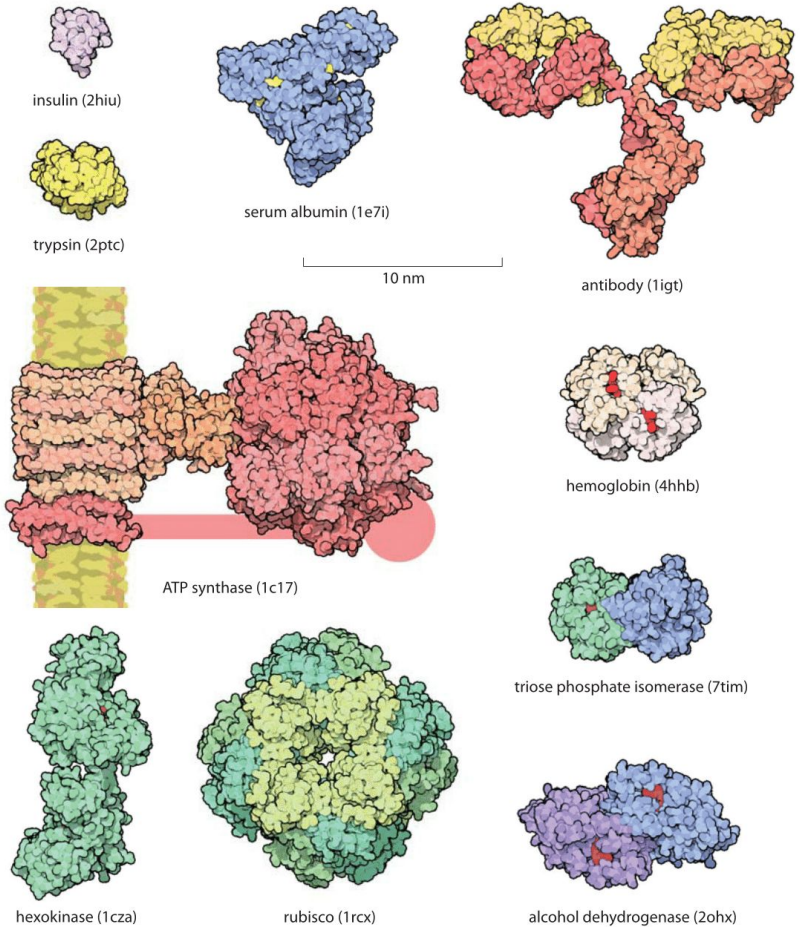
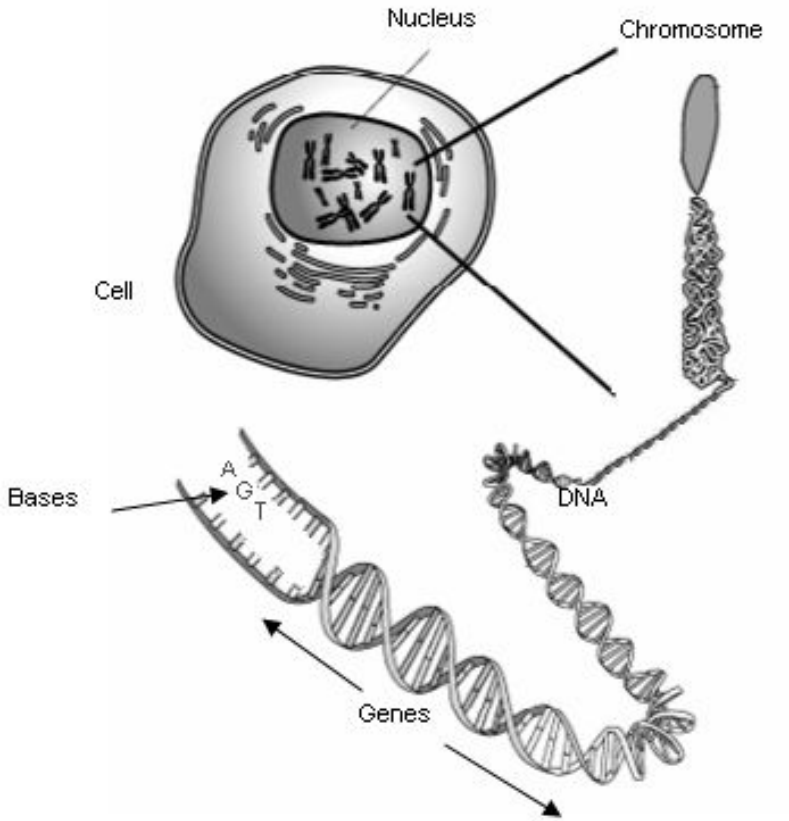
Gene Therapy



How are the body's proteins related to its genes?





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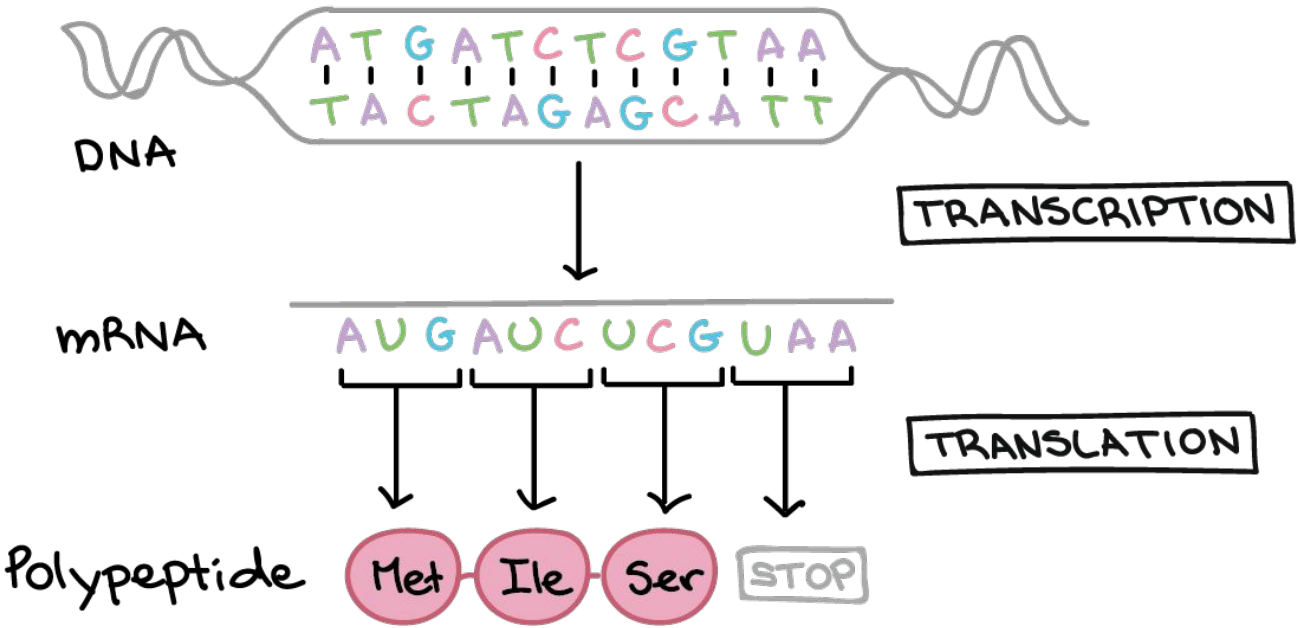
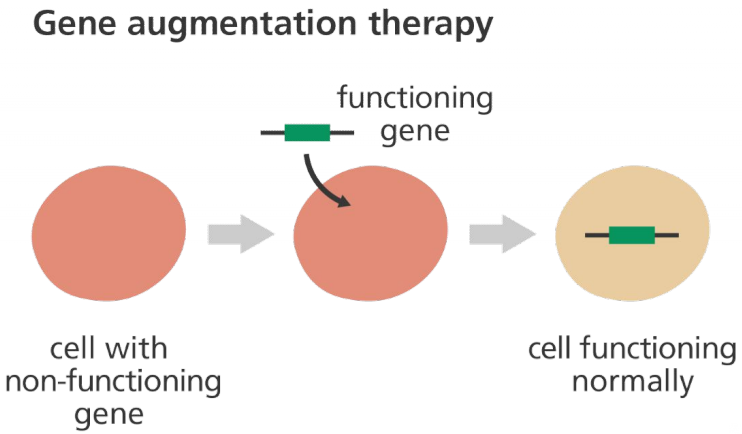
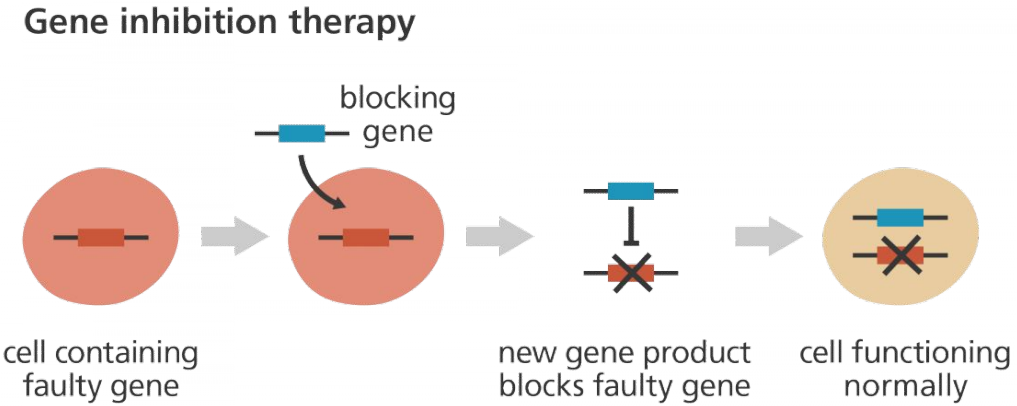


How does gene therapy work?





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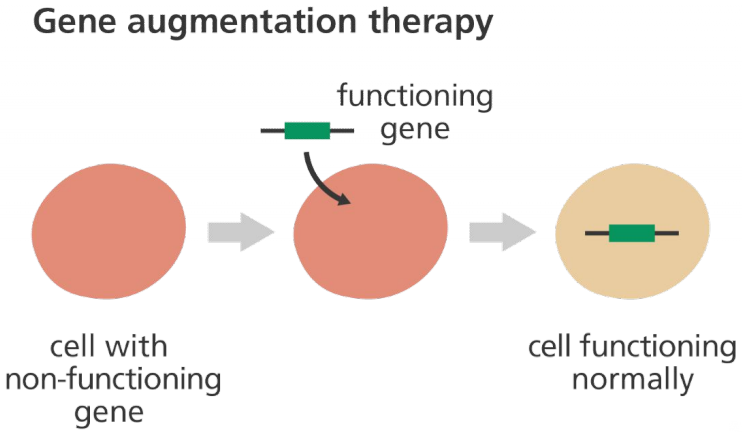
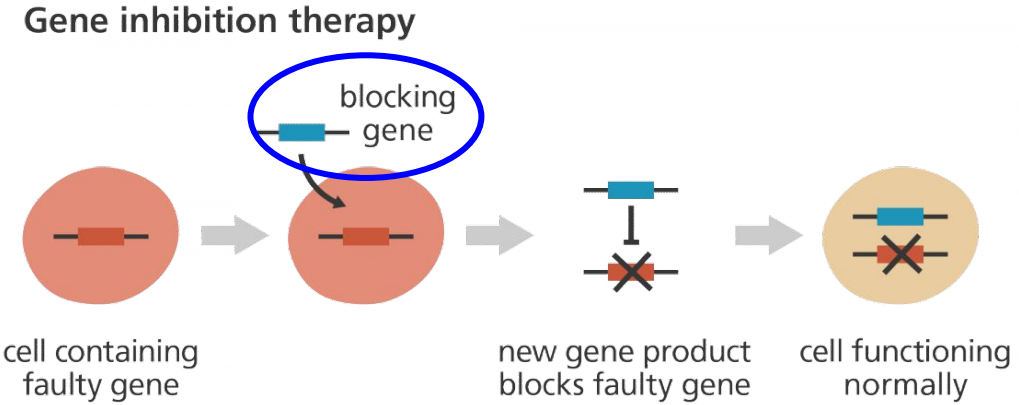
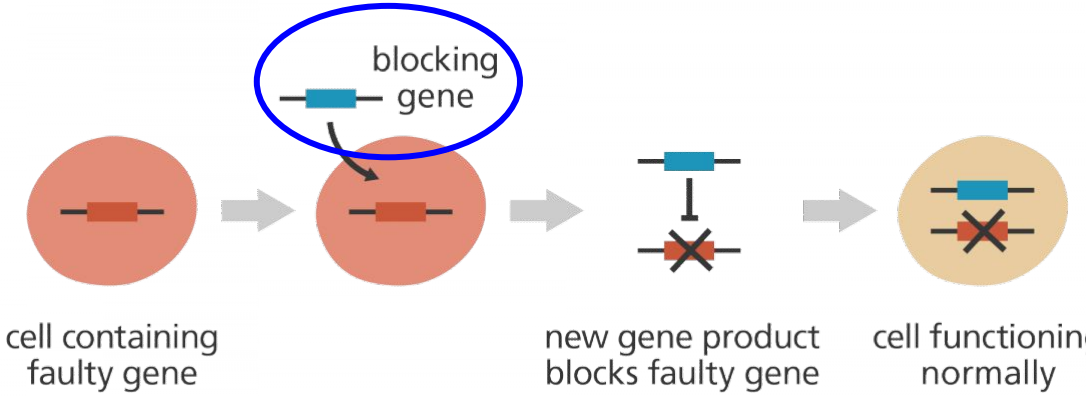
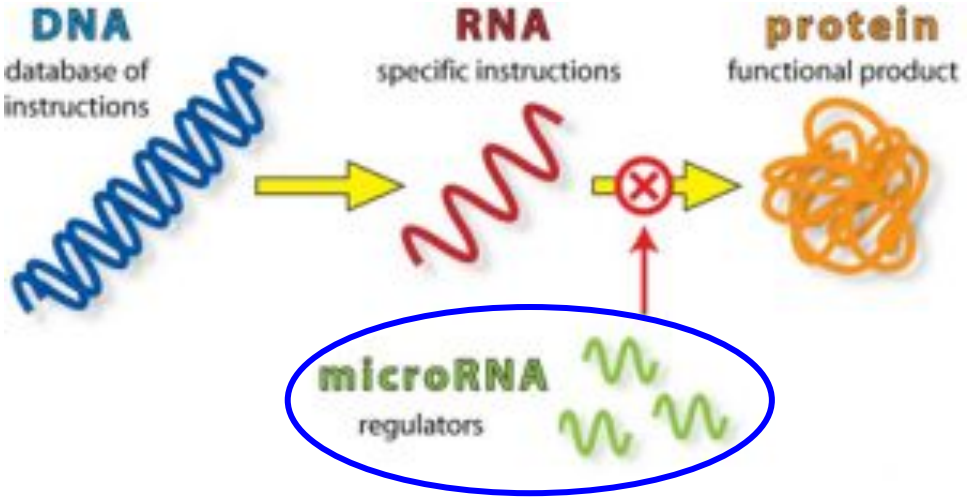


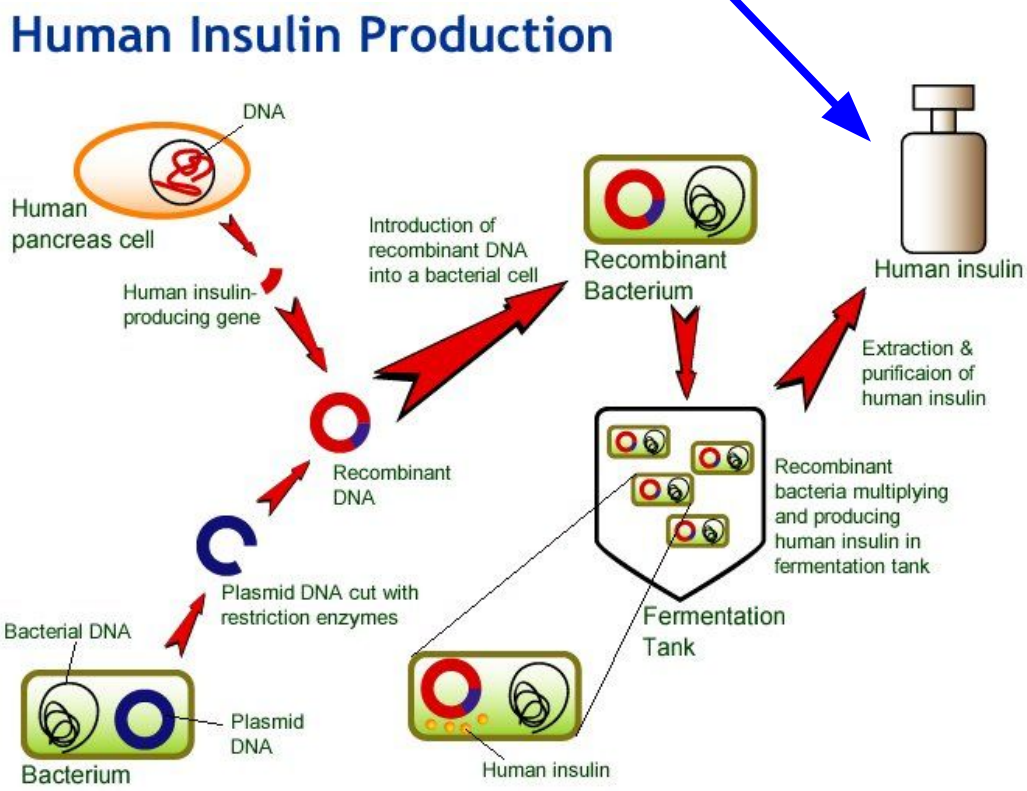


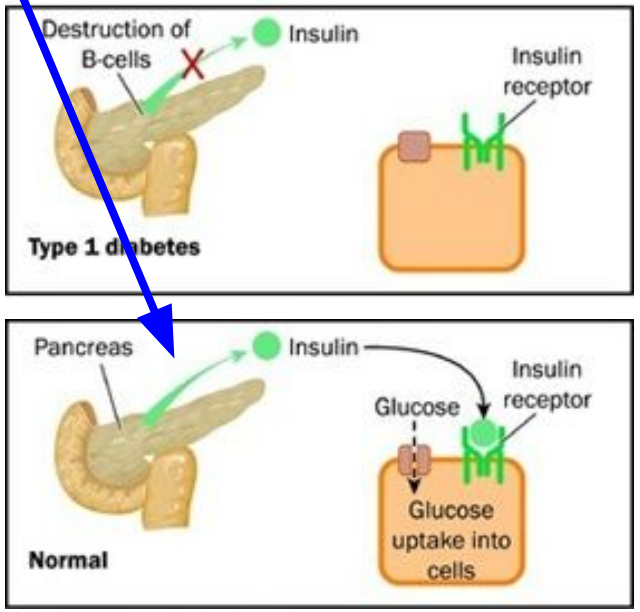
Gene inhibition therapy





Why might gene therapy be preferred to treatment with proteins like insulin?





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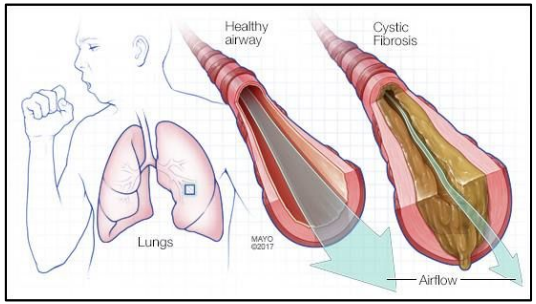
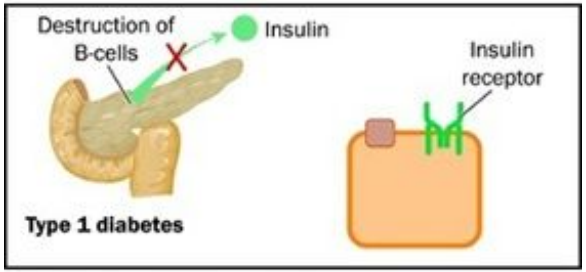


cystic fibrosis



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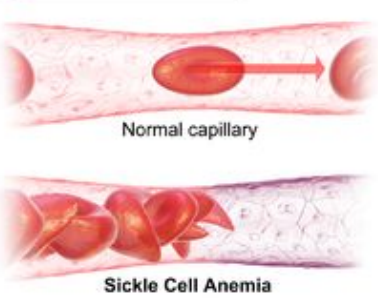
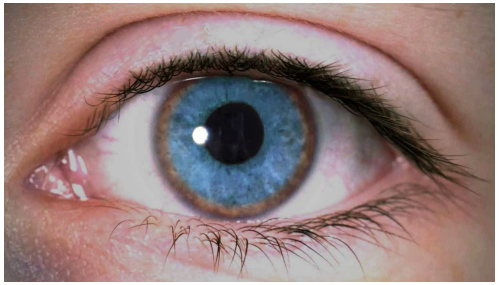


sickle cell anemia



Wilson's disease

Down syndrome

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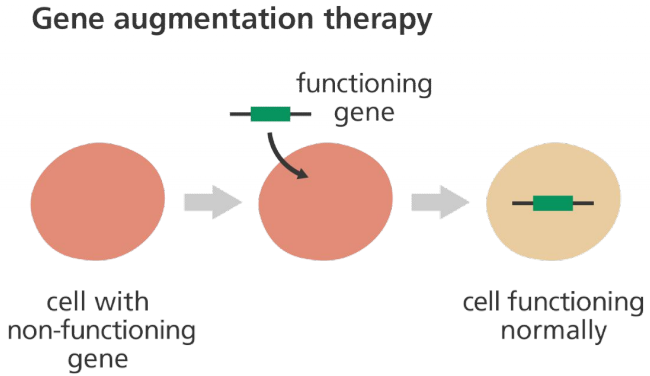

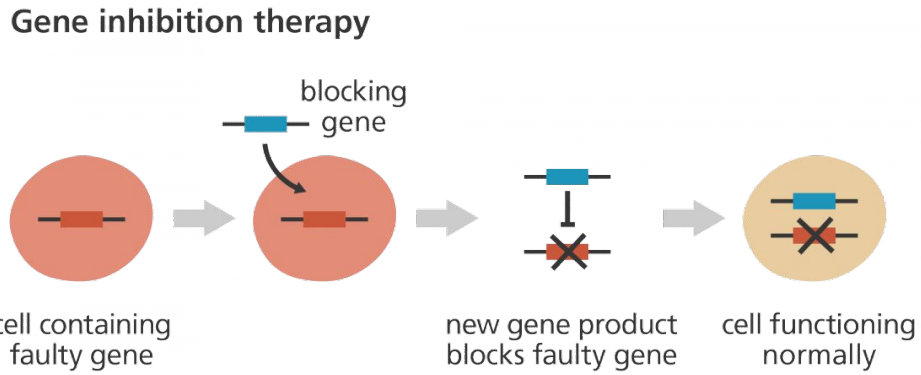

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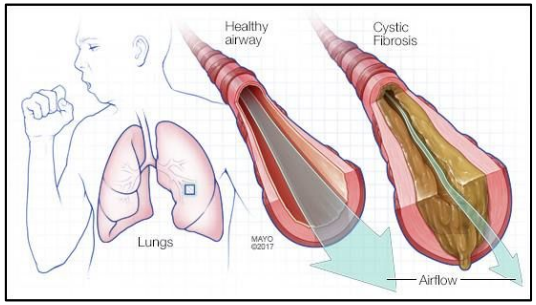

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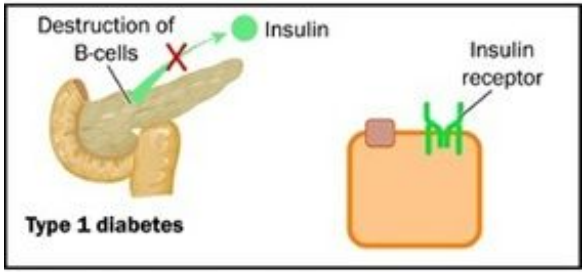

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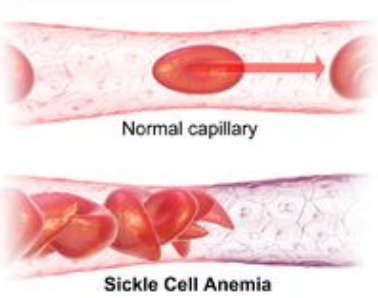

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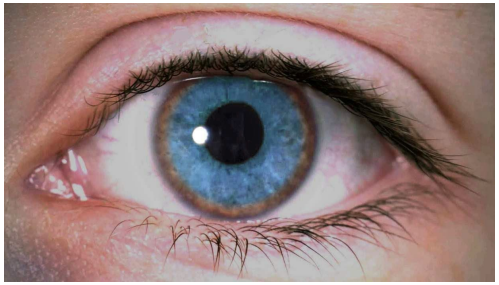

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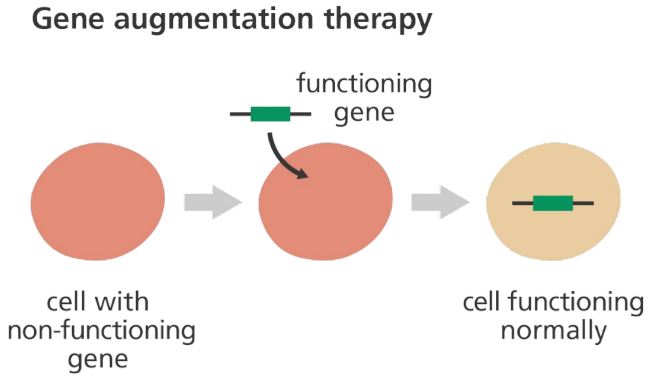

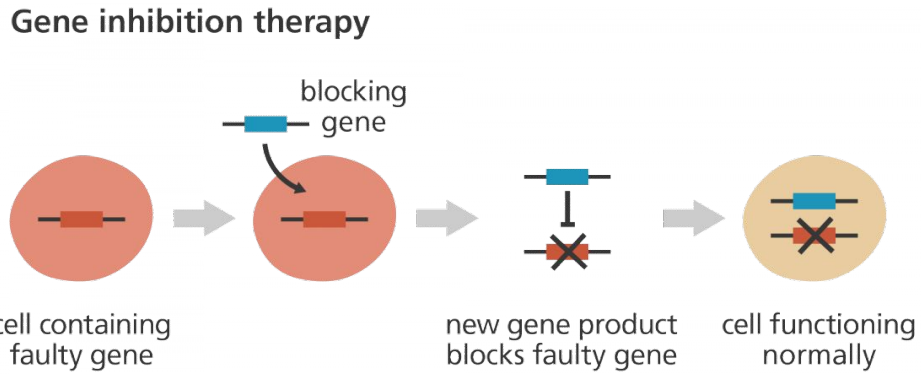

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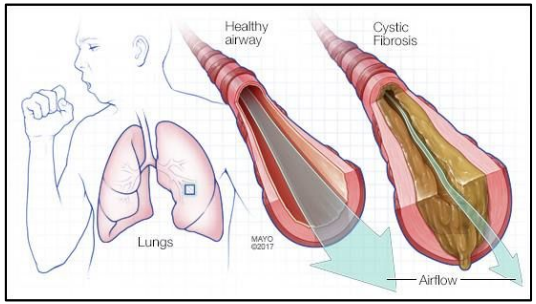

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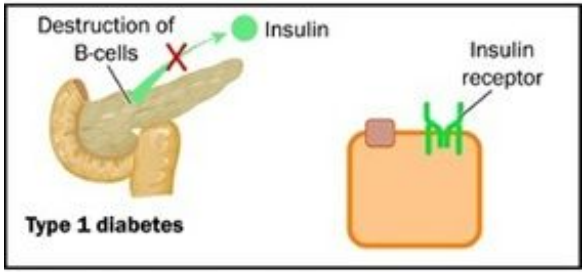

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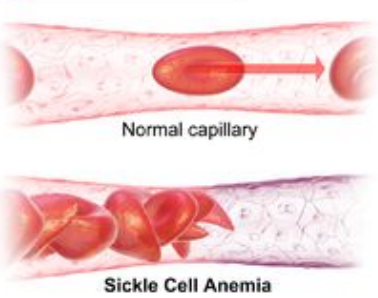

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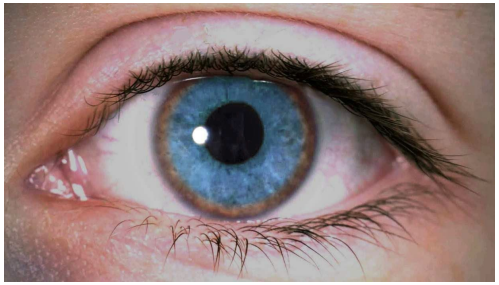

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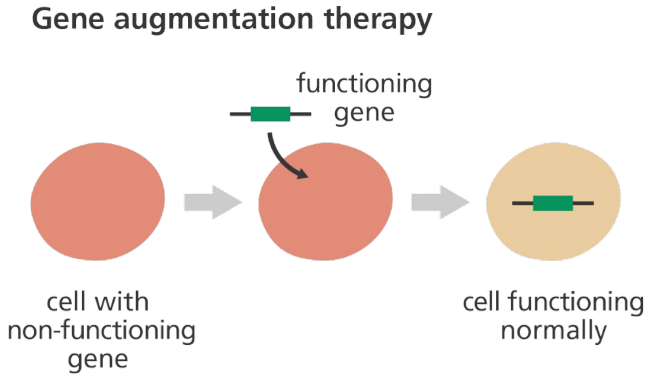

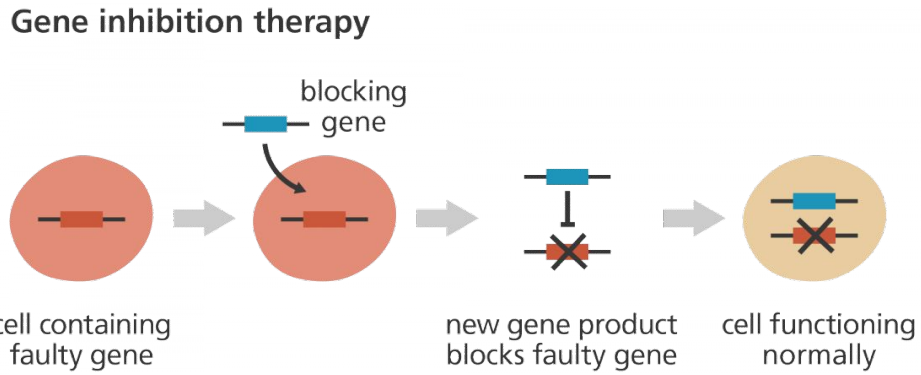

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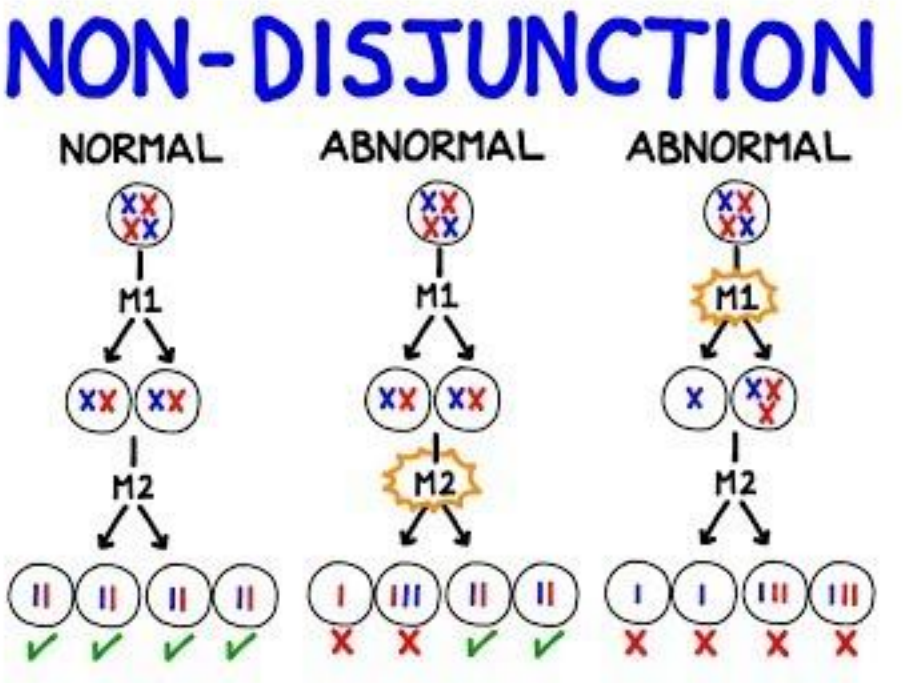

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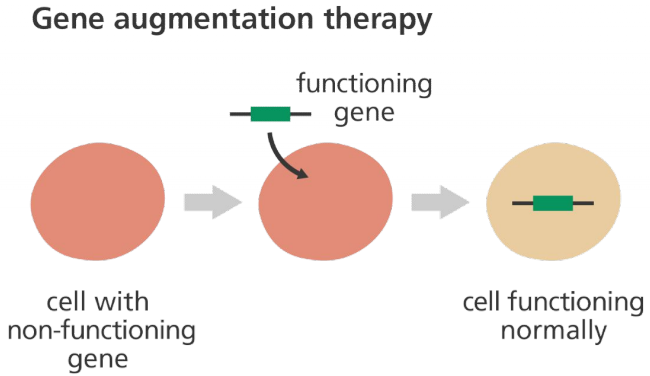

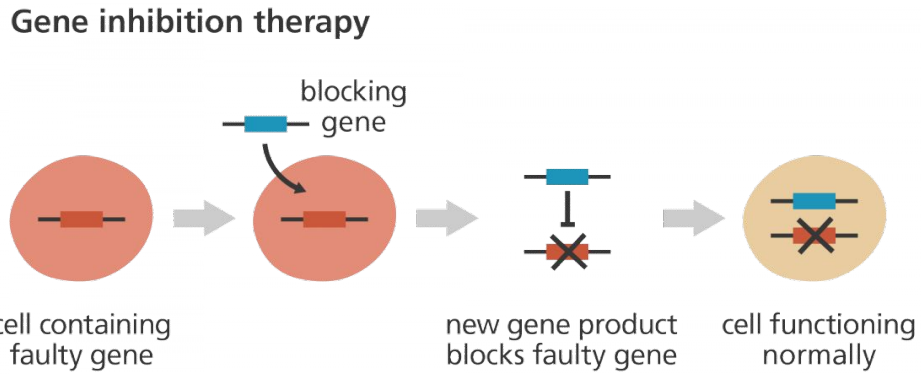

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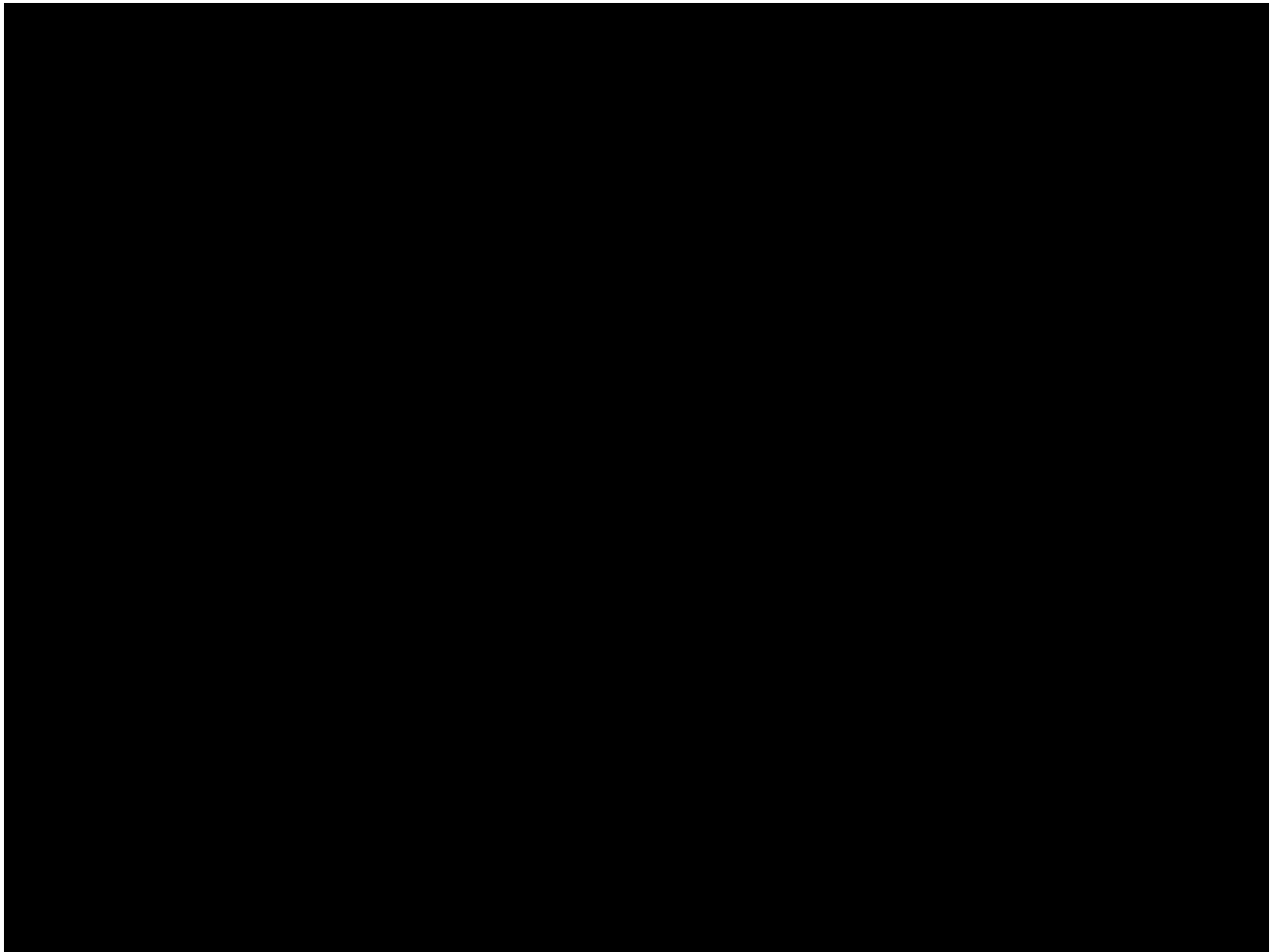

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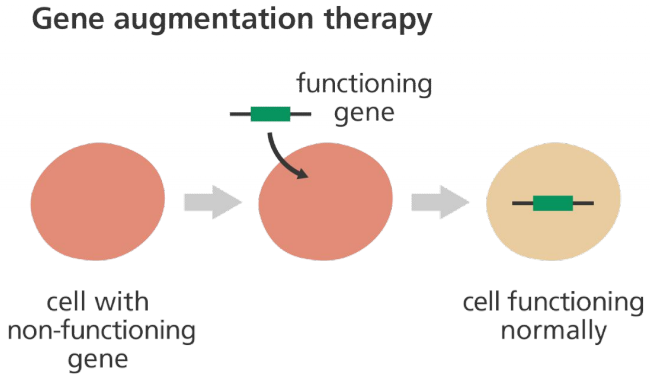

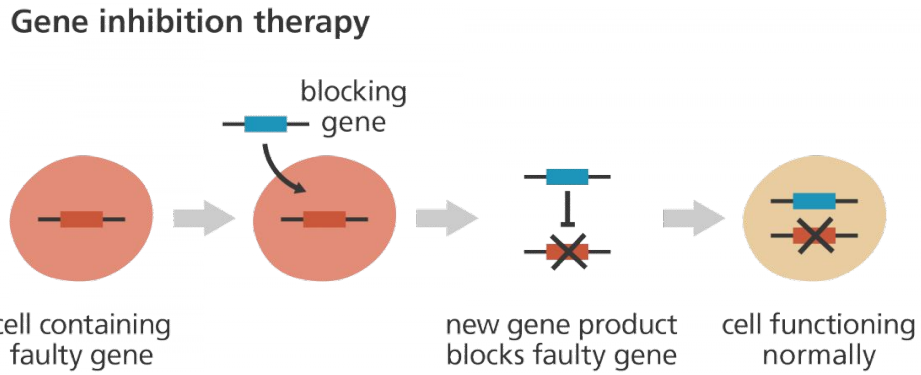

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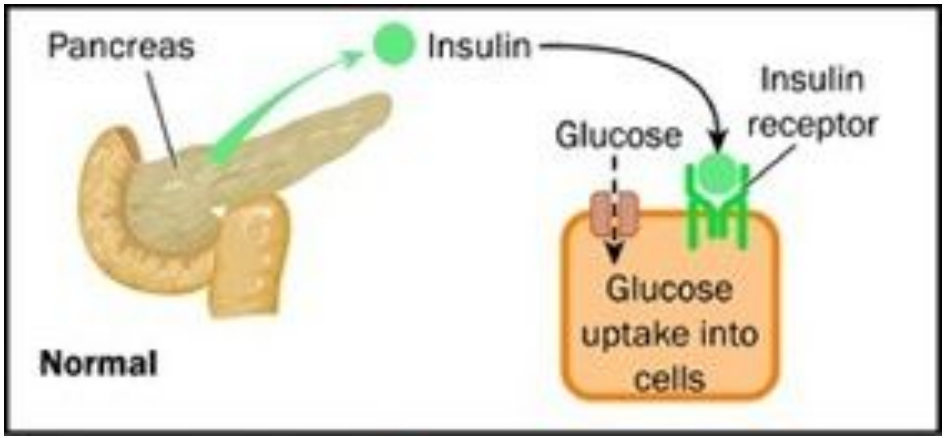

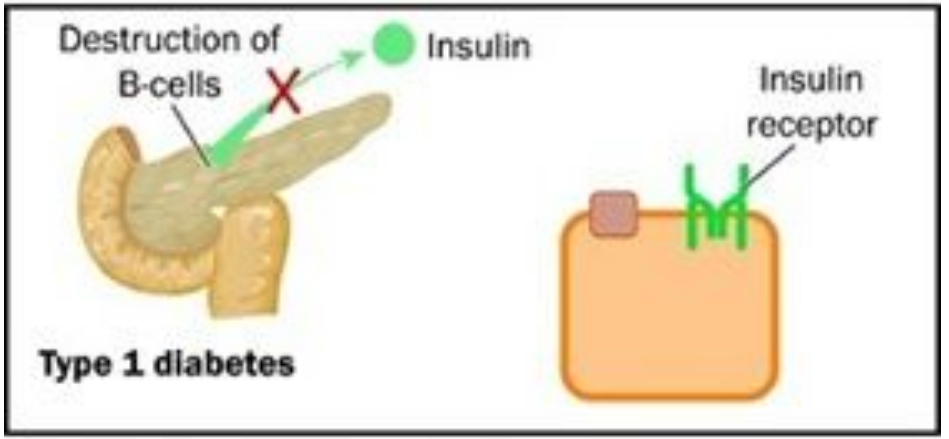

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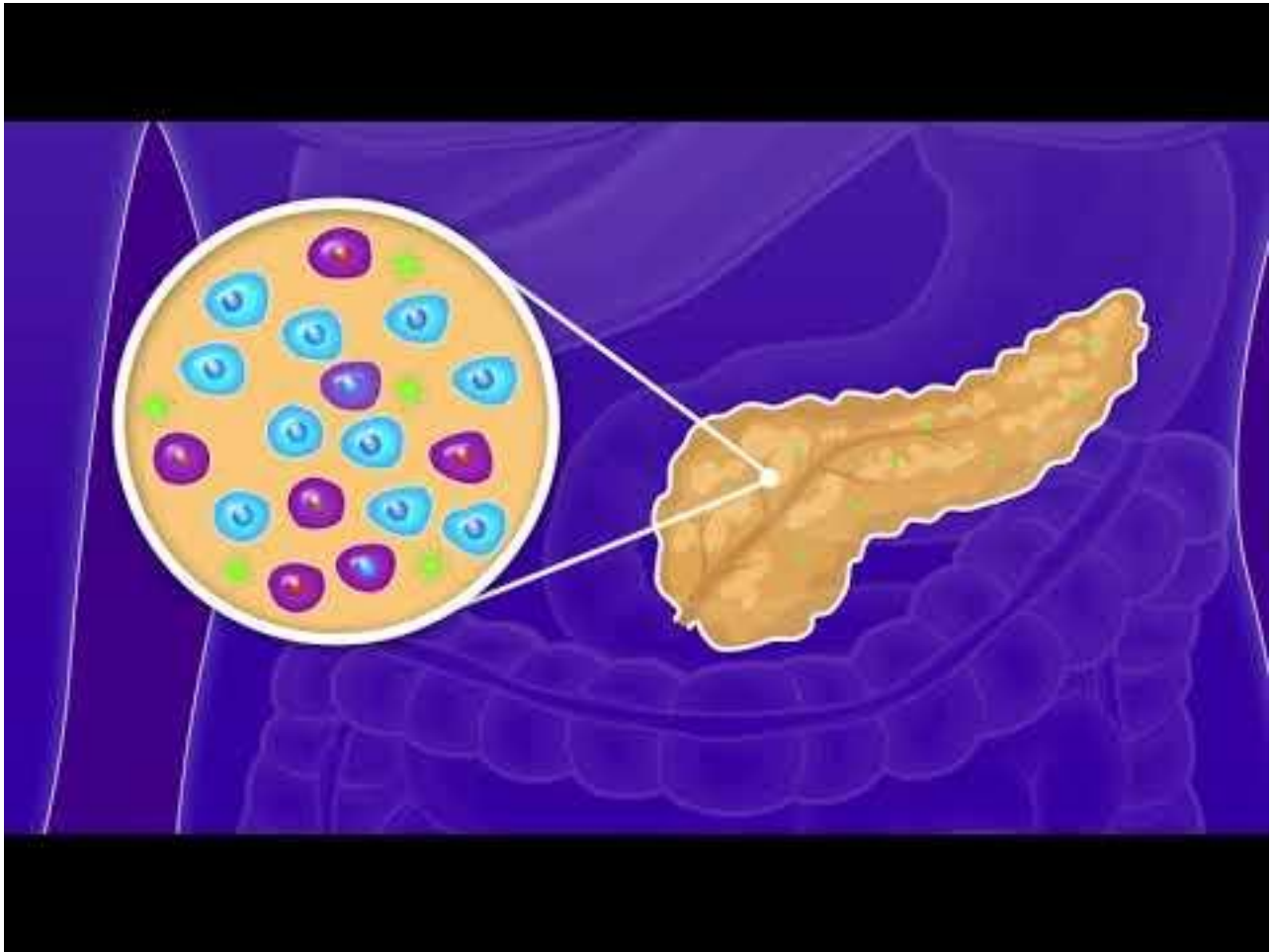

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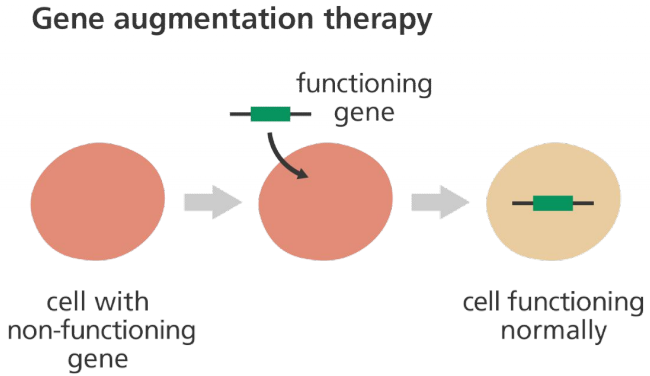

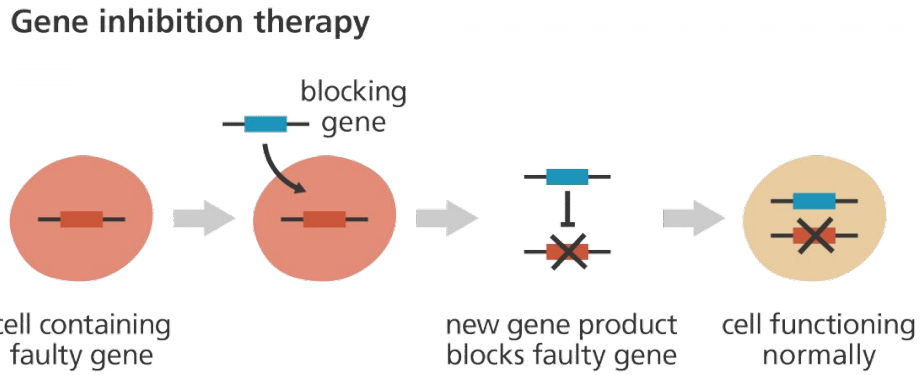

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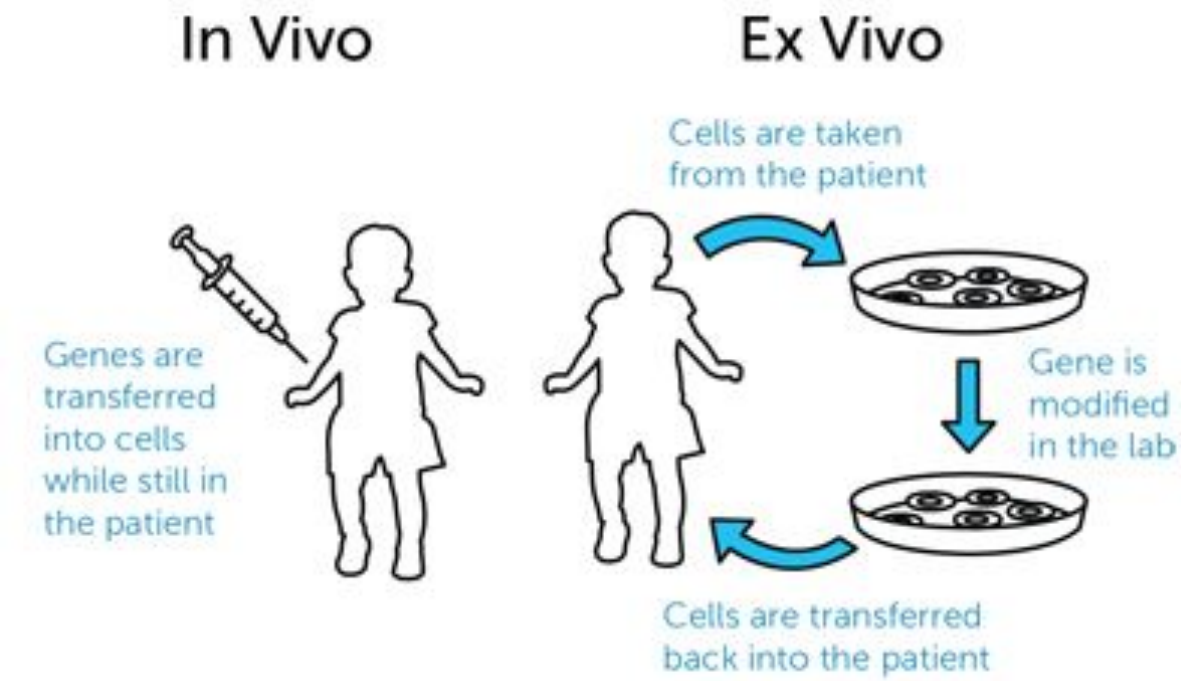

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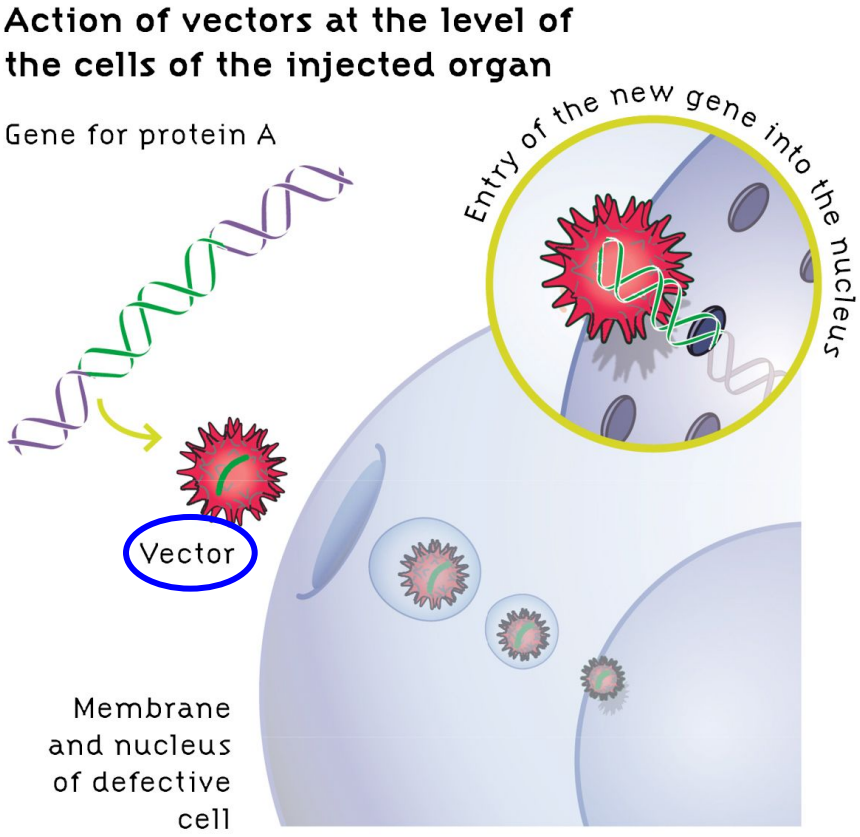

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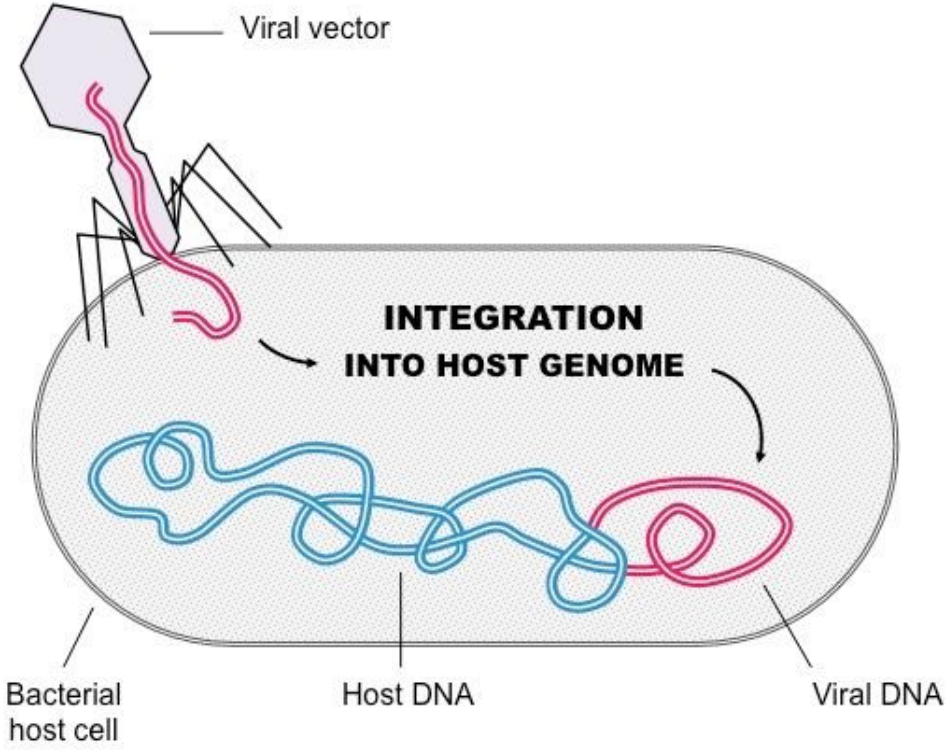
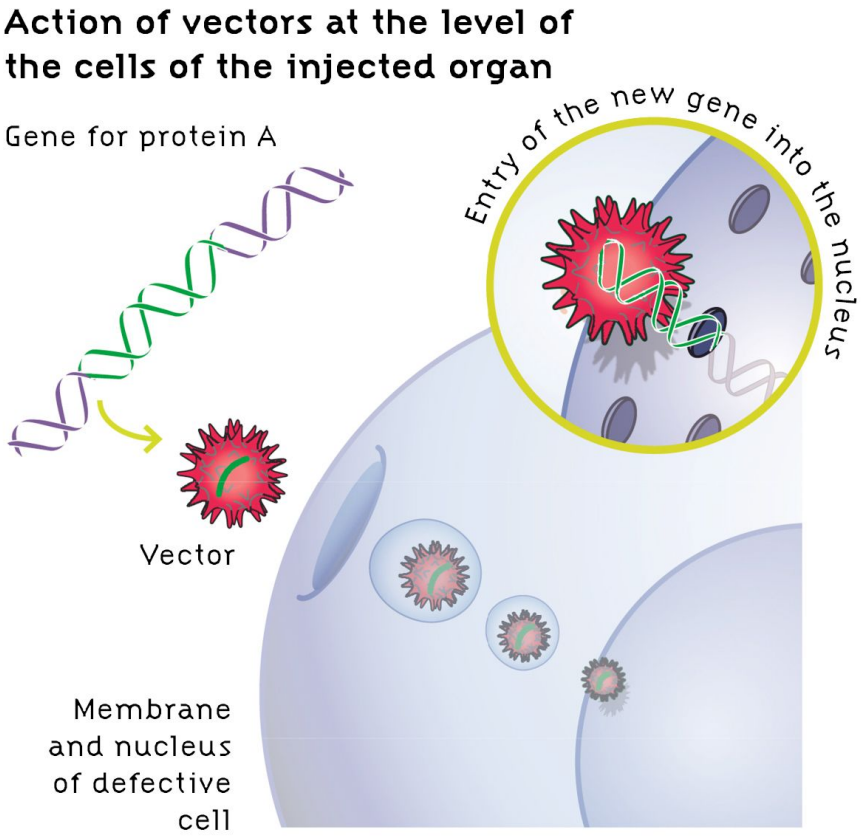


What vector should be used to deliver the gene?

1) Does it enter the right cells?
2) Does it integrate the new gene(s) into the patient's genome?
3) Does it switch the new gene(s) "on"?
4) Does it avoid harmful side effects?



MODEL: Gene Therapy* **

non-functioning gene **functioning gene** **blocking gene** **vector** ***ex vivo***

in vivo **pipette** **petri dish** **target cell** **cell membrane** **receptor**

nuclear membrane **nucleus** **patient's genome** **protein** **mitosis**

***Model gene therapy for one specific disease of your choice.**

****Use labels, arrows, and numbered steps!**