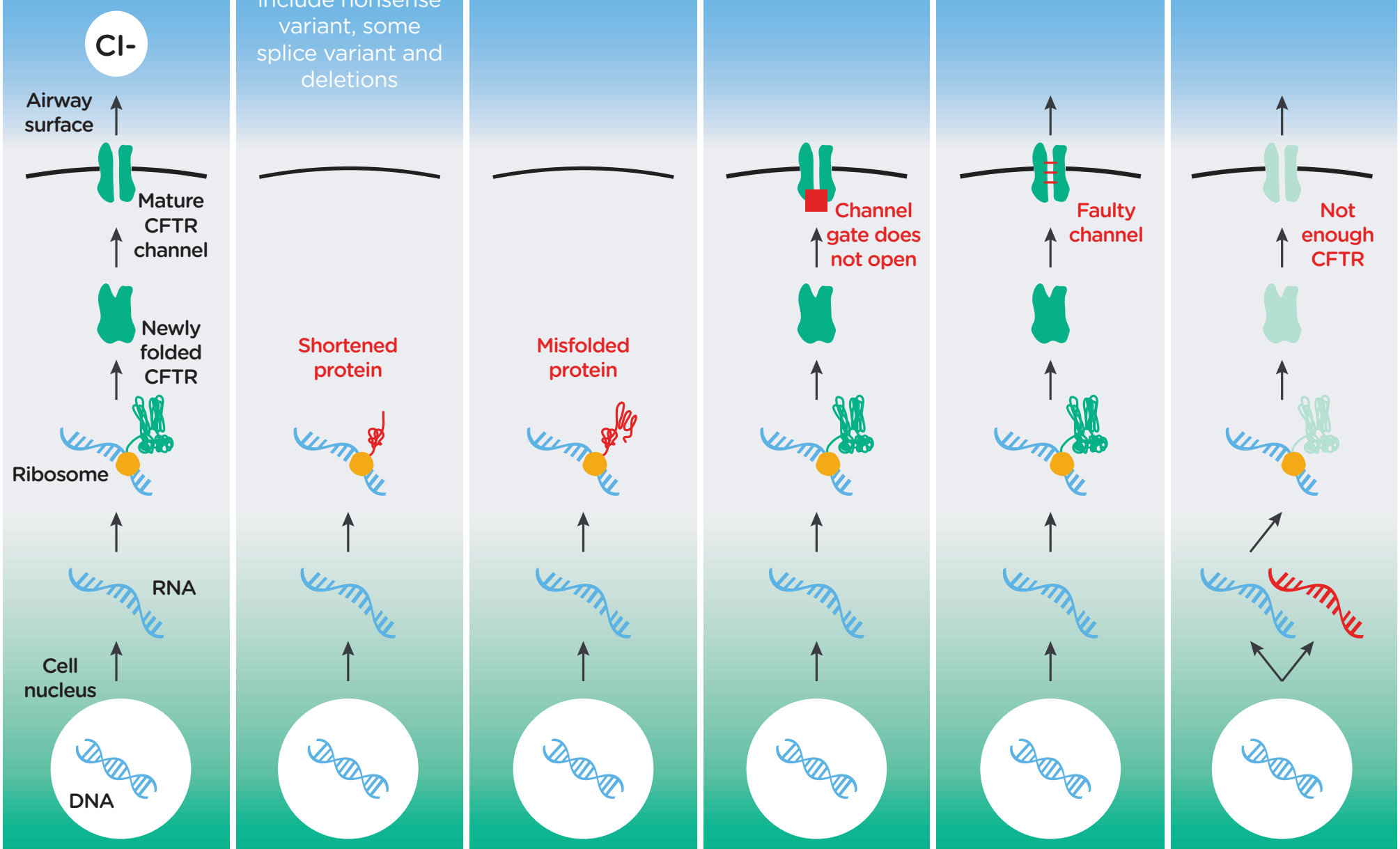
CFTR VARIANT CLASSES

	Normal	Class I	Class II	Class III	Class IV	Class V
VARIANT EXAMPLES	CFTR protein is created, moves to the cell surface and allows transfer of chloride and water.	No functional CFTR is created.	CFTR protein is created, but misfolds, keeping it from moving to the cell surface.	CFTR protein is created and moves to the cell surface, but the channel gate does not open properly.	CFTR protein is created and moves to the cell surface, but the function of the channel is faulty.	Normal CFTR protein is created and moves to the cell surface, but in insufficient quantities.
% of people with CFwho have at least one variant in that class	No variant	22%	88%	6%	6%	5%
		G542X W1282X R553X	F508del N1303K I507del	G551D S549N	D1152H R347P R117H	3849+10kbC→T 2789+5G→A A455E
		aka "production variant," which include nonsense variant, some splice variant and deletions	aka "processing variant"	aka "gating variant"	aka "conduction variant"	includes some splice variant

WHAT'S HAPPENING IN THE CELL



POTENTIAL THERAPIES

		Read-through compounds may allow production of full-length CFTR for nonsense variant	Correctors such as elexacaftor, lumacaftor or tezacaftor help defective CFTR fold correctly	Potentiators such as ivacaftor help open the CFTR channel, and also help increase the function of normal CFTR	
PBS REIMBURSED MODULATOR THERAPIES			Class II Orkambi (two copies of F508del), Symdeko (two copies of F508del or one gene that responds to Symdeko) Class II Trikafta (one copy of F508del or at least one other variant that responds to Trikafta)	Class III Kalydeco	

References - Cystic Fibrosis Foundation (2017) Know Your CFTR Mutation. Retrieved 3 July 2023 from https://www.cff.org/sites/default/files/2021-12/Know-Your-CFTR-Mutations-Infographic.pdf

CYSTIC FIBROSIS Queensland