

Real Benefits of New Therapies for Children with Haemophilia

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Disclosures

Conflict	Disclosure
Meeting Support	CSL Behring, Pfizer, Shire
Research Support	CSL Behring, Biogen
Grants	Pfizer
Advisory Committee	Shire, Biogen, Roche, Novonordisk, CSL Behring
Consultant	CSL Behring





Despite having very good treatments for Haemophilia for the past 20 years, there remain some challenges in its management



The factor has to be given into the vein





Finding a vein in a
small child can be
challenging at
times





Sometimes the process
of accessing a vein
can cause a bleed



Sometimes kids need a port



Or a CVL



Worse still some patients develop inhibitors



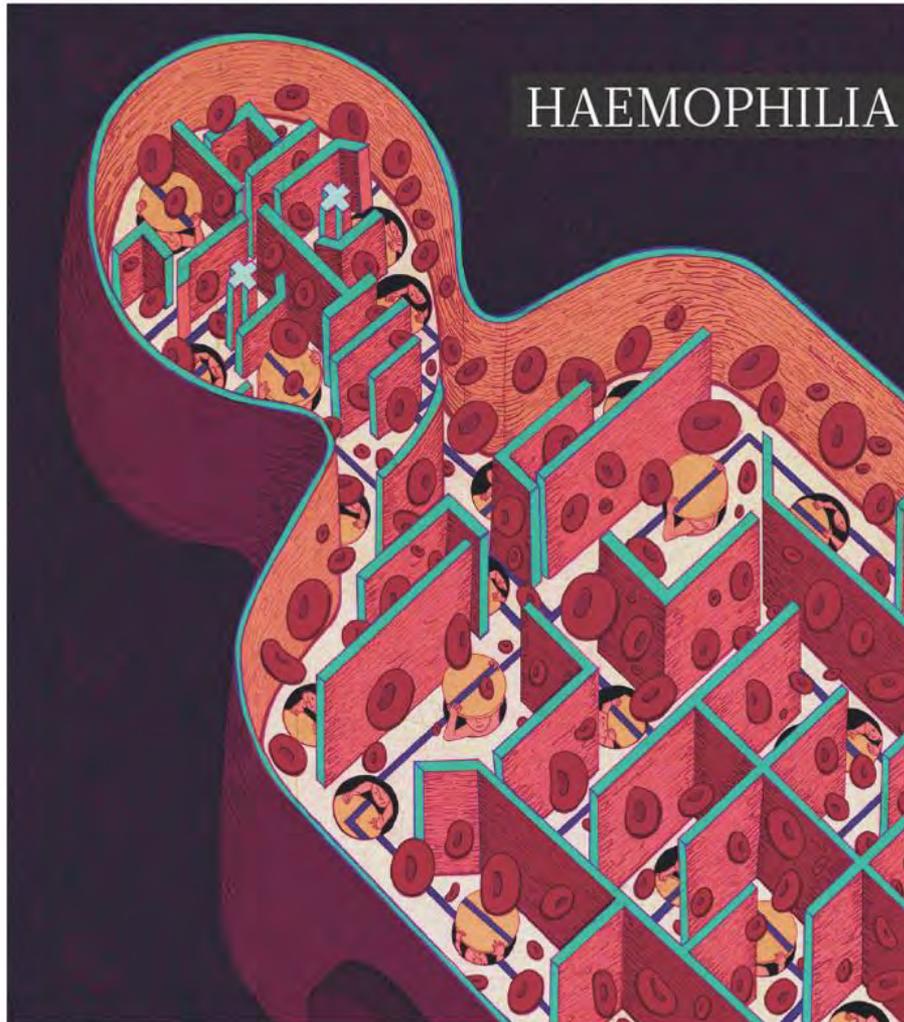
If only we could wave our wand



We might find a cure



natureOUTLOOK



Produced with support from:

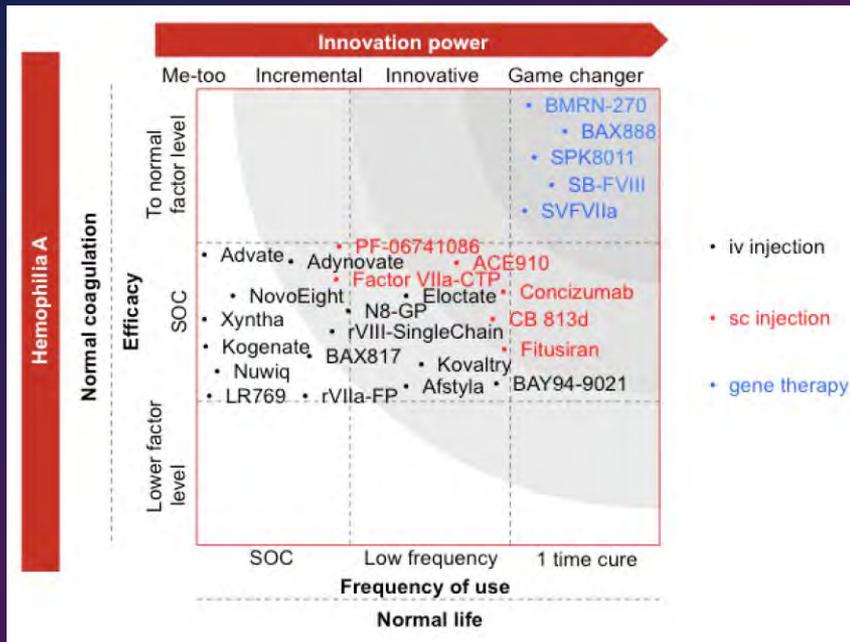
Baxter

A flow of ideas to
stop the bleeding

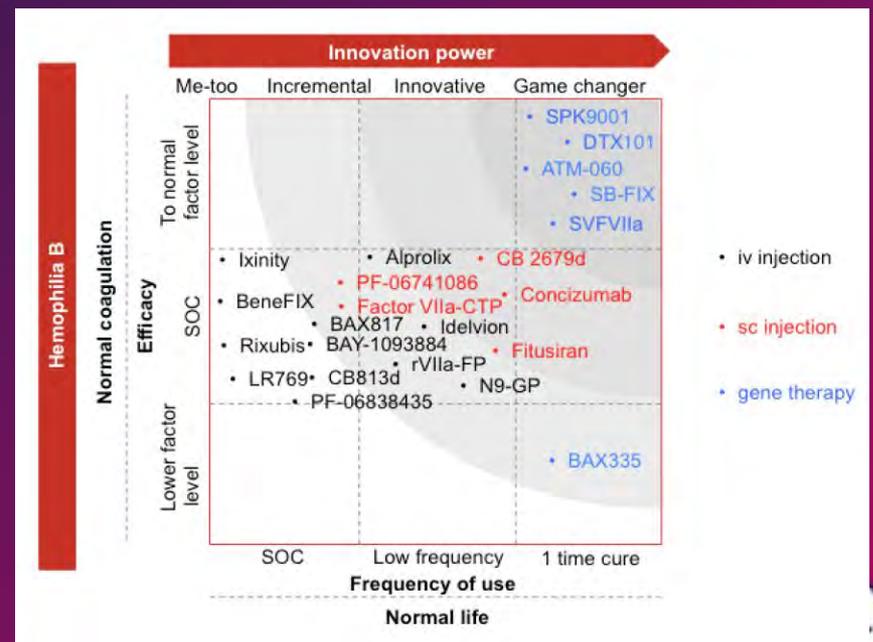


In the Pipeline

Haemophilia A



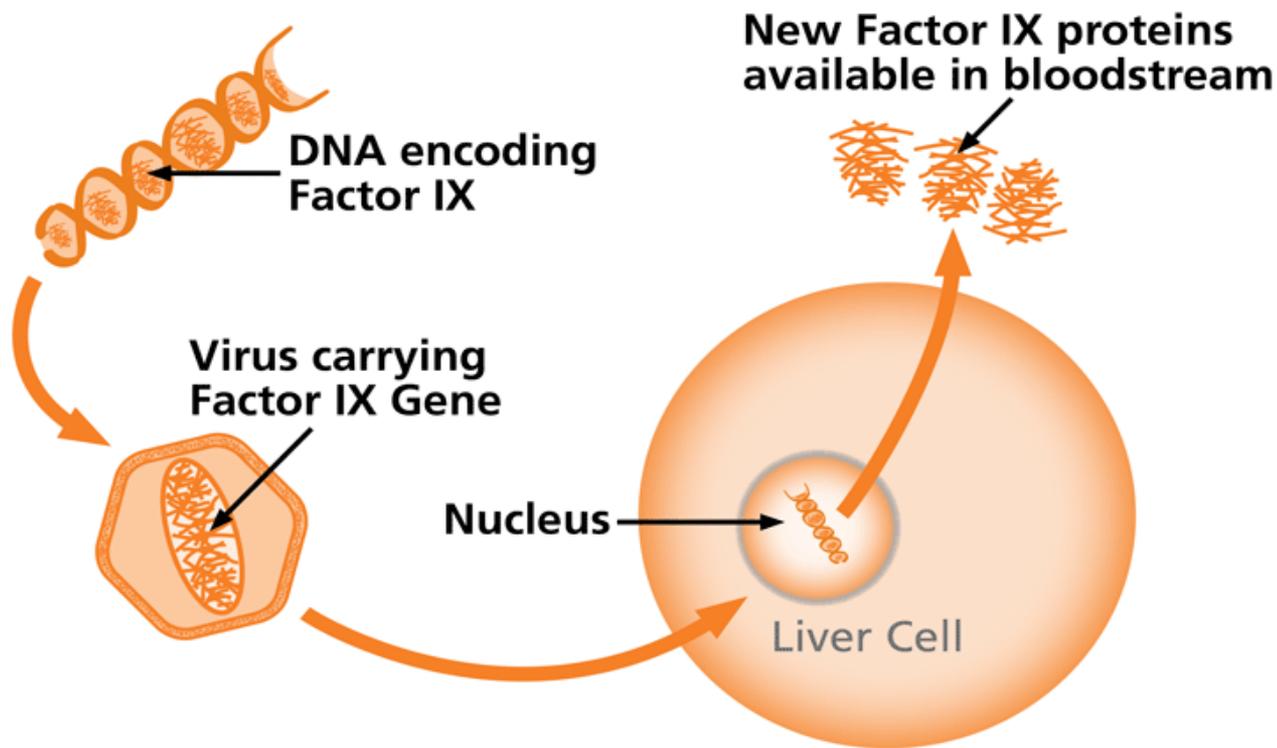
Haemophilia B



<https://www.linkedin.com/pulse/disrupting-hemophilia-rd-pipelines-how-new-entrants-can-li-li>



Real progress is being made in gene therapy
so realistically this is likely to be the treatment
in the future



Nature Outlook: Haemophilia. The Search for Genetic Treatments for Haemophilia Is Proving Difficult. Dec 16, 2014.
Image adapted from: Duke University: Pharmacology 150. How Gene Therapy Works.





So while we look to the future for Gene Therapy, other therapies are much closer to a practical reality



Innovations to the molecule



Well 18, Canning Stock Route, WA



Adding something to your molecule



Bremer Bay, WA



Maintains efficacy



Balladonia – Zanthus track, WA



And allows flexibility



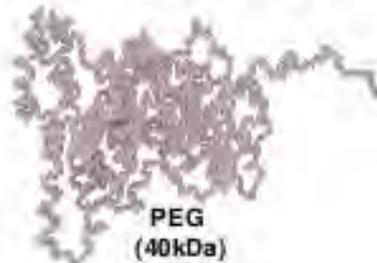
Fitzgerald River NP, WA



Extension of half-life

PEGylation

Chemical coupling of polyethylene glycol (PEG), increased hydrodynamic volume to prevent clearance by kidney

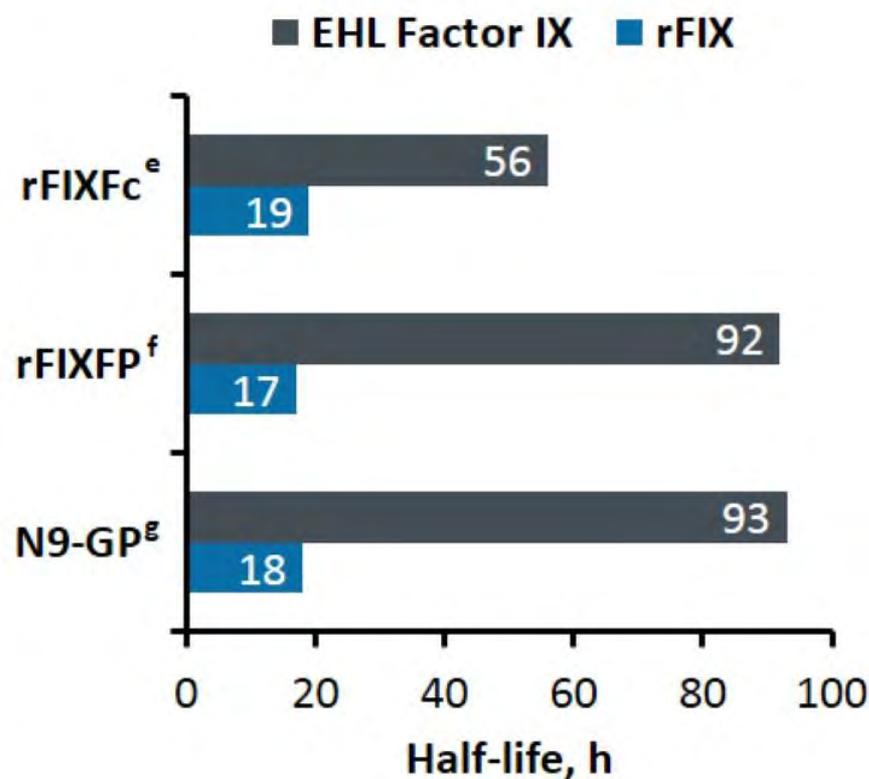
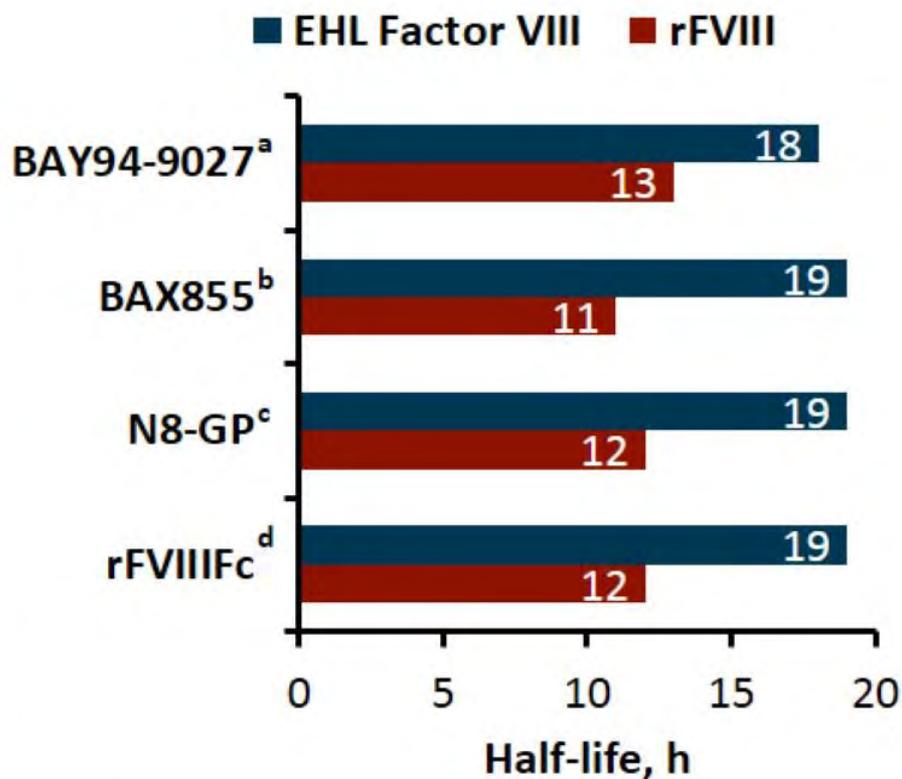


Fc fusion

Fc fragment and albumin have the same unique mode to recycling through the FcRn ligands at the endothelial cell surface to increase the half-life



Half-life of Extended Half-life Factor vs Recombinant Factor



EHL = extended half-life

a. Coyle TE, et al. *J Thromb Haemost.* 2014;12:488-496^[28]; b. Turecek PL, et al. *Hamostaseologie.* 2012;32:S29-S38^[29]; c. Tiede A, et al. *J Thromb Haemost.* 2013;11:670-678^[26]; d. Mahlangu J, et al. *Blood.* 2014;123:317-325^[18]; e. Powell JS, et al. *N Engl J Med.* 2013;369:2313-2323^[17]; f. Santagostino E, et al. *Blood.* 2012;120:2405-2411^[27]; g. Collins PW, et al. *Blood.* 2014;124:3880-3886.^[20]

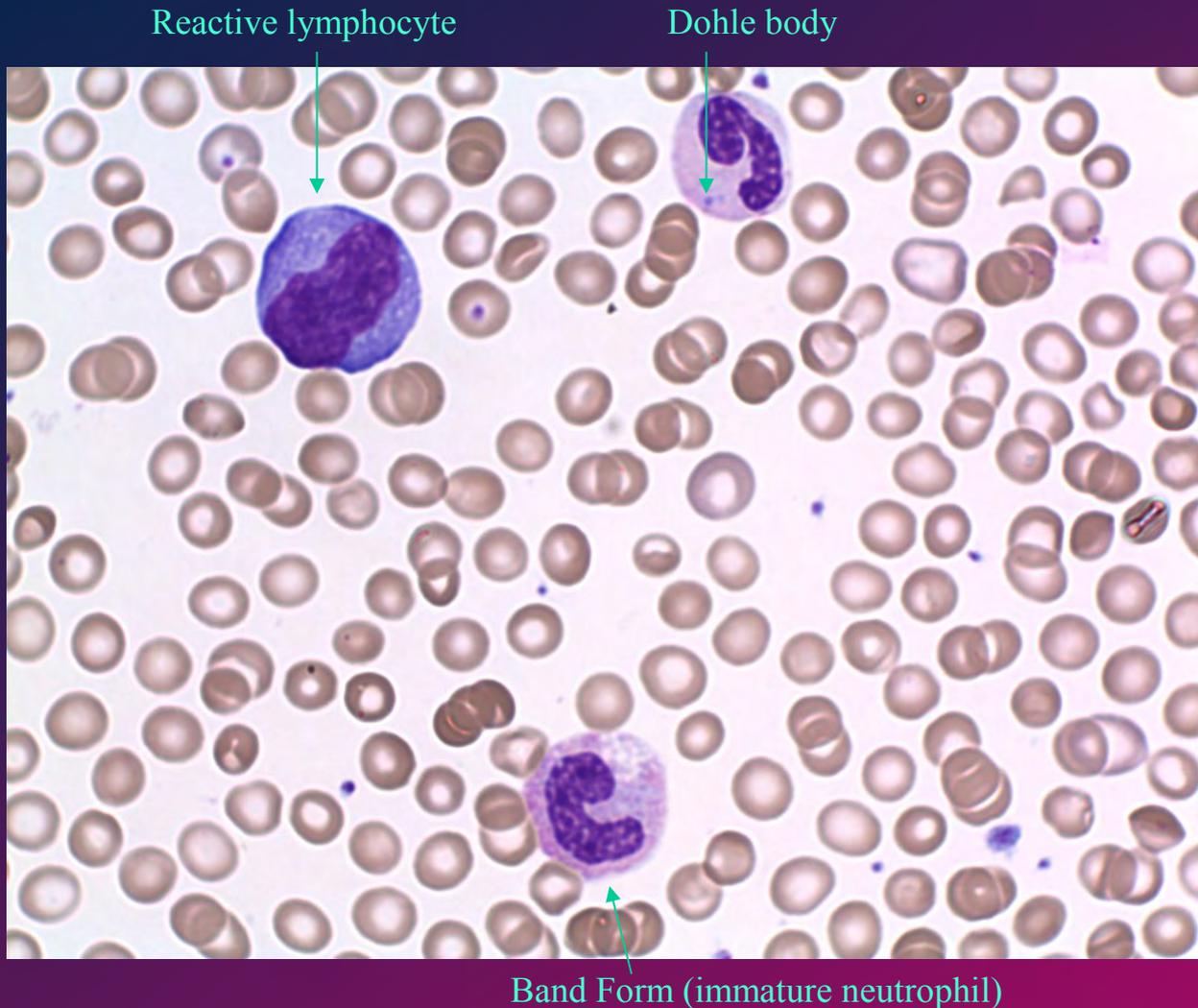
Less Frequent Infusions



Less times the port needs to be accessed



Less line-related infections



Toxic blood film in a patient with haemophilia and Staph Aures sepsis from infection of his CVL





Less Ports and
more upfront
venepuncture



More happy families
– 50 less injections a year





Potential for
improved
compliance in
adolescents



Improved Trough levels in the very active patient



Improved QOL, less days off school, work etc

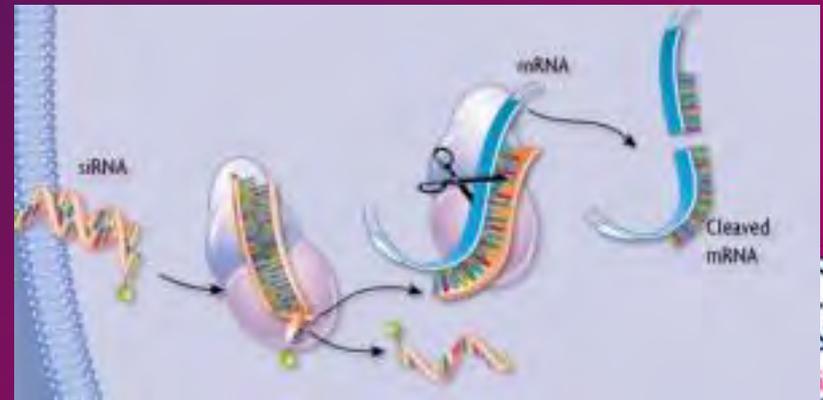
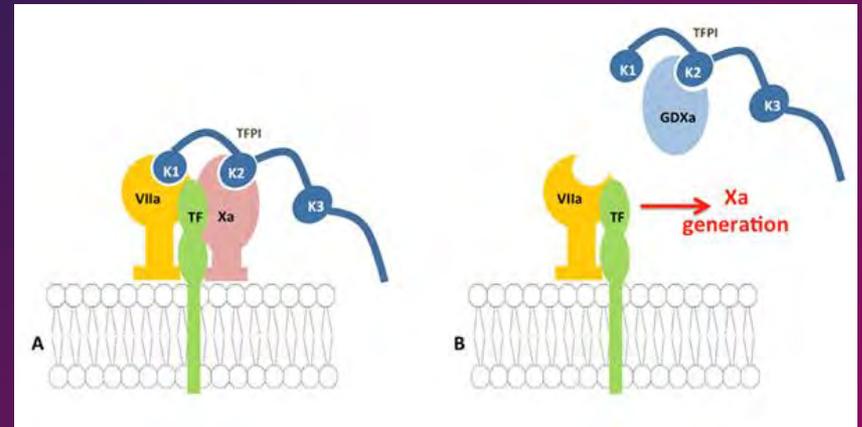
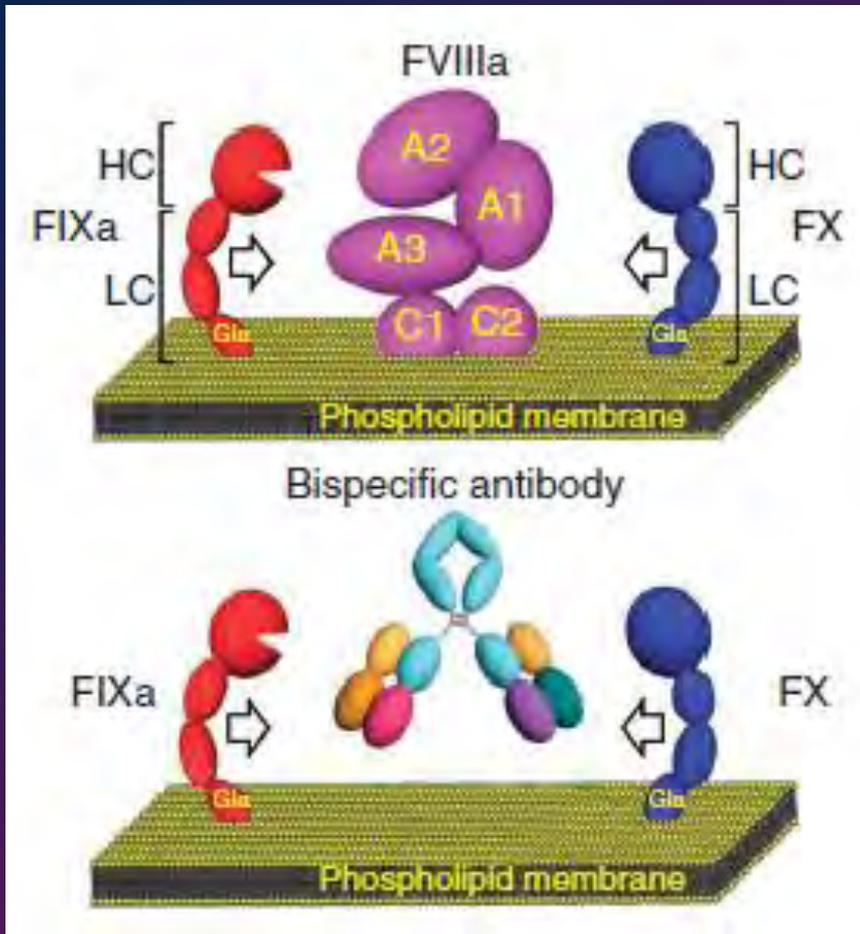


Patient video

- <https://vimeo.com/220567292/bebf0fb03b>



New Novel agents



Possibility of Subcutaneous Injections



Provide Haemostasis even in the presence of an inhibitor



Conclusion

From our experience of using EHL products in the clinical trial setting in our HTC we have seen real benefits for the children and their families.

We look forward to them being more widely available for all our patients.



Thank you

- To my patients and families who took a chance and agreed to participate in a clinical trials and all those who allowed me to share their experiences
- Robyn Shoemark our Haemophilia Clinical Nurse Consultant who does an amazing job with our patients and families
- Twinkle Bahaduri and Violet Ford, members of our Research Team – without whom it wouldn't be possible for us to participate in these studies
- CSL for providing me with the video of our patient

