

Grand Rounds

Rigshospitalet



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rigshospitalet.dk/grandrounds



CYSTISK FIBROSE

- markant gennembrud i behandlingstilbuddet

Afdeling for Infektionssygdomme, Hjertecentret

Afdeling for Børn og Unge, Juliane Marie Centret

CF Center København

- Terese Katzenstein
Overlæge, Afdeling for Infektionssygdomme
- Marianne Skov
Overlæge, Afdeling for Børn og Unge
- Tavs Qvist
Afdelingslæge, Afdeling for Infektionssygdomme
- Daniel Faurholt-Jepsen
Overlæge, Afdeling for Infektionssygdomme

Woe to the child with the salty kiss,
for he will soon die

It Happened Here: Dr. Dorothy H. Andersen

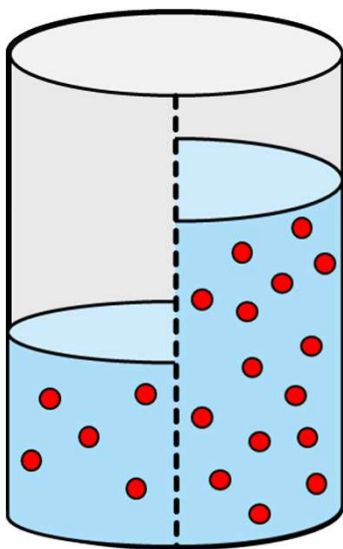
Despite limited opportunity and gender discrimination, in the early 20th century this researcher identified a disease — cystic fibrosis.



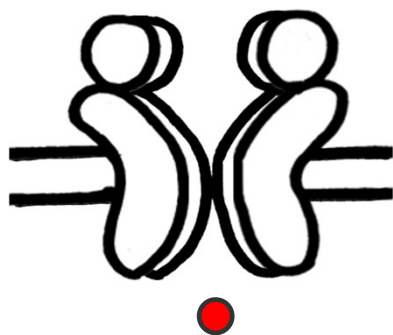
Dr. Andersen wrote her first paper on her discovery in 1938, called “Cystic Fibrosis of the Pancreas and its Relation to Celiac Disease,” which was published in the American Journal of Diseases of Children. Over the next 20 years she conducted additional research into why the pancreas in these cadavers was abnormal. She and her team of researchers then moved from studying the organs of cadavers to studying and diagnosing CF in living people.

Kilde: Health Matters (healthmatters.nyp.org/it-happened-here-dr-dorothy-h-andersen)

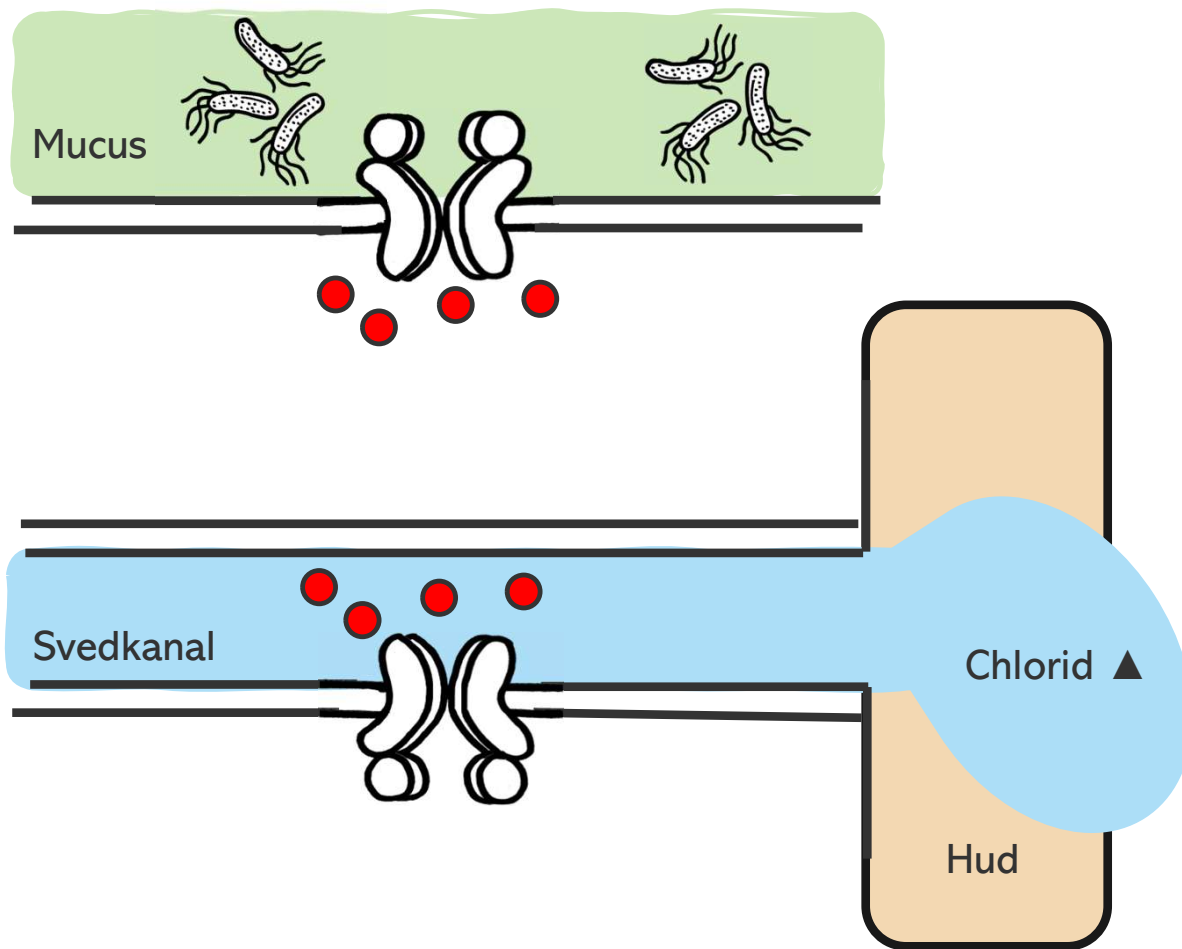
Osmose



CFTR*

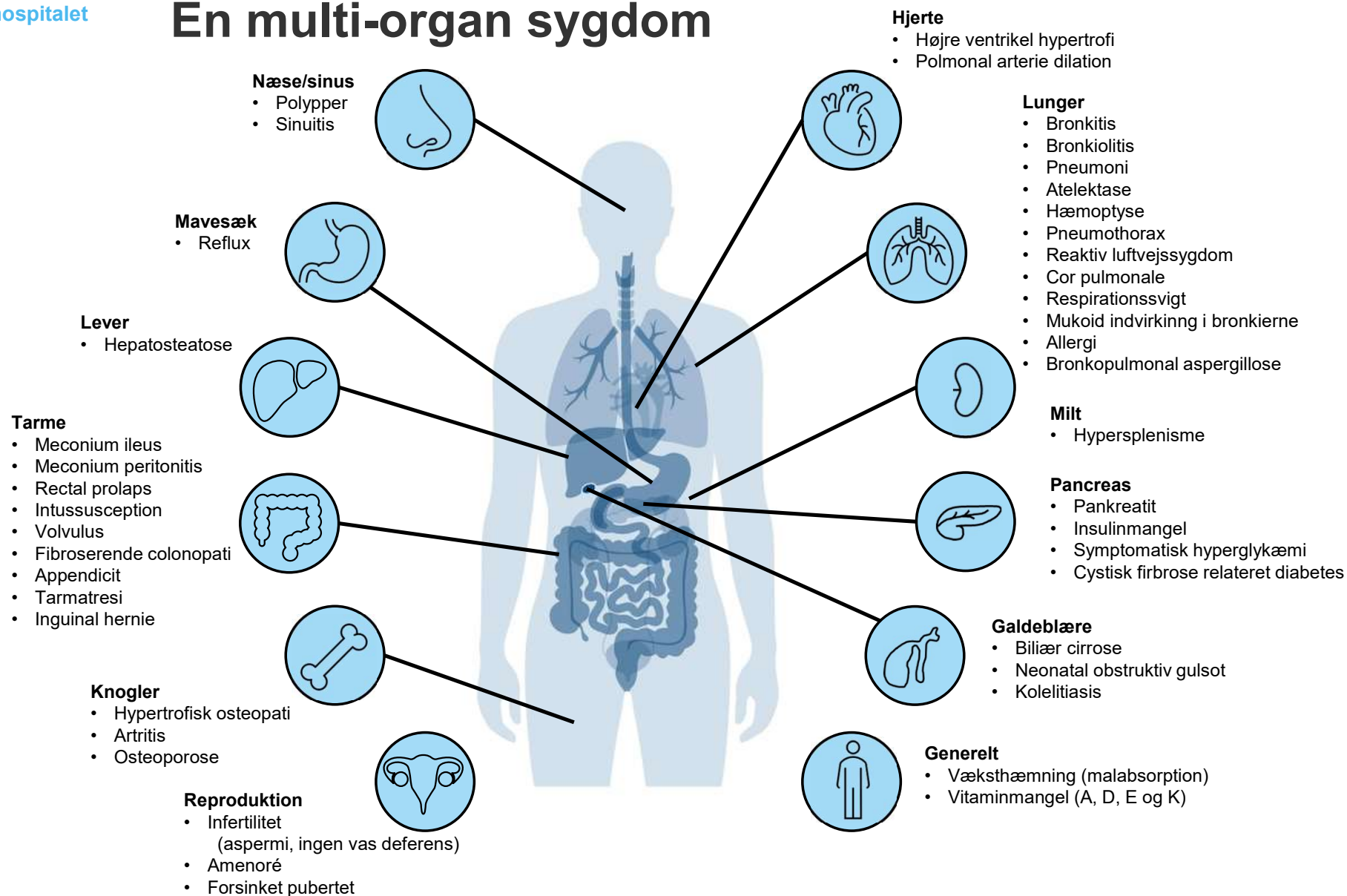


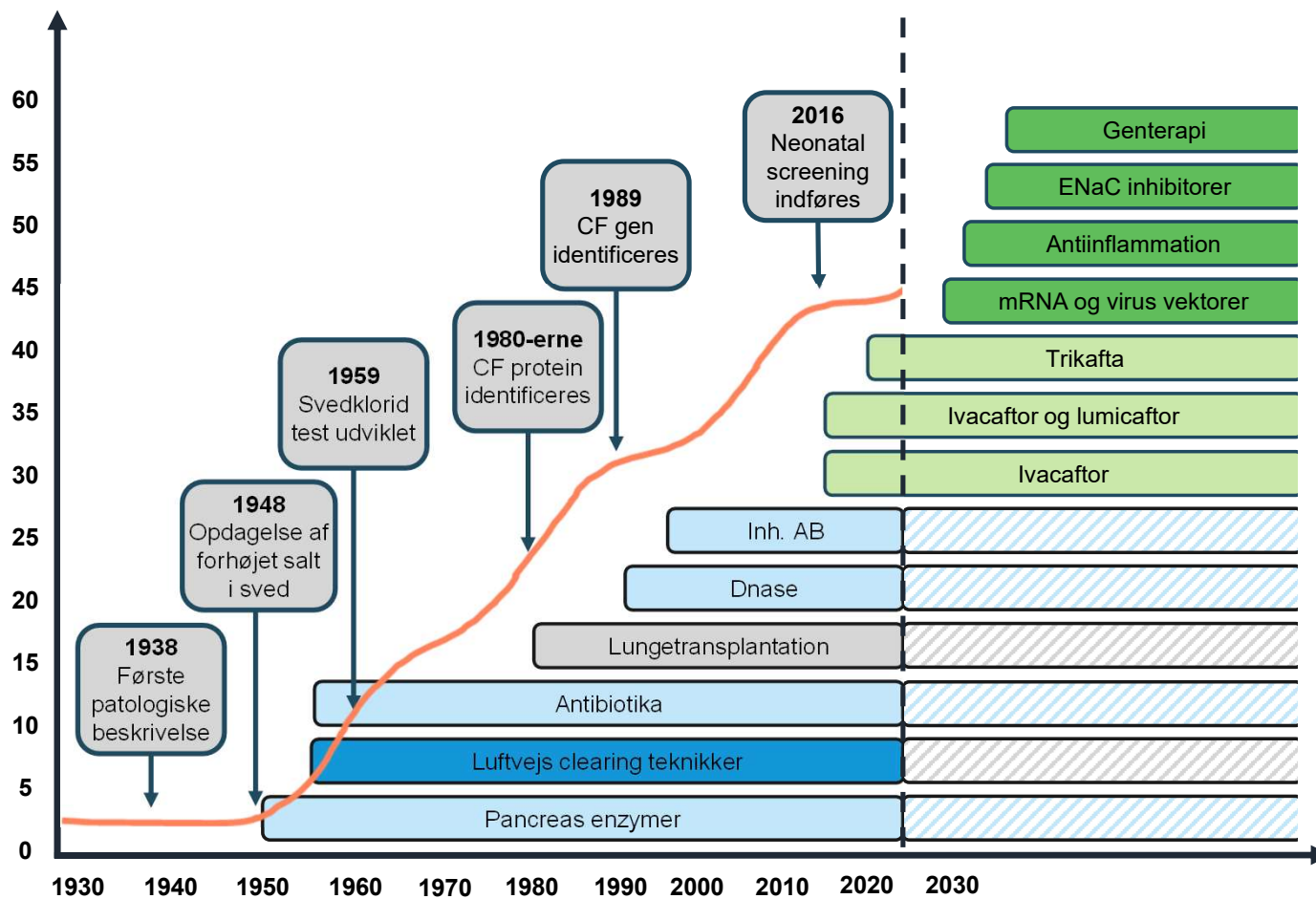
Cystisk fibrose-konsekvenser



*Cystic Fibrosis Transmembrane Conductance Regulator

En multi-organ sygdom





Stor behandlingsbyrde - 2-3 timer/dag



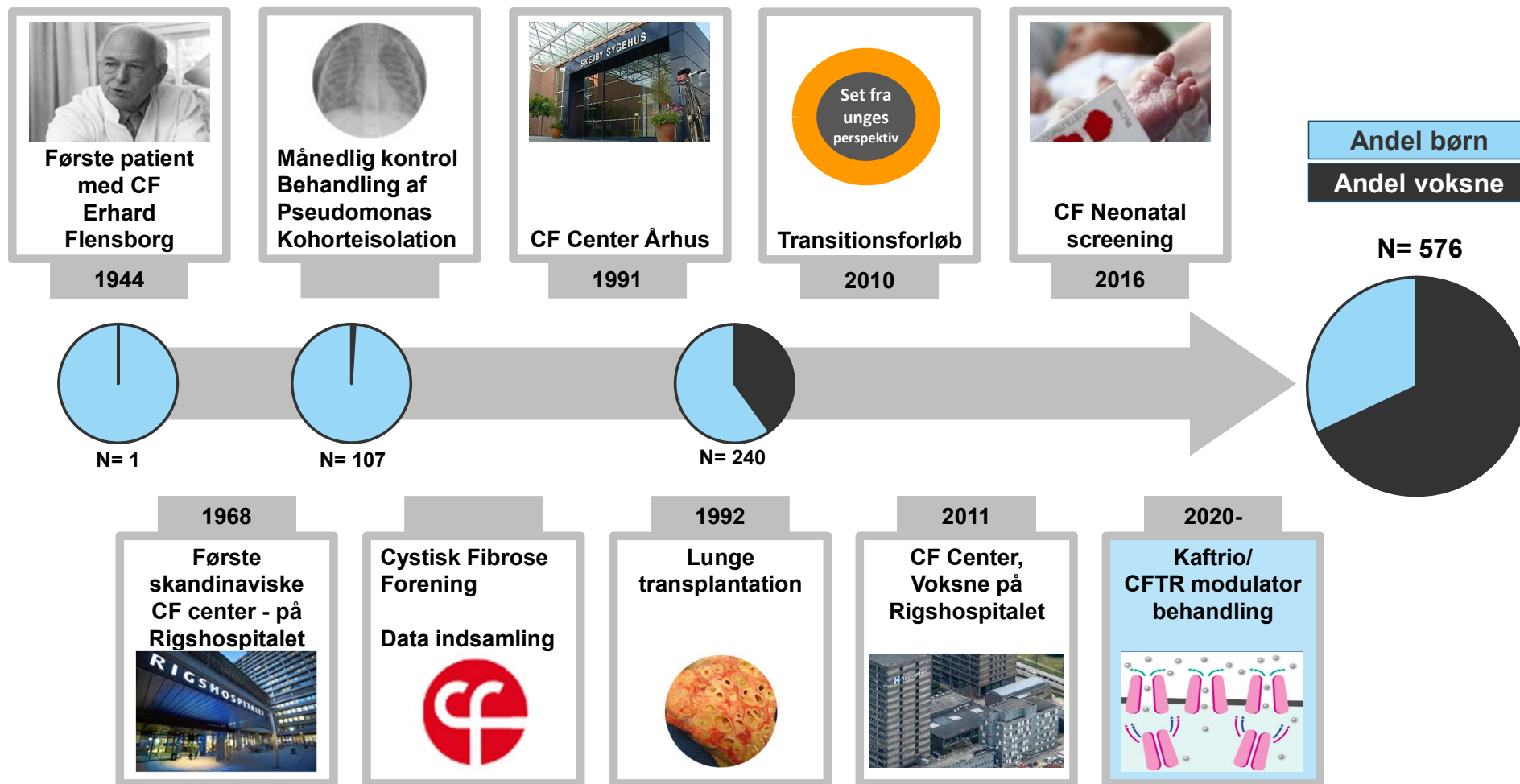
Jenny Livingston



Interview: Malin Heiden. Video: Louise A. Poulsen.

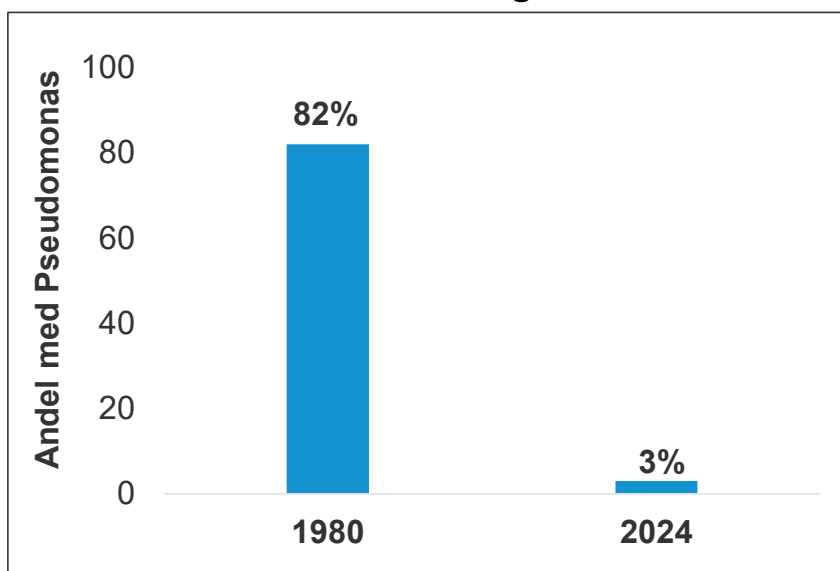
Birgitte Mortensen, 57 år
Lever med CF

Tidslinje for cystisk fibrose på Rigshospitalet

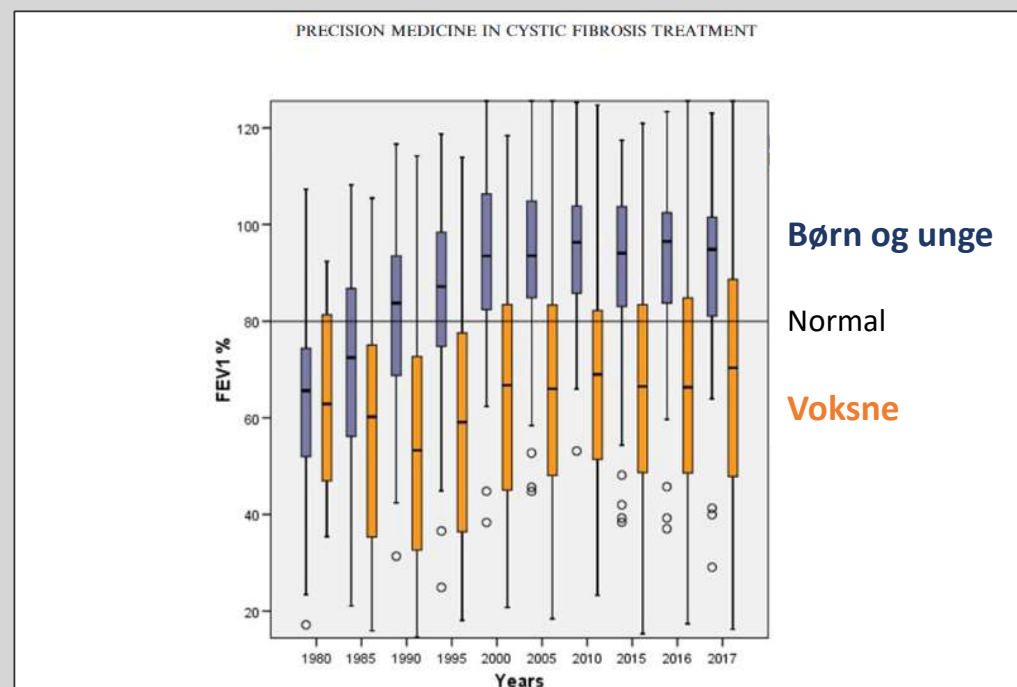


Monitorering og tidlig intervention... ...medførende bedring i lungefunktion

Kronisk Pseudomonas lungeinfektion <18 år CF Center RH og AUH



Lungefunktion (FEV1) siden 1980

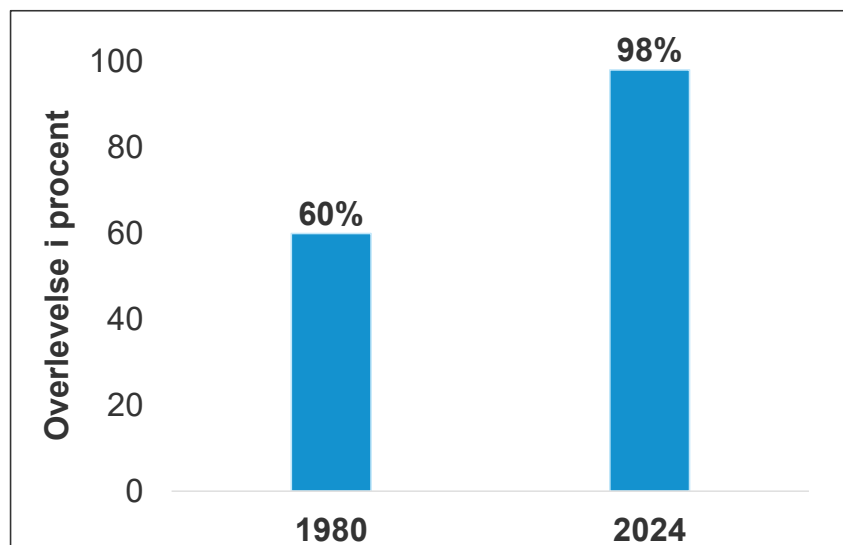


1. Frederiksen B, Ph.D. thesis 1997
2. Skov M, Olesen HV, Pressler T. CF database

1. Skov M, Pressler T. APMIS. 2019 May;127(5):352-360.
2. Qvist et al. APMIS 2024 Jan

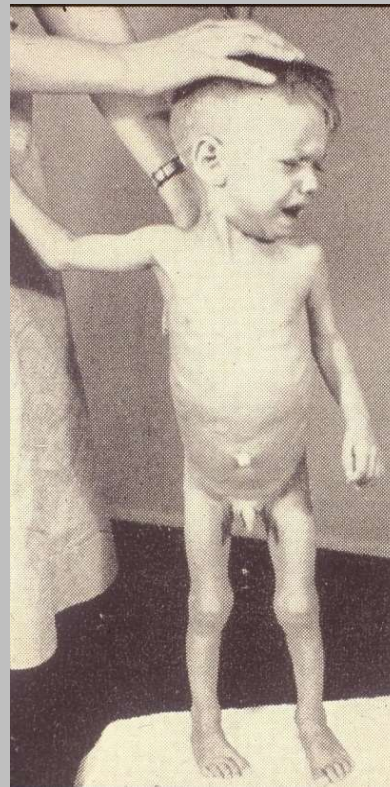
Markant bedre overlevelse...

Flere når voksenalderen



...med ændret klinisk præsentation

CF for 50 år siden



CF år 2024



1. Skov M, Hansen CR, Pressler T. APMIS. 2019 May;127(5):352-360
2. Skov M, Olesen HV, Pressler T. CF database



Center for Cystisk Fibrose Rigshospitalet

CF Børn & Unge

**Juliane Marie
Centret**

Afdeling for Børn
og Unge

CF Voksne

Hjertecentret

Afdeling for
Infektionssygdomme

Lungetransplan-
tationsafsnittet

Samarbejdspartnere

Afdeling for

Klinisk mikrobiologi

Øre-Næse-Halskirurgi og
Audiologi

Røntgen og skanning

Hormon og
Stofskiftesygdomme

Gynækologi, Fertilitet og
Fødsler

Tarmsvigt og leversygdomme

Nyresygdomme

Ungdomsmedicinsk
videncenter

Genetik

Anden paraklinik



**Cystisk Fibrose
Multidisciplinært
team**



DANISH CYSTIC FIBROSIS COHORT

Forskere

Nationalt og internationalt samarbejde



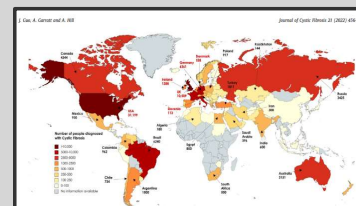
CF Center Århus



**Scandinavian Cystic
Fibrosis Study
Consortium**



**European Cystic
Fibrosis Society
(CTN, ECFS register)**



**Worldwide
collaboration**

En ny model til lægemiddeludvikling



Rigshospitalet

Genetic Therapy [Learn more](#)

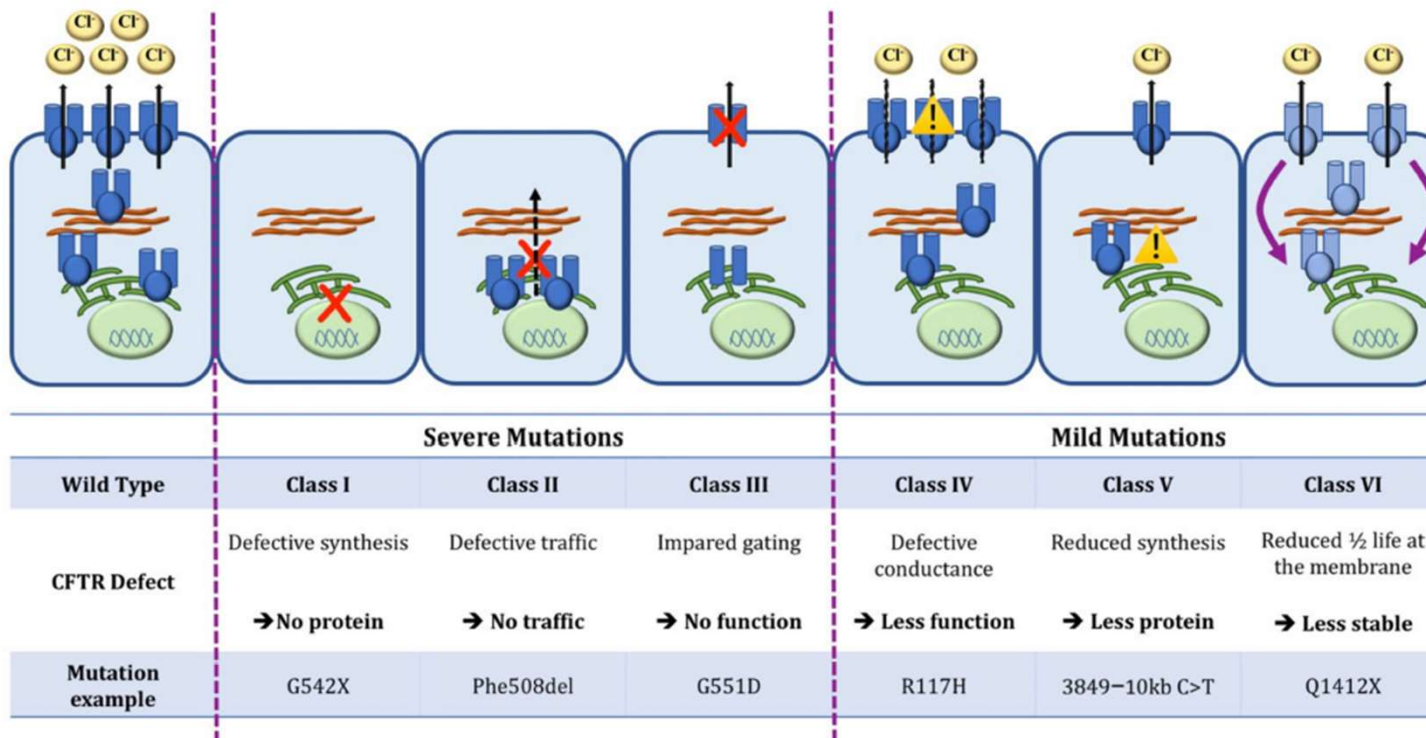
Gene therapy, RNA therapy, gene editing, and antisense oligonucleotides (ASOs)

Pre-clinical	Phase One	Phase Two	Phase Three	To Patients
Eluforsen (QR-010) >	X			
4D-710 >				
ARCT-032 (LUNAR®-CF) >				
SPL84 >				
VX-522 mRNA >				
MRT5005 >	X			
	Spirova Sciences >			
	Carbon Biosciences >			
	Carmine Therapeutics >			
	Gensaic >			
	Nanite >			
	Pioneering Medicines >			
	Prime Medicine >			
	ReCode Therapeutics >			
	SalioGen Therapeutics >			
	ViaNautis Bio >			

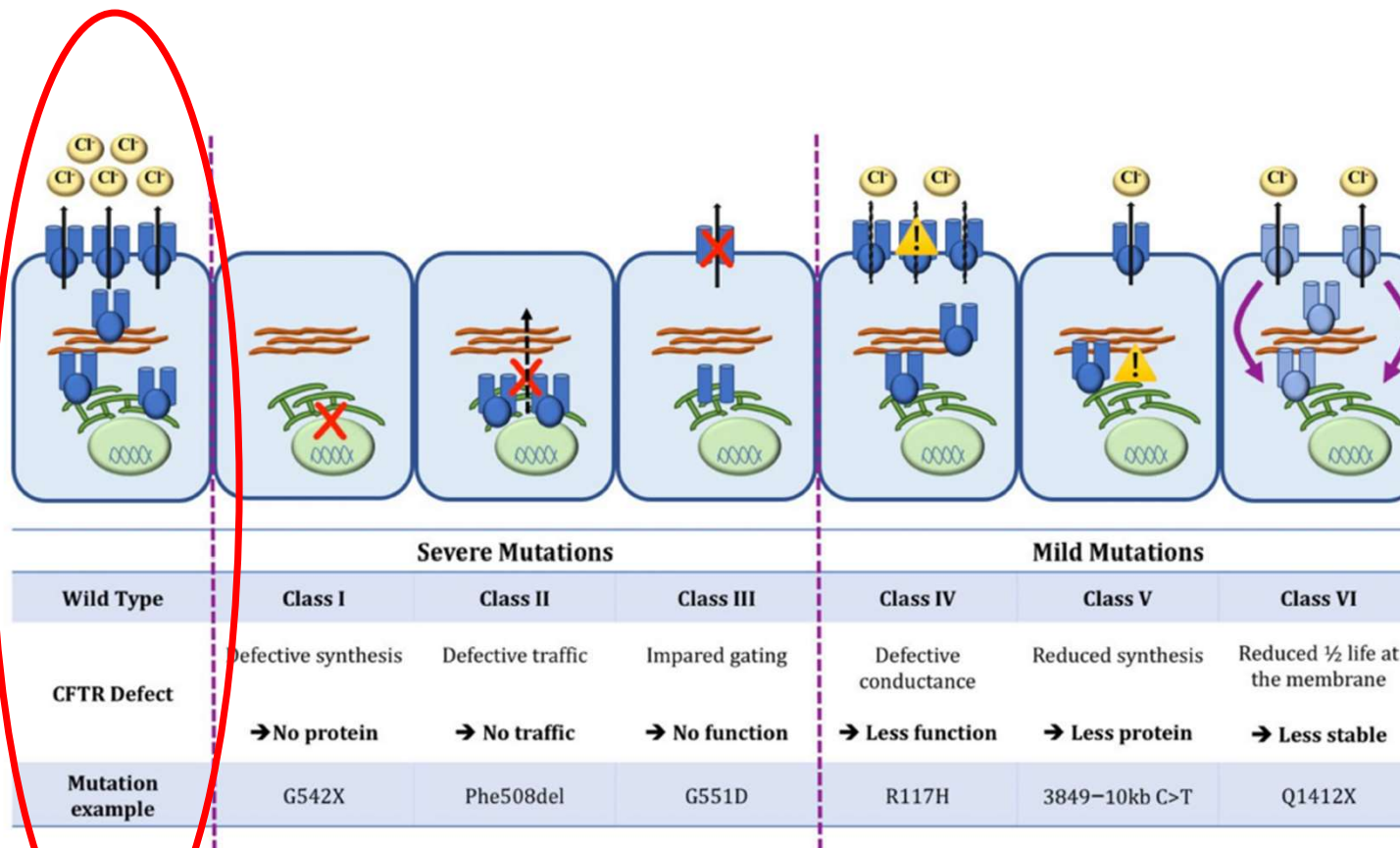
Restore CFTR Protein [Learn more](#)

Modulators and nonsense readthrough therapies

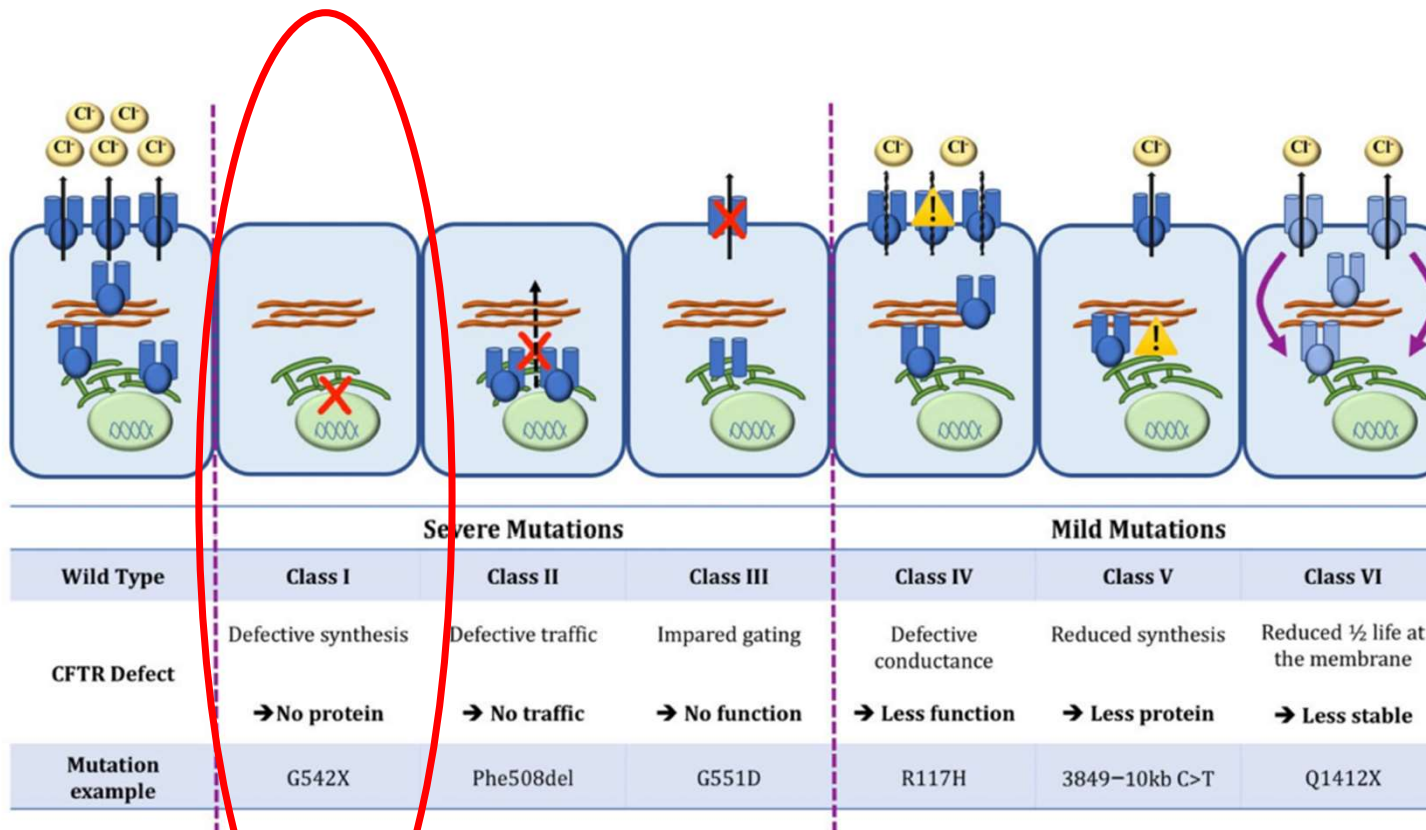
Pre-clinical	Phase One	Phase Two	Phase Three	To Patients
Elexacaftor + tezacaftor + ivacaftor (Trikafta®) >				✓
Ivacaftor (Kalydeco®) >				✓
Lumacaftor + ivacaftor (Orkambi®) >				✓
Tezacaftor + ivacaftor (Symdeko®) >				✓
Vanzacaftor + tezacaftor + deutivacaftor >				
Ataluren >			X	
VX-659 + tezacaftor + ivacaftor >			X	
QBW251 >		X		
ELX-02 >				
ABBV-2222 + ABBV-3067 + ABBV-576 >		X		
Cavosonstat (N91115) >		X		
Deutivacaftor (VX-561) >		X		
FDL169 >		X		
Nesolicaftor (PTI-428) >		X		



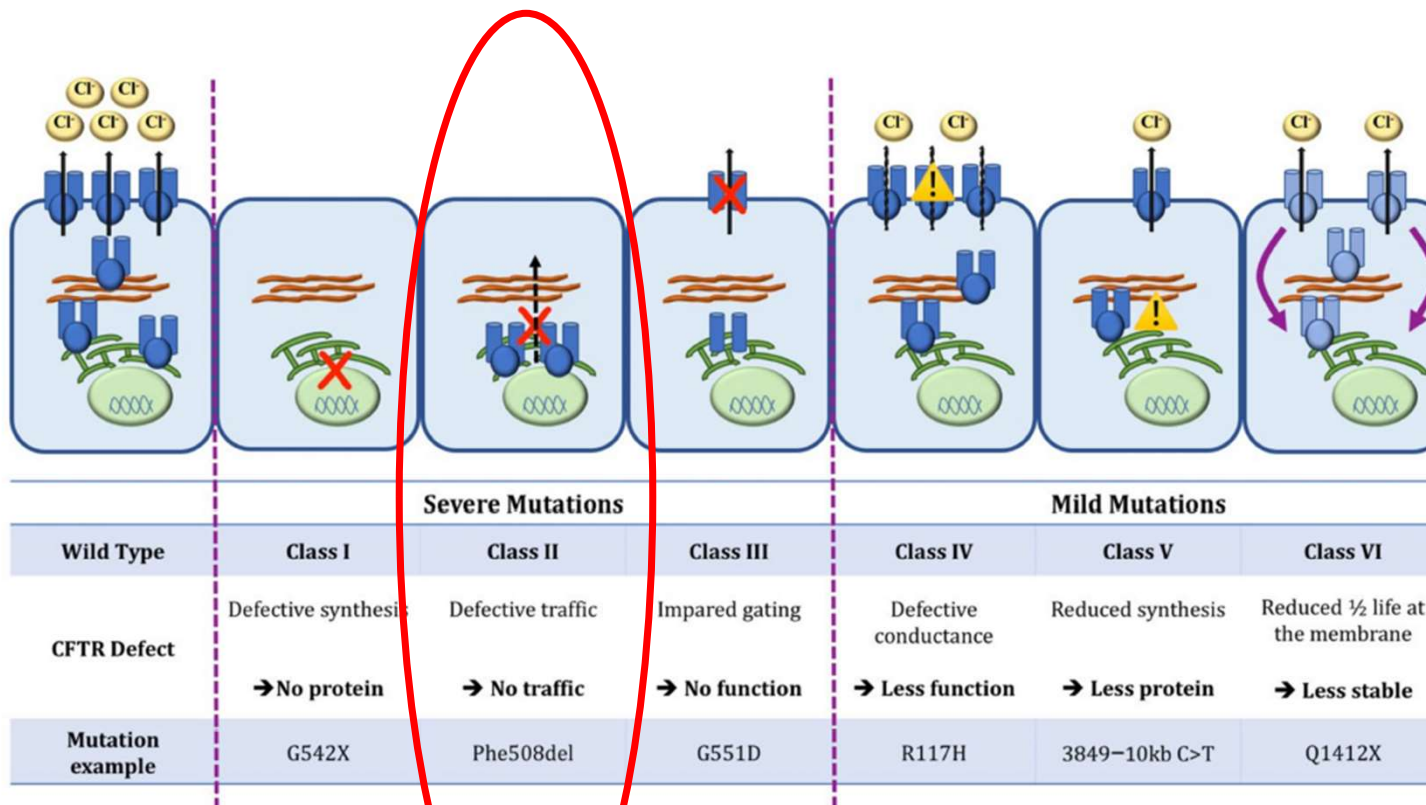
Regard et al. Cells 2022; 11: 1769



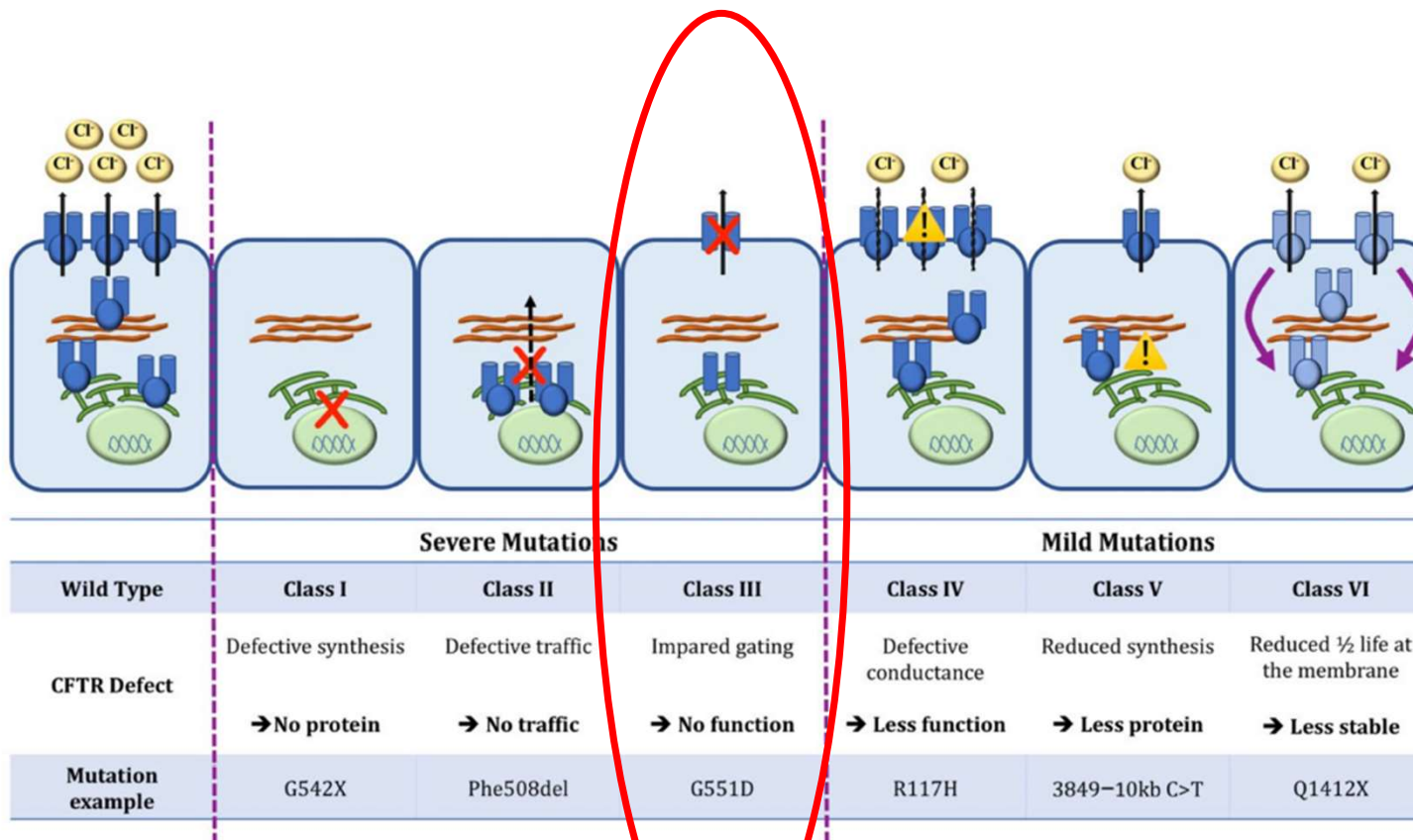
Regard et al. Cells 2022; 11: 1769



Regard et al. Cells 2022; 11: 1769



Regard et al. Cells 2022; 11: 1769



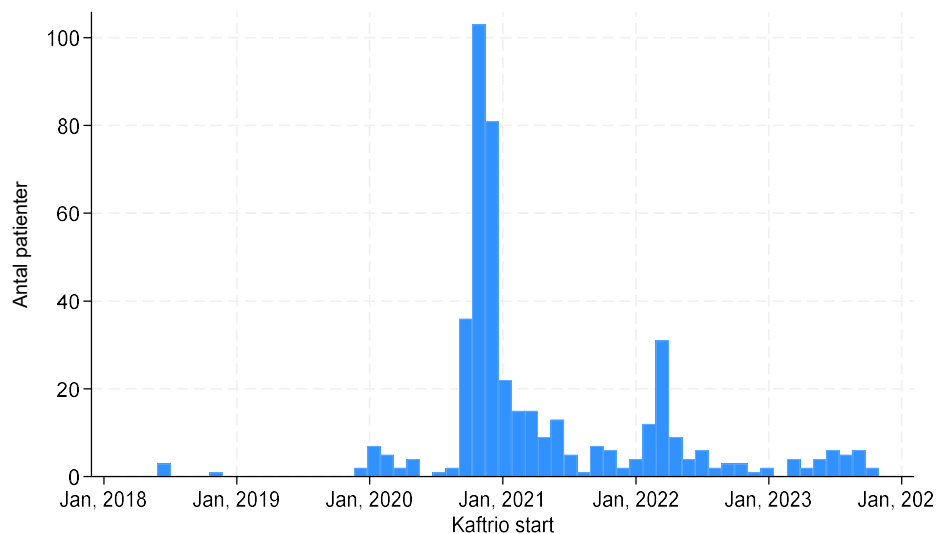
Regard et al. Cells 2022; 11: 1769



Interview: Malin Heiden. Video: Louise A. Poulsen.

Birgitte Mortensen, 57 år
Lever med CF

Real world data på CFTR modulator-behandling



Godkendelse

12+ år:

August 2020

6+ år:

Februar 2022

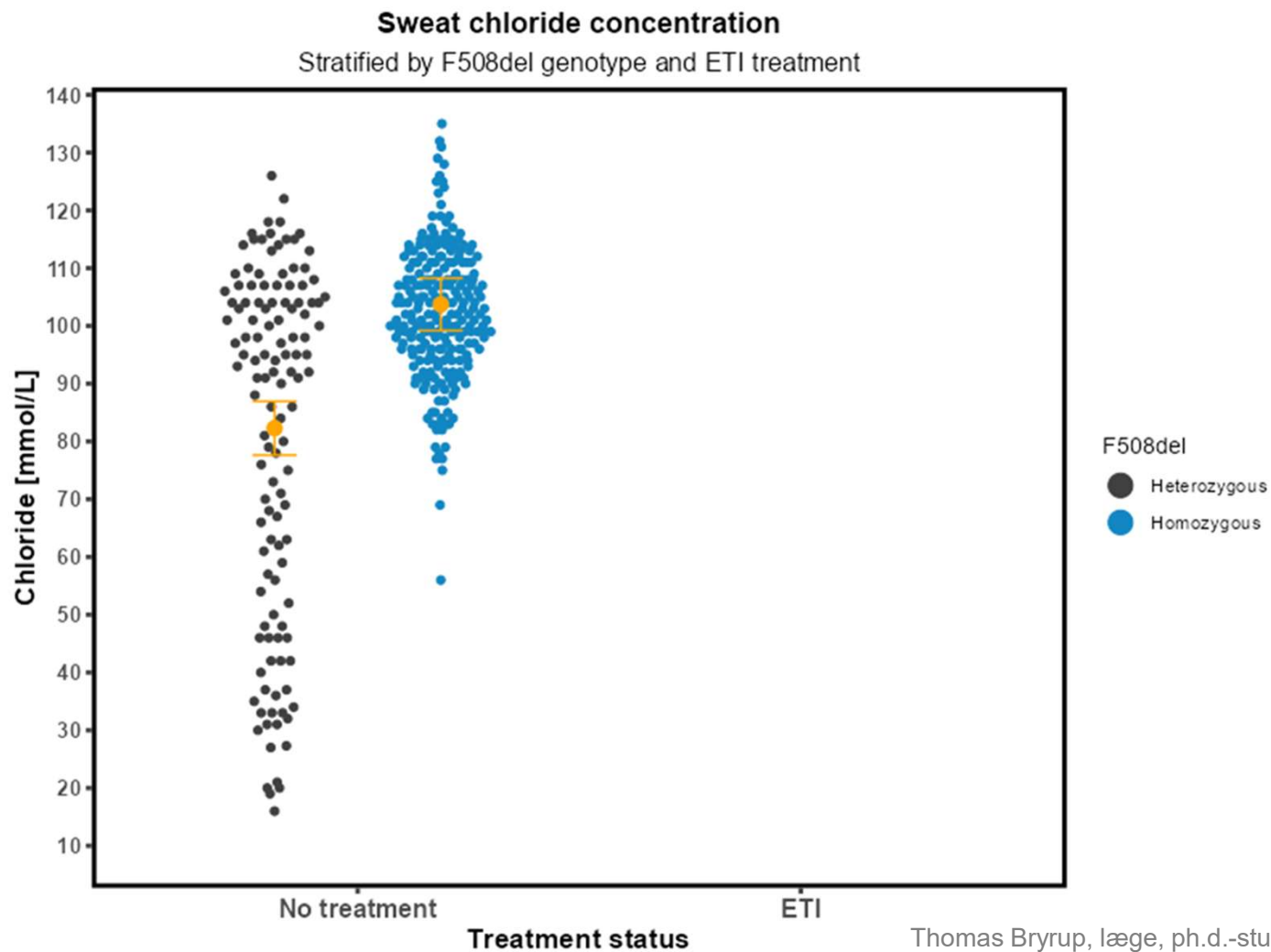
2+ år:

December 2023

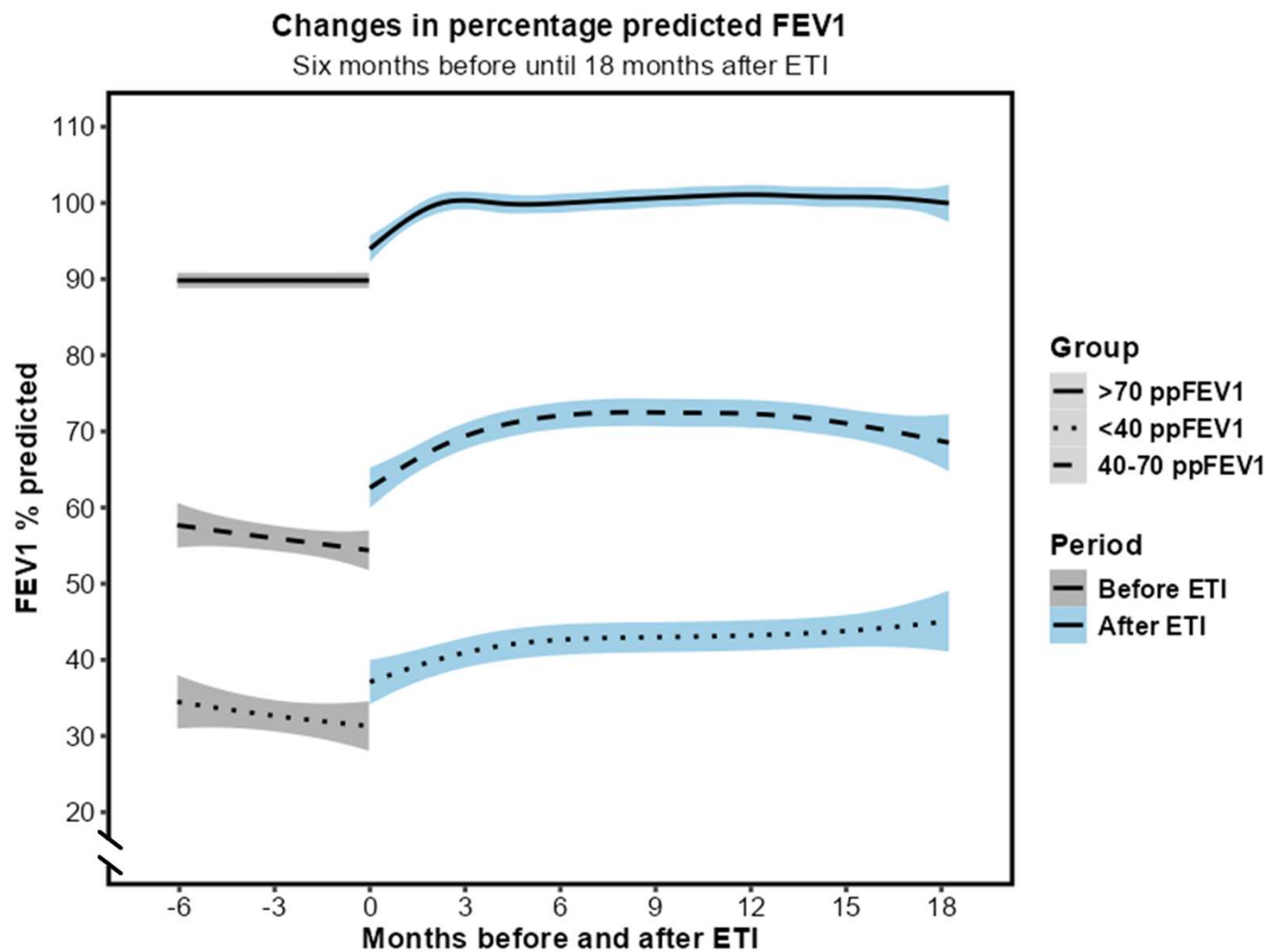


Kaftrio / ETI
(Elexacaftor/Tezacaftor/Ivacaftor)

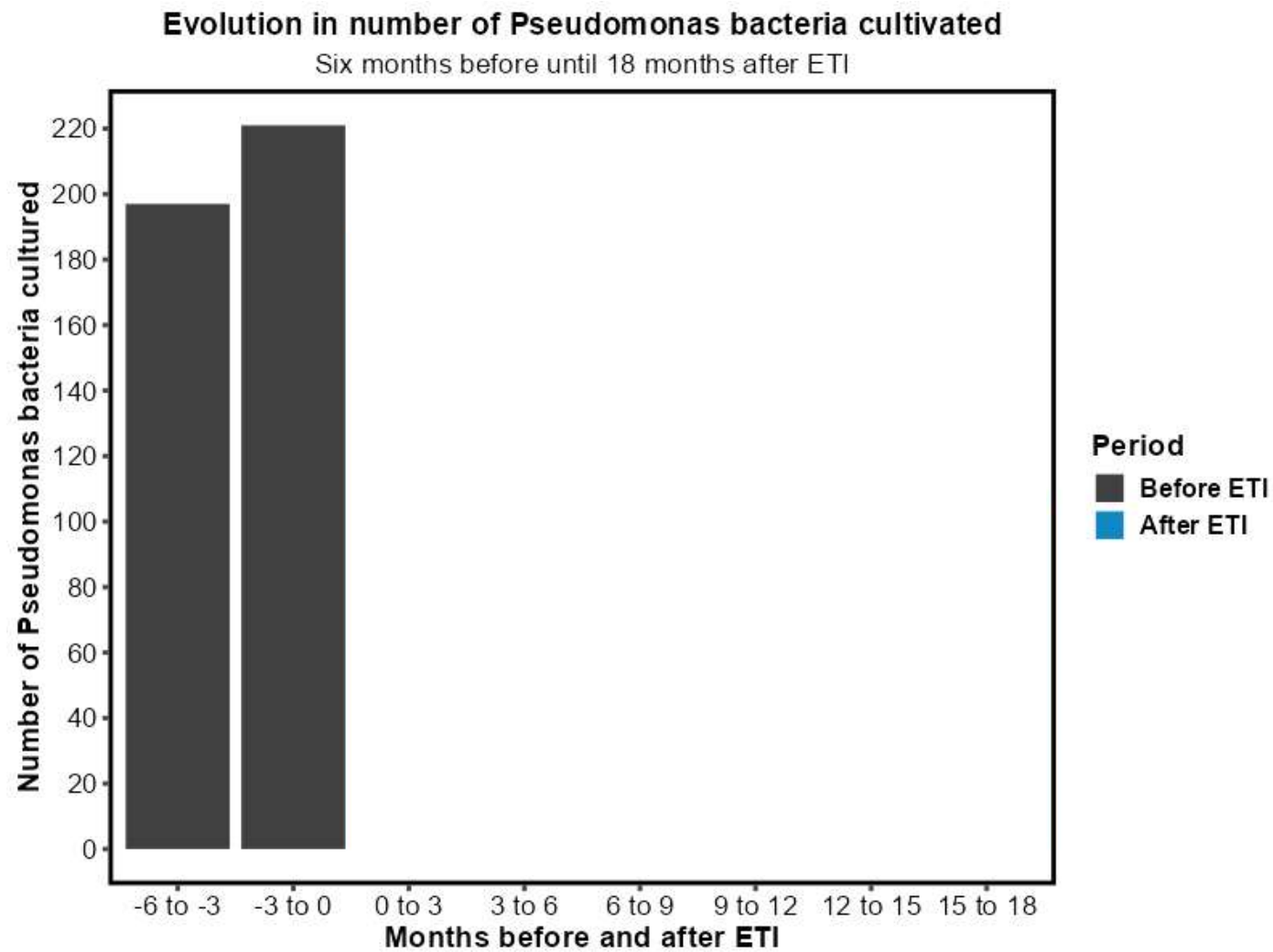
Behandlingseffekt: Svedklorid



Thomas Bryrup, læge, ph.d.-studerende, Rigshospitalet



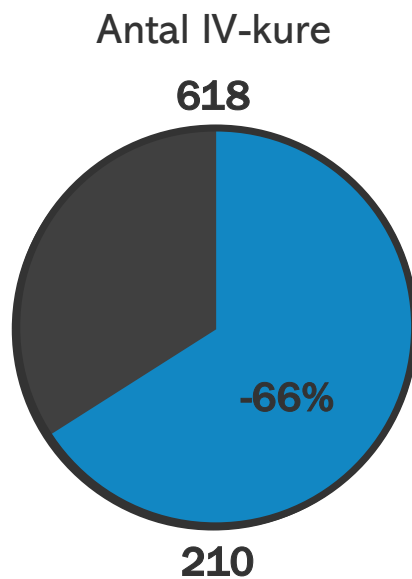
Thomas Blume,
fysioterapeut



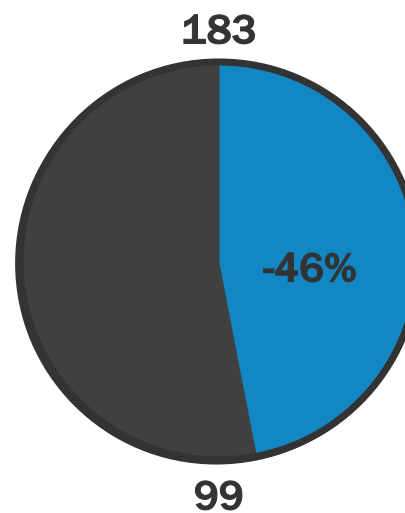
Majbritt Jeppesen, læge, ph.d.-studerende, AUH

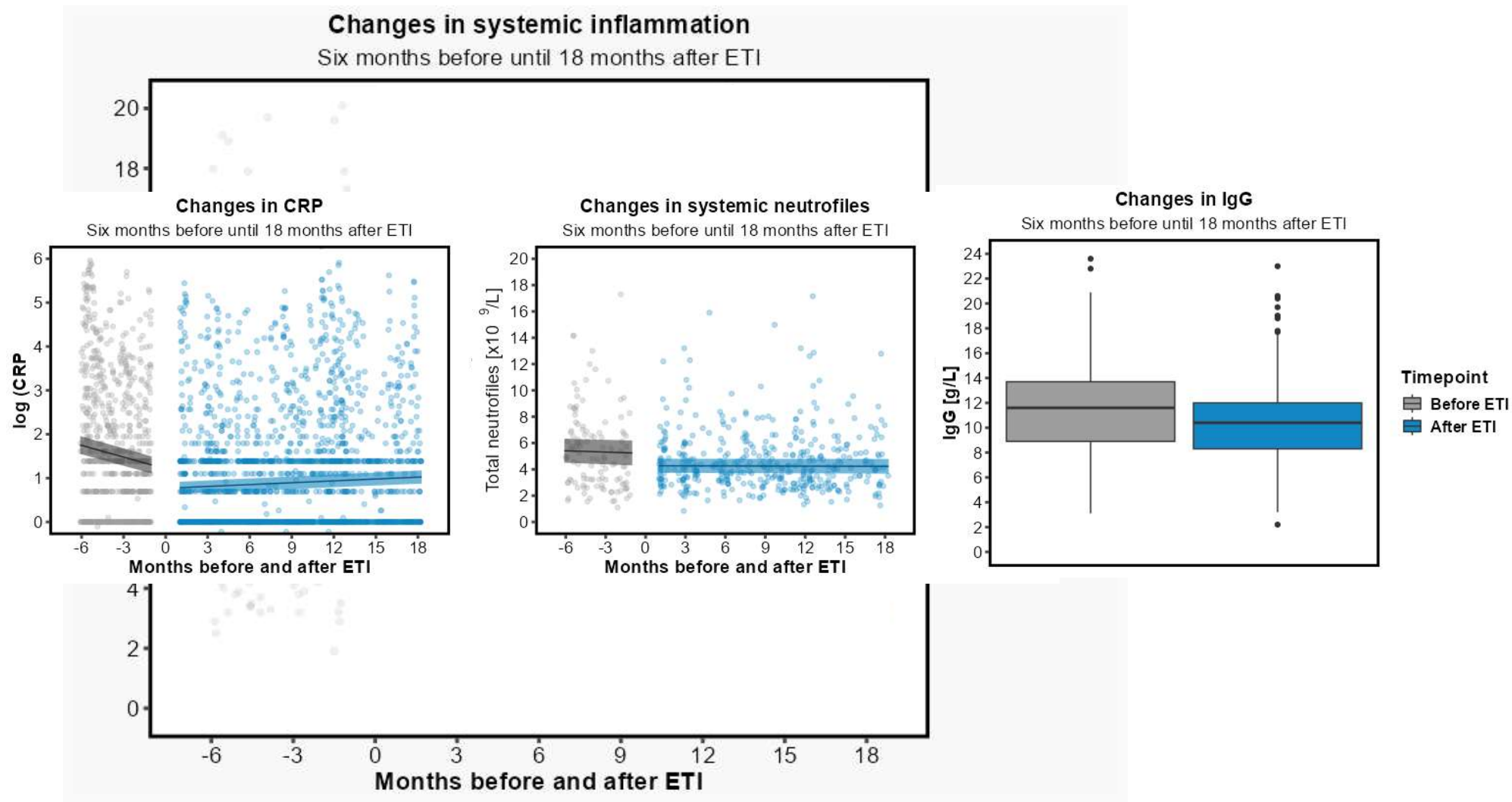
Ordinerede IV antibiotikakure

18 mdr. før ETI
18 mdr. efter ETI



Antal behandlede patienter





Thomas Bryrup, læge, ph.d.-studerende, Rigshospitalet

Andre umiddelbare effekter på modulatorbehandling

- Lungetransplantation
- BMI og ændret ernæringsbehov
- Ændret tarmfunktion
- Livskvalitet
- Graviditet
- Patientdrevet ændring i medicin
- ...

Fremtidens effekt af modulatorbehandling

- Tidlig behandling af børn (nu ned til 2 år)
- Kan vi redde flere organer (pancreas, mave-tarm, lungeskade, lever, osv.)
- Patienter med diverse behov
 - Fra "næsten raske" til kronisk multimorbiditet
- Færre indlæggelser
 - flere ambulante voksne patienter
- Kontakter omlægges til videokonsultation med hjemmemonitorering
- Mindre medicin?
- ...

Opsummering

- CF er ikke længere en "børnesygdom"
- Markante fremskridt i behandling gennem de seneste årtier
- Ny medicin ændrer på den underliggende defekt ved CF
- CF er en *ny sygdom* – både for patienter og for sundhedspersonale
- Stor differentiering i sygdomsbyrde - fra rask til kroniske organskader
- Mere sundhed, bedre overlevelse, flere patienter
- Behov for at udbygge de eksisterende samarbejder

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Paneldebat



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Tak for i dag

