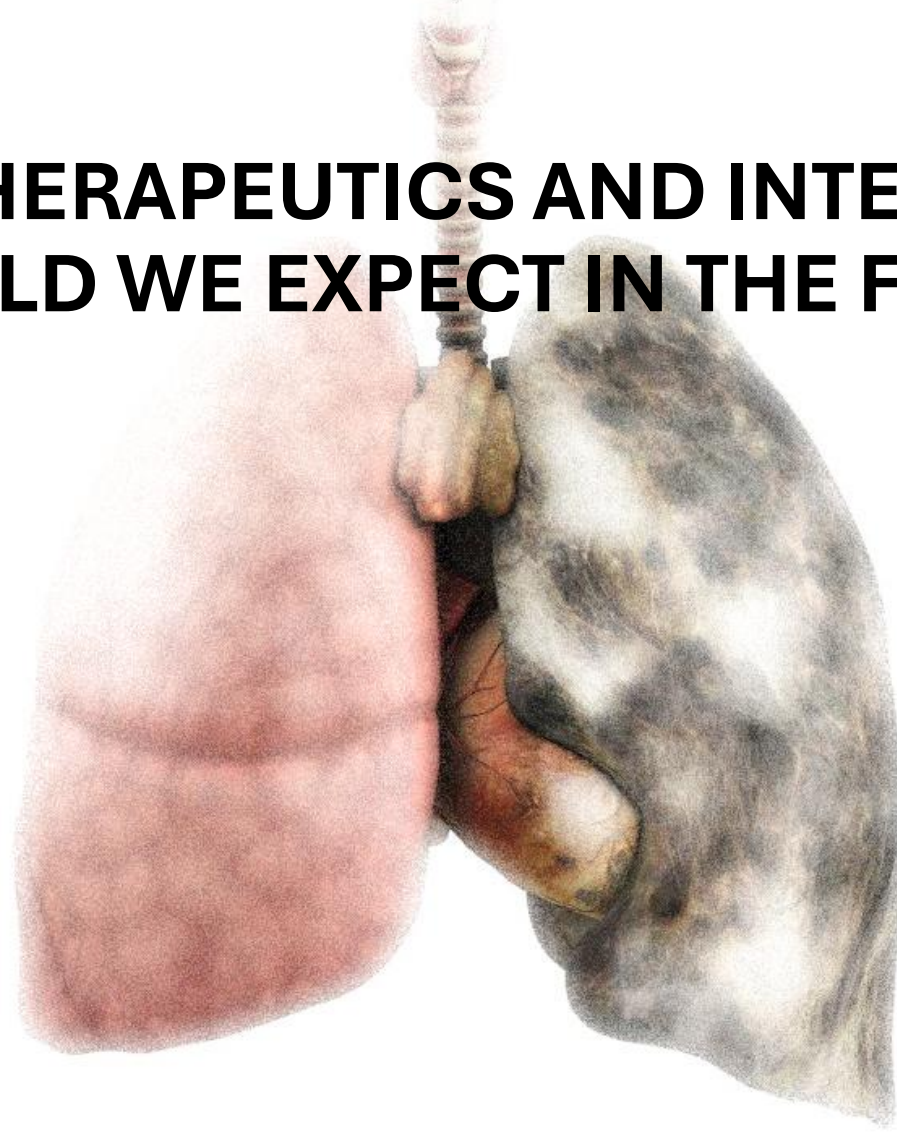


CHRONIC OBSTRUCTIVE PULMONARY DISEASE:

WHICH THERAPEUTICS AND INTERVENTIONS SHOULD WE EXPECT IN THE FUTURE?



Belgian Nursing Days 2025- Liège



Charlotte de Fays MD, PhD

Pulmonologist

ZOL Genk

CONFLICT OF INTEREST DISCLOSURE

I have no real or perceived conflicts of interest that relate this presentation

Current therapeutics options:

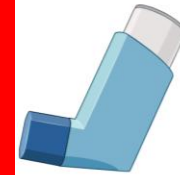
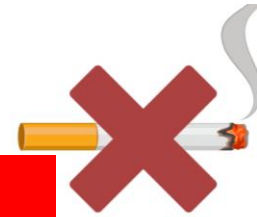
What is COPD?

CIGARETTE SMOKE
POLLUTION

INCREASING BURDEN WORLDWIDE!

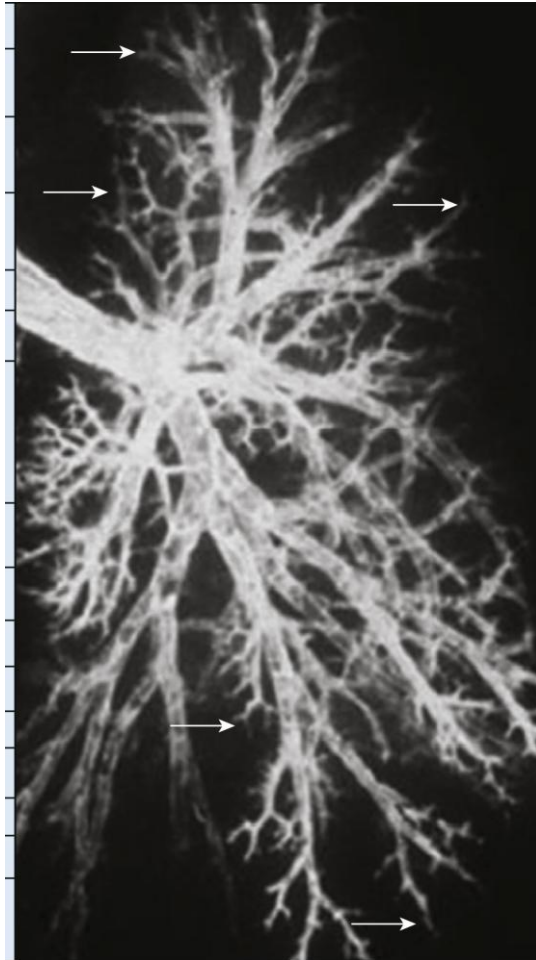
IMPROVE UNDERSTANDING OF THE DISEASE

DEFINE NEW TREATMENTS



INTRODUCTION

Some of the hurdles to **cure** COPD:

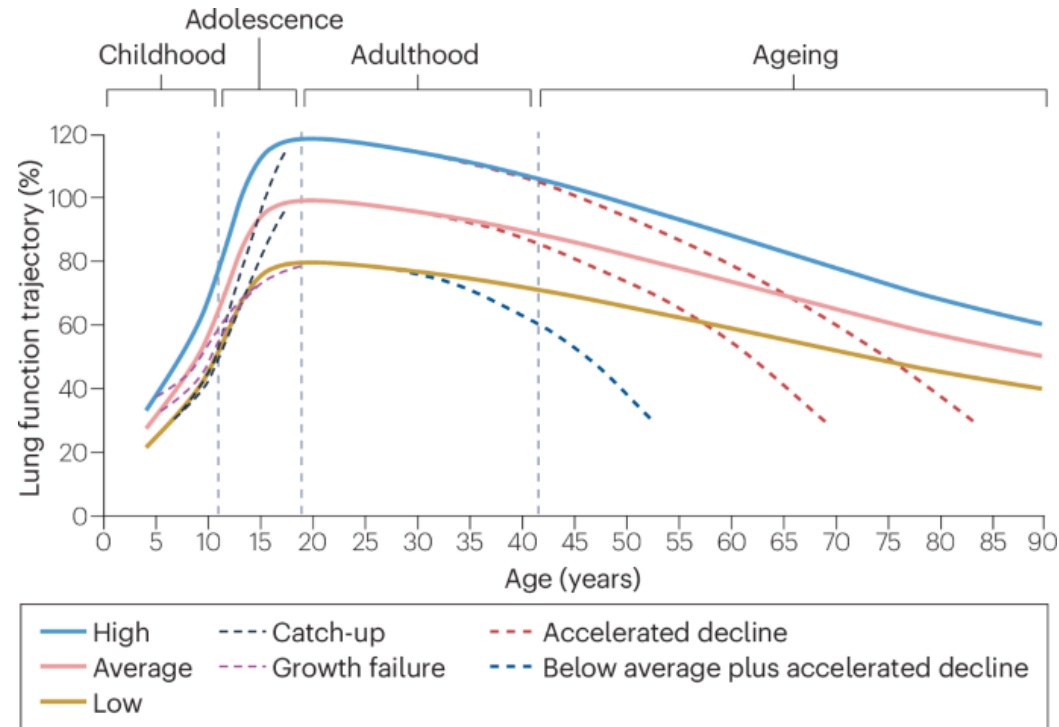


Small airways disease

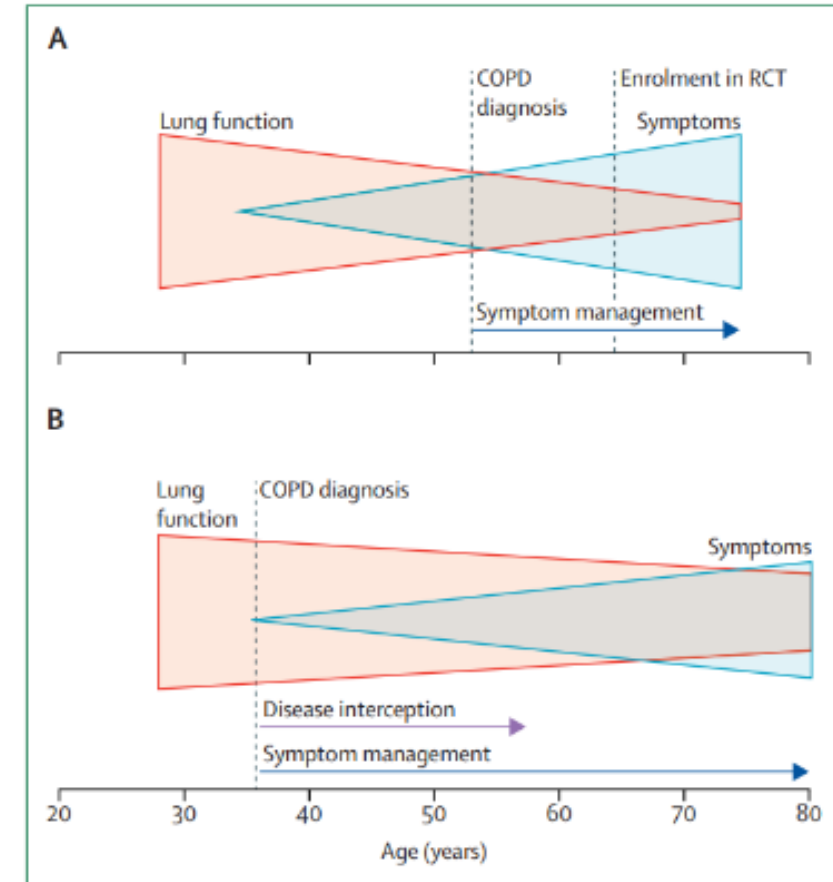
Usmani, Chest 2021

Stolz, Lancet 2022

Agosti, Nature 2025



Heterogeneity



Late diagnosis

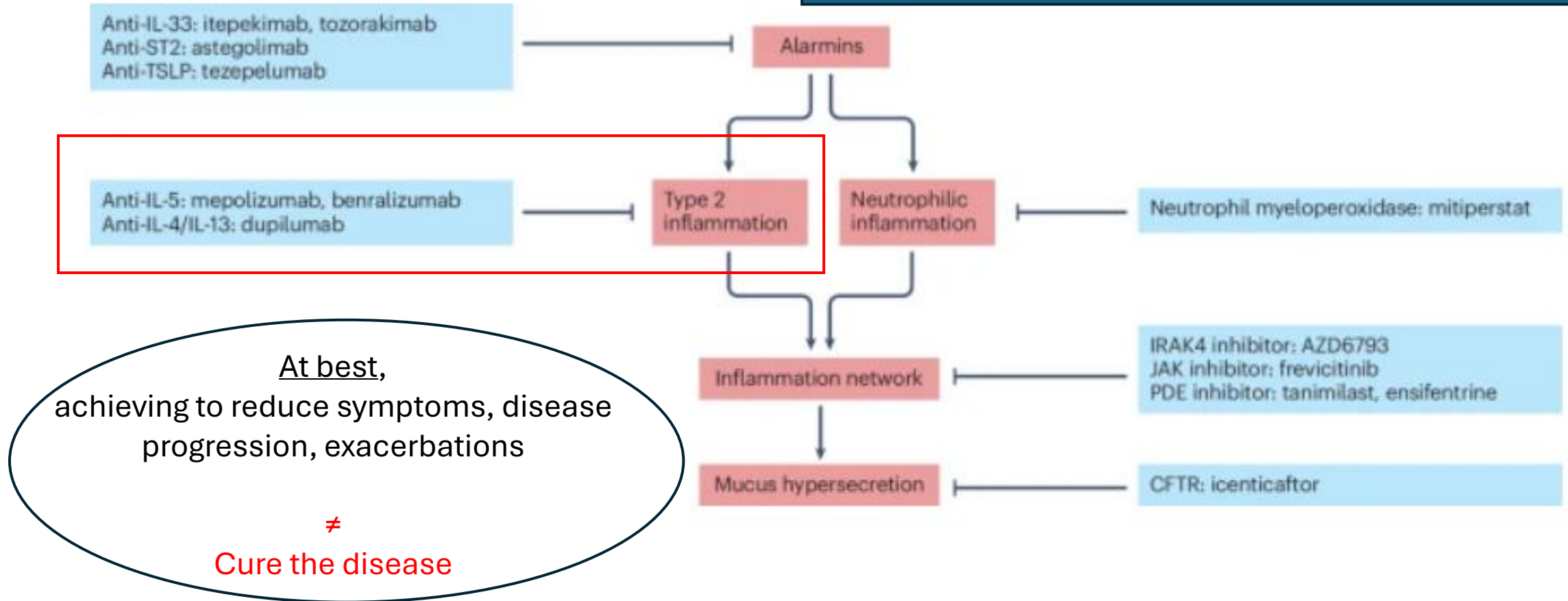
PLAN

1. RECENT TRIALS WITH NEW DRUGS IN COPD
2. NEW FINDINGS IN COPD PATHOPHYSIOLOGY AND ASSOCIATED POTENTIAL THERAPEUTIC INTERVENTIONS

RECENT TRIALS IN COPD

Drugs in the pipeline

Targeting Chronic Inflammation triggered by cigarette smoke



MEPOLIZUMAB (IL-5 inhibitor)



BENRALIZUMAB (IL-5 inhibitor)



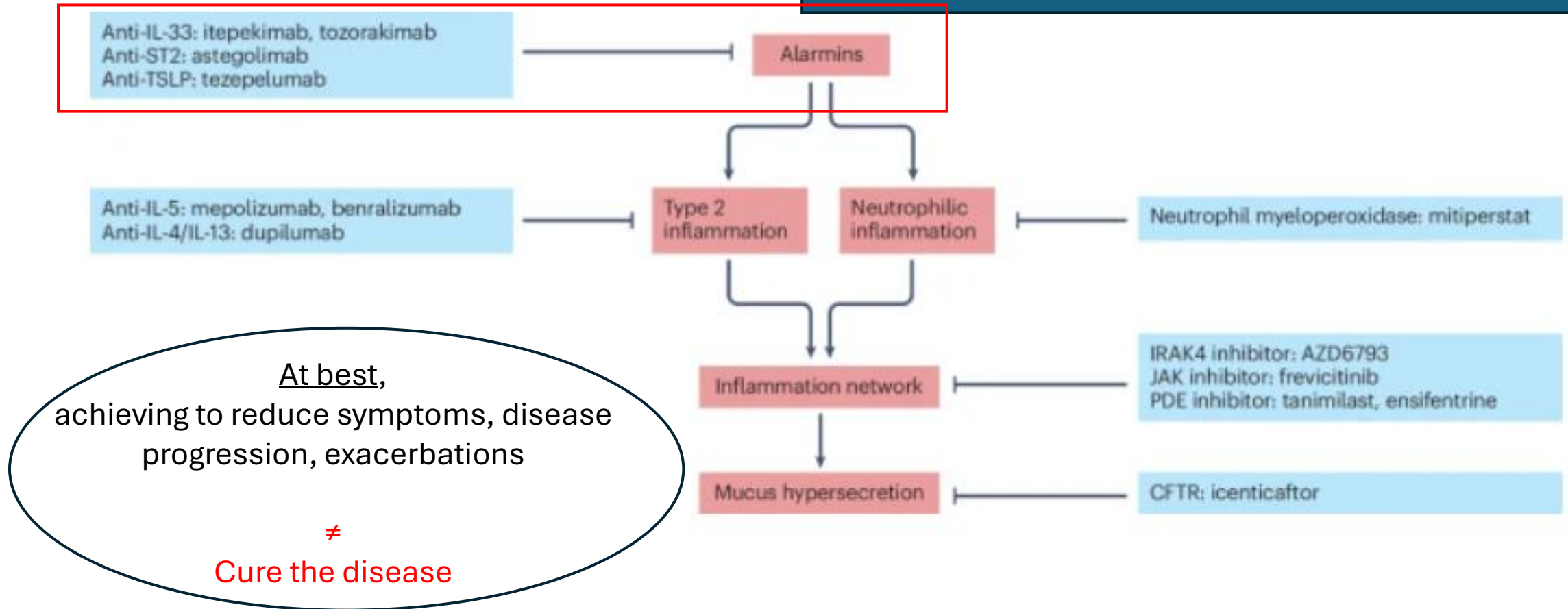
↓ exacerbations in **patients with Eos 300/ μ L** and under inhaled triple therapy

DUPILUMAB (IL-4 and IL-13 inhibitor)



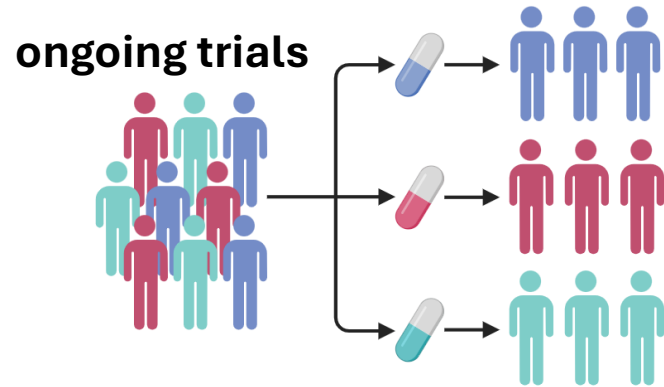
Drugs in the pipeline

Targeting Chronic Inflammation triggered by cigarette smoke



DRUGS TARGETING ALARMINs

ITEPEKIMAB / TOZORAKIMAB (IL-33 inhibitor)



Promising results on ↓ exacerbations and ↑ FEV1 in **ex-smokers and high Eos**



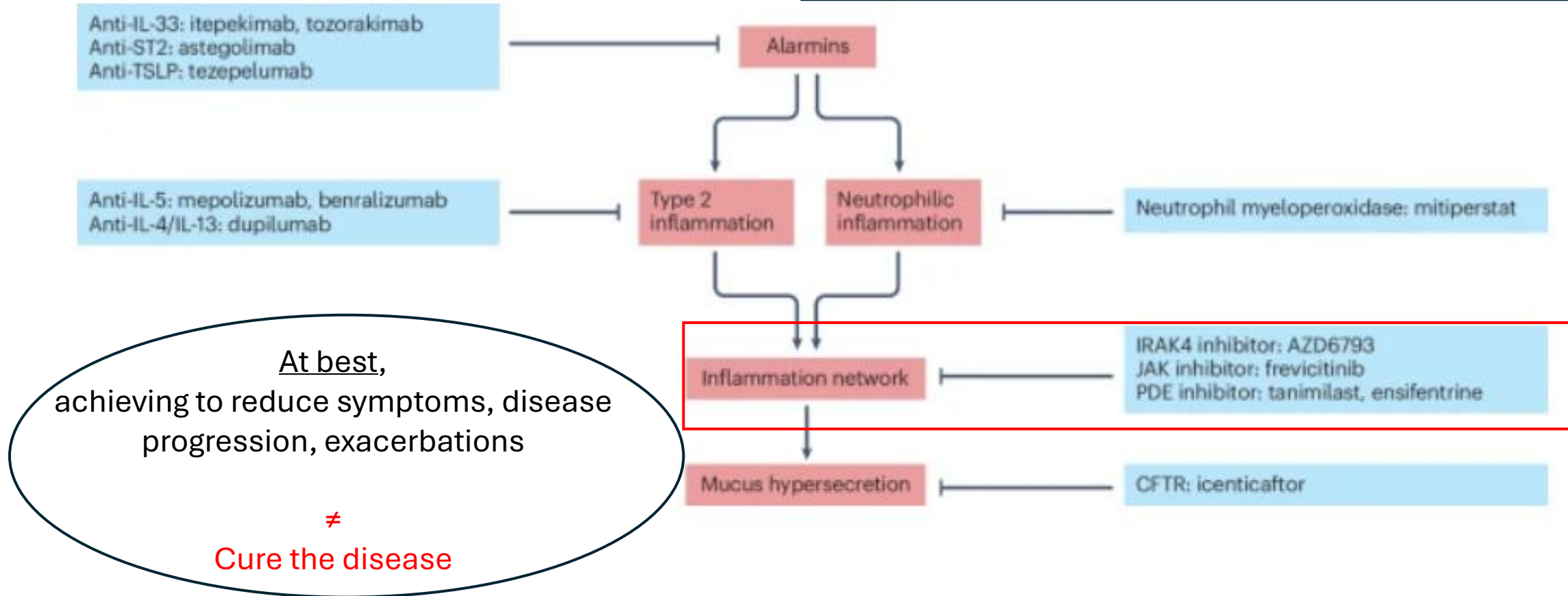
Promising results on ↓ exacerbations in **patients with high Eos**

TEZEPELUMAB (anti-TSLP)

RECENT TRIALS IN COPD

Drugs in the pipeline

Targeting Chronic Inflammation triggered by cigarette smoke



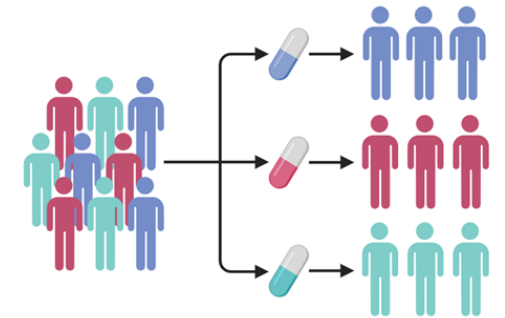
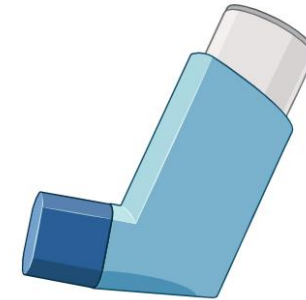
DRUGS TARGETING PHOSPHODIESTERASES

ROFLUMILAST (PDE4 inhibitor – oral)



! Side effects: gastro-intestinal disturbance

ENSIFENTRINE (PDE3/4 inhibitor – inhaled)

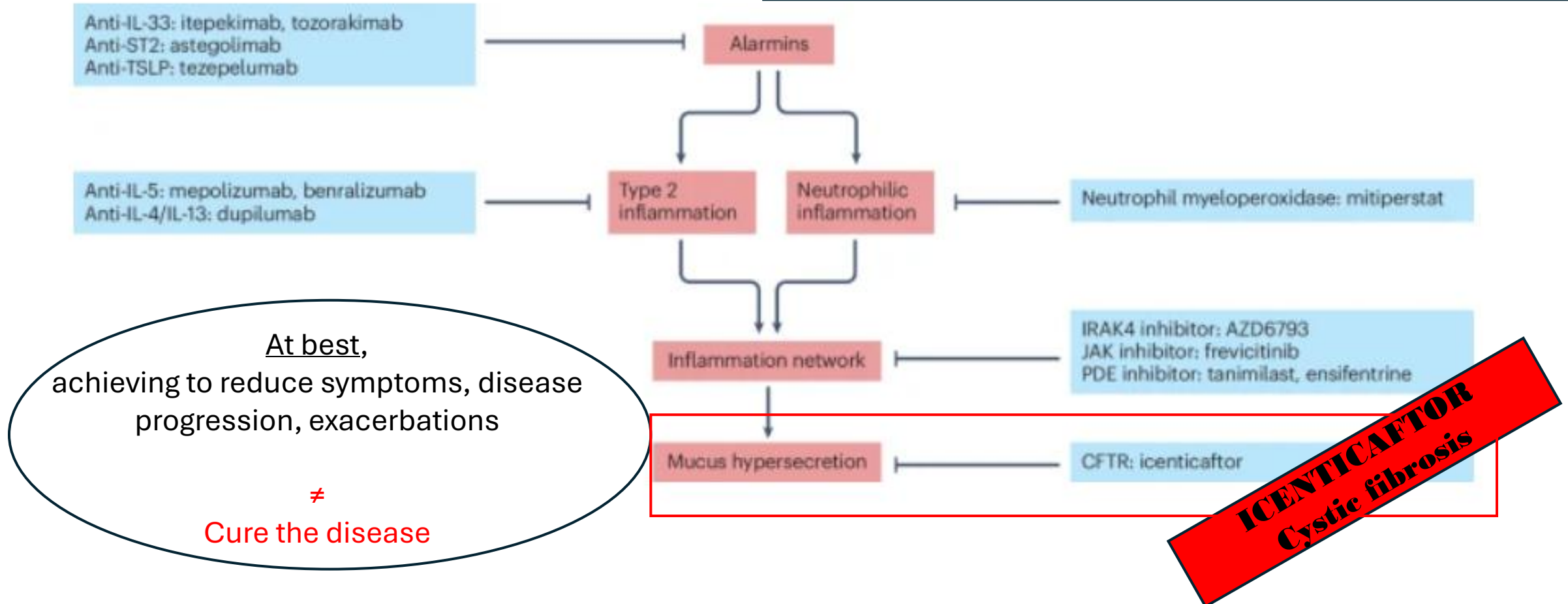


↑ FEV1, QoL and ↓ exacerbations in patients >10 PY
Well-tolerated

RECENT TRIALS IN COPD

Drugs in the pipeline

Targeting Chronic Inflammation triggered by cigarette smoke



1. RECENT TRIALS WITH NEW DRUGS IN COPD

+/- promising results to **improve COPD patient**

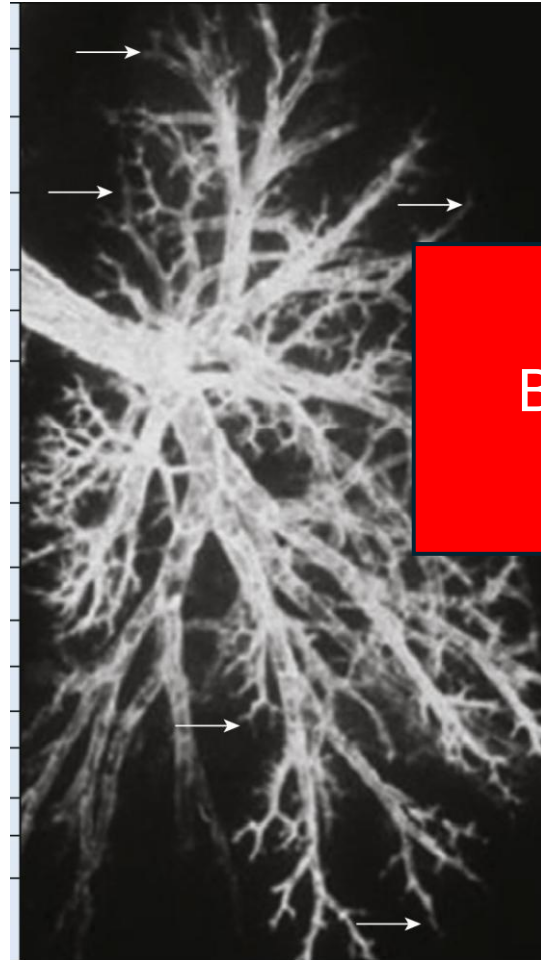
but

Not to cure the patients!

2. NEW FINDINGS IN COPD PATHOPHYSIOLOGY AND ASSOCIATED POTENTIAL THERAPEUTIC INTERVENTIONS

INTRODUCTION

Some of the hurdles to **cure** COPD:



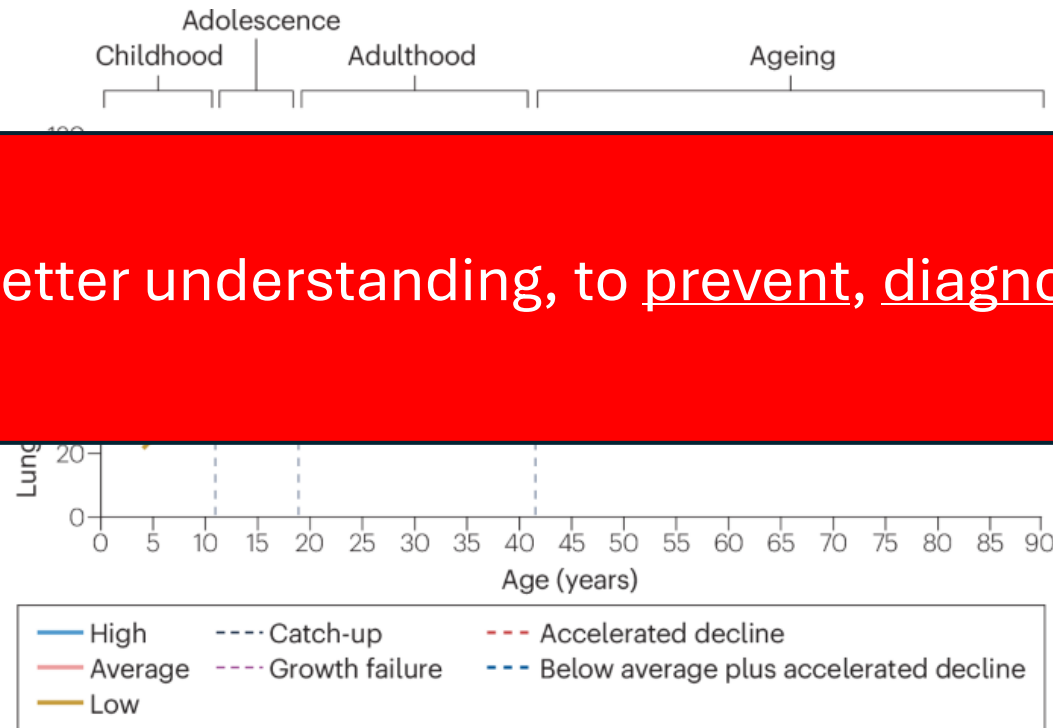
Small airways disease

Usmani, Chest 2021

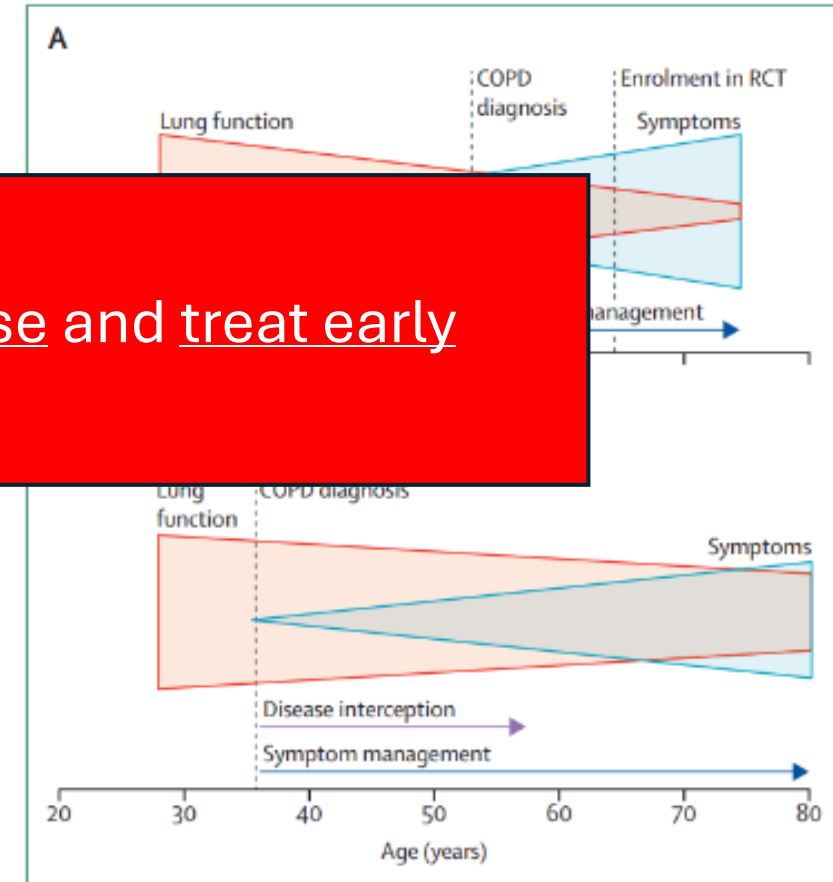
Stolz, Lancet 2022

Agosti, Nature 2025

Better understanding, to prevent, diagnose and treat early

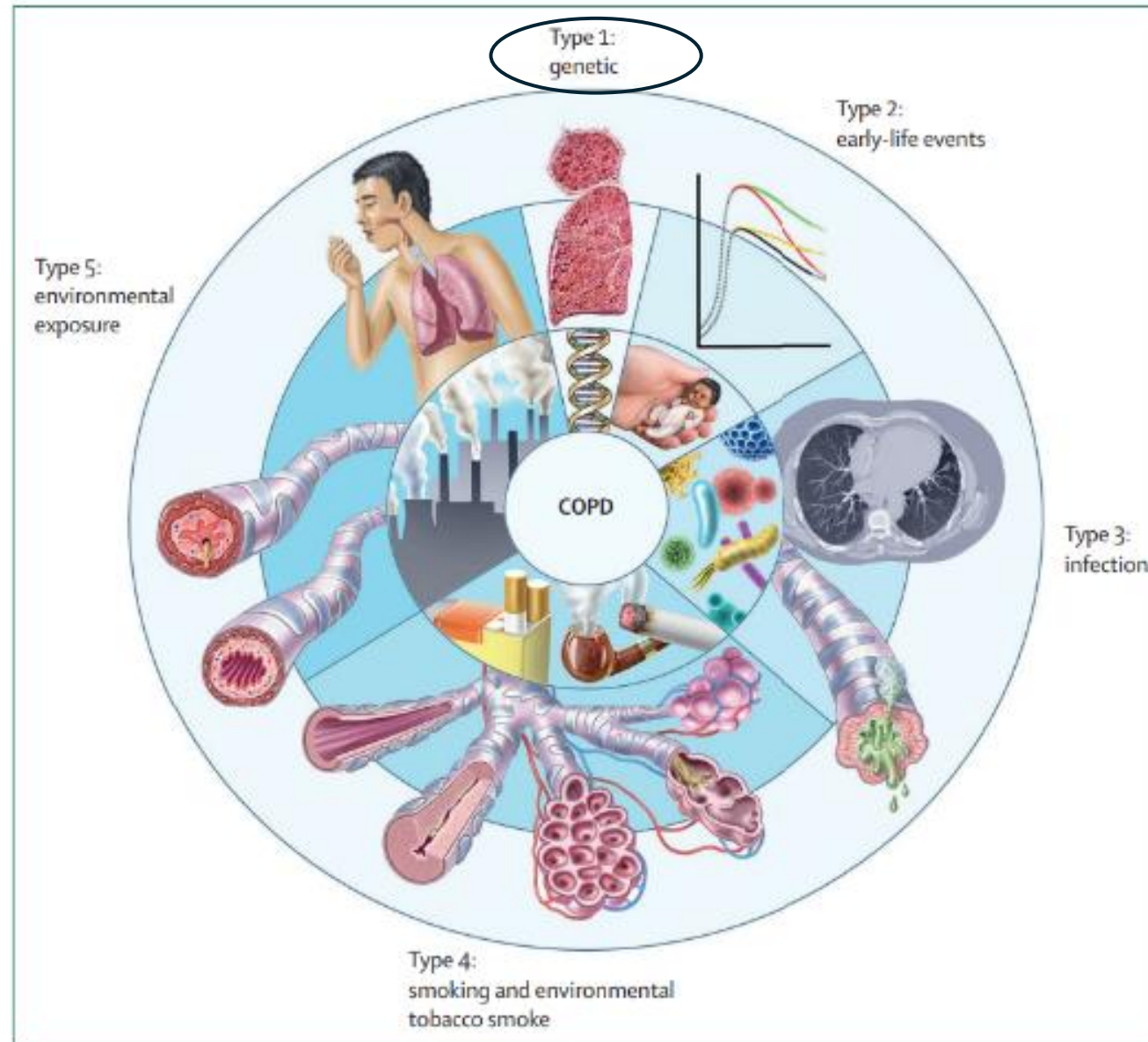


Heterogeneity



Late diagnosis

NEW FINDINGS IN COPD AND POTENTIAL THERAPEUTIC INTERVENTIONS

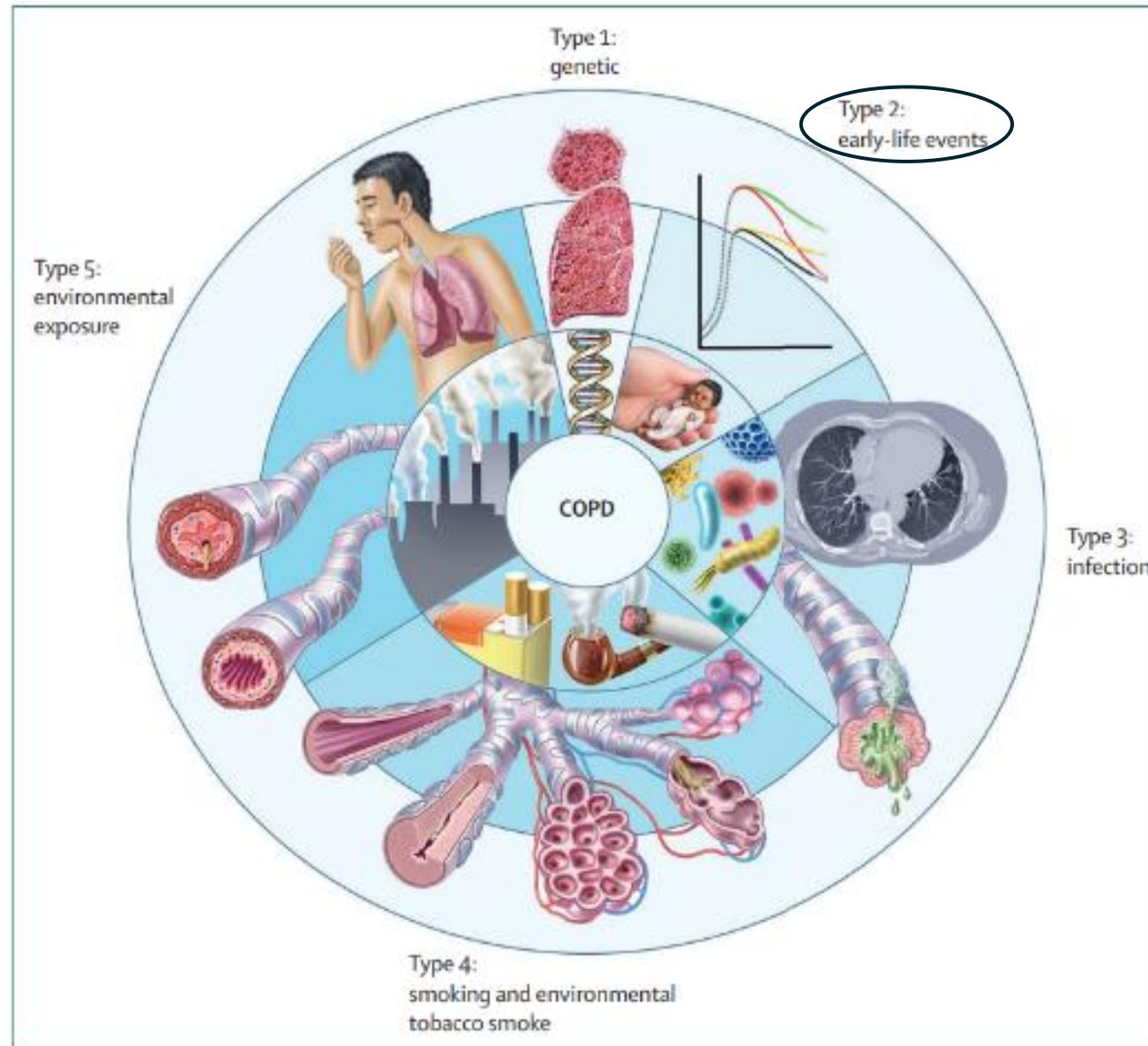


Probable genetic heritability in COPD

- α 1-antitrypsin deficiency
- Other mutations? TERT mutations? Polygenic score



NEW FINDINGS IN COPD AND POTENTIAL THERAPEUTIC INTERVENTIONS

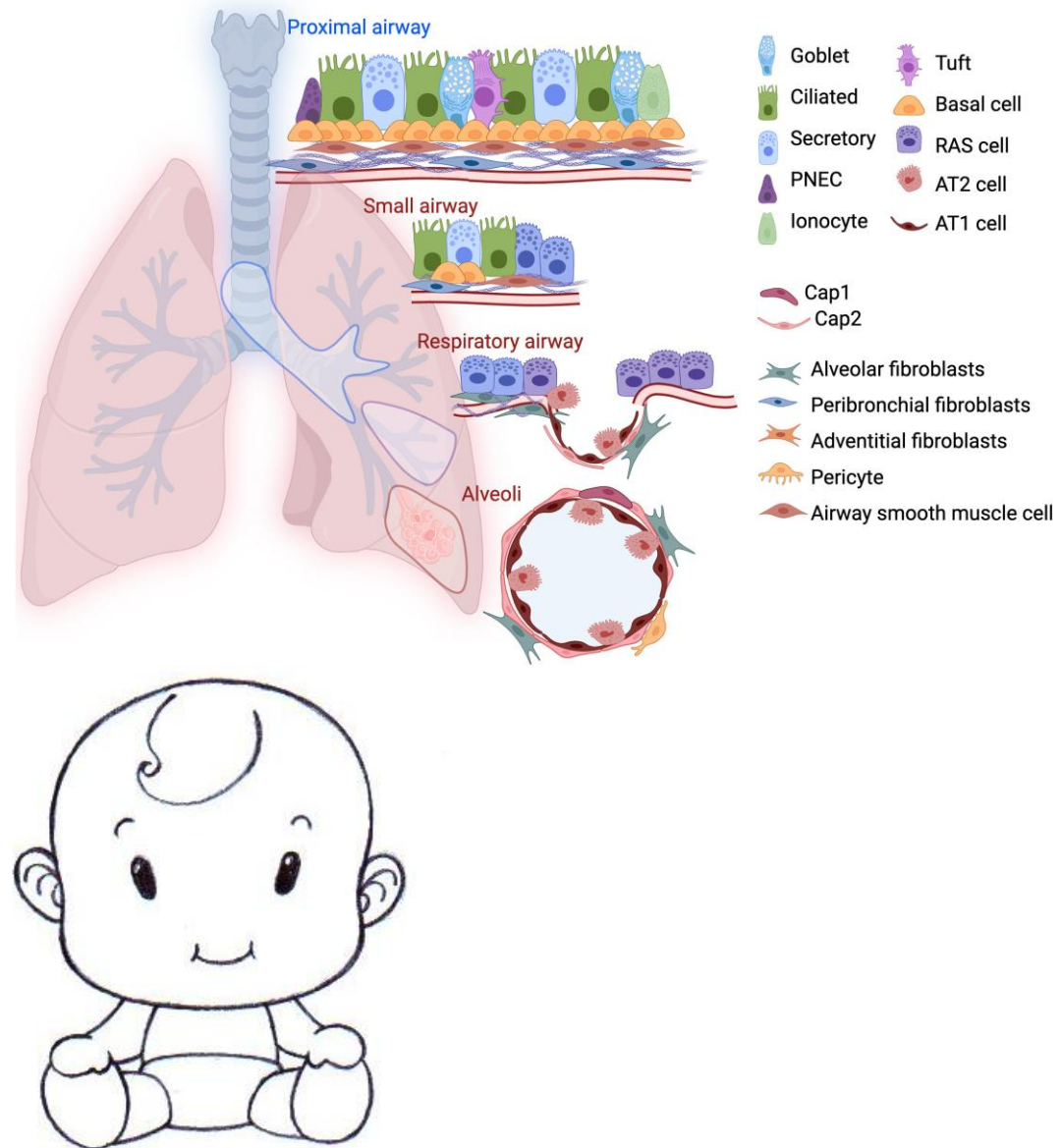


EARLY-LIFE EVENTS

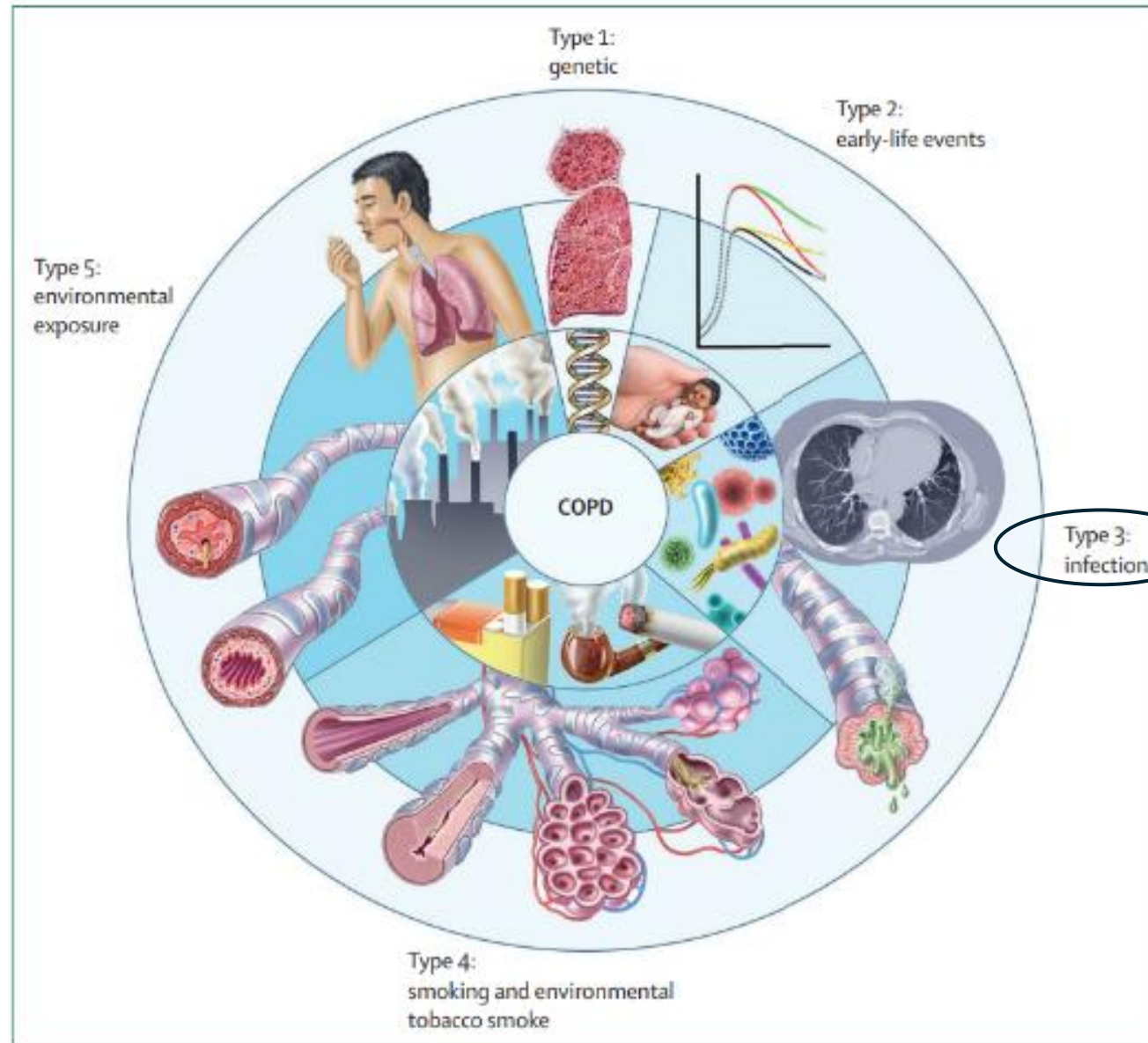
➤ Abnormal lung regeneration

➤ Prematurity

➤ Childhood Asthma

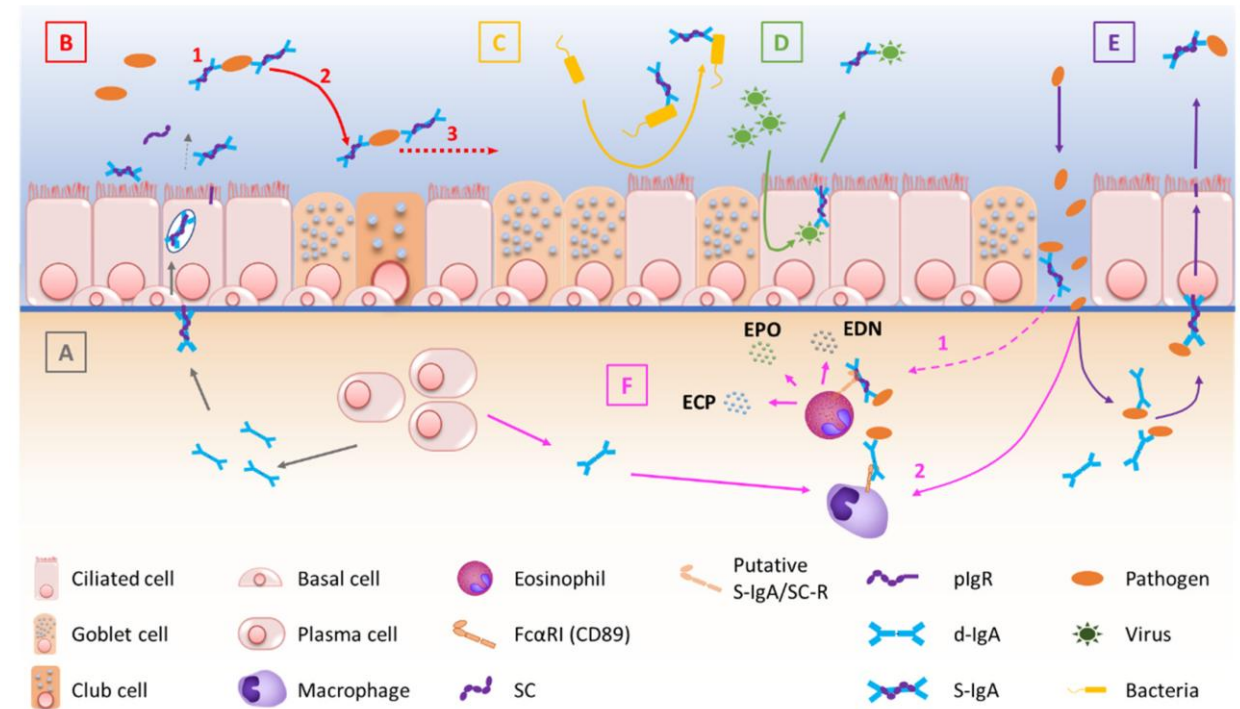
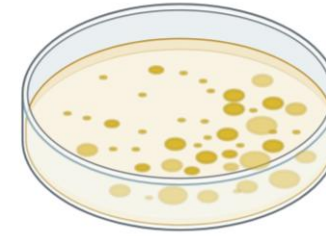


NEW FINDINGS IN COPD AND POTENTIAL THERAPEUTIC INTERVENTIONS

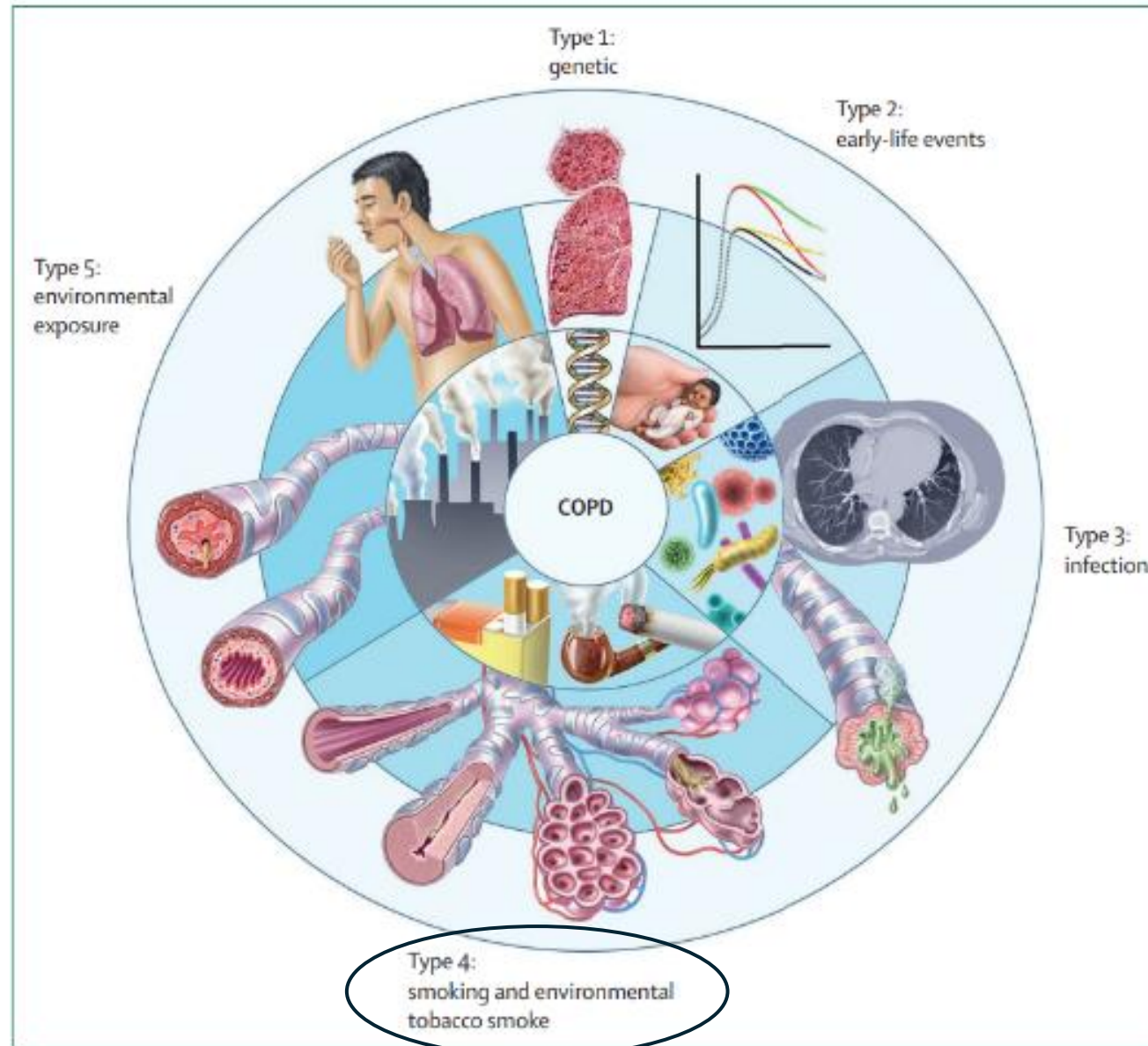


INFECTIONS

- Lung microbiome alteration in COPD
- TBC patients
- Airway mucosal defenses alterations (IgA)
- Early vaccination



NEW FINDINGS IN COPD AND POTENTIAL THERAPEUTIC INTERVENTIONS



SMOKING AND ENVIRONMENTAL TOBACCO EXPOSURE

➤ In utero and early life exposure

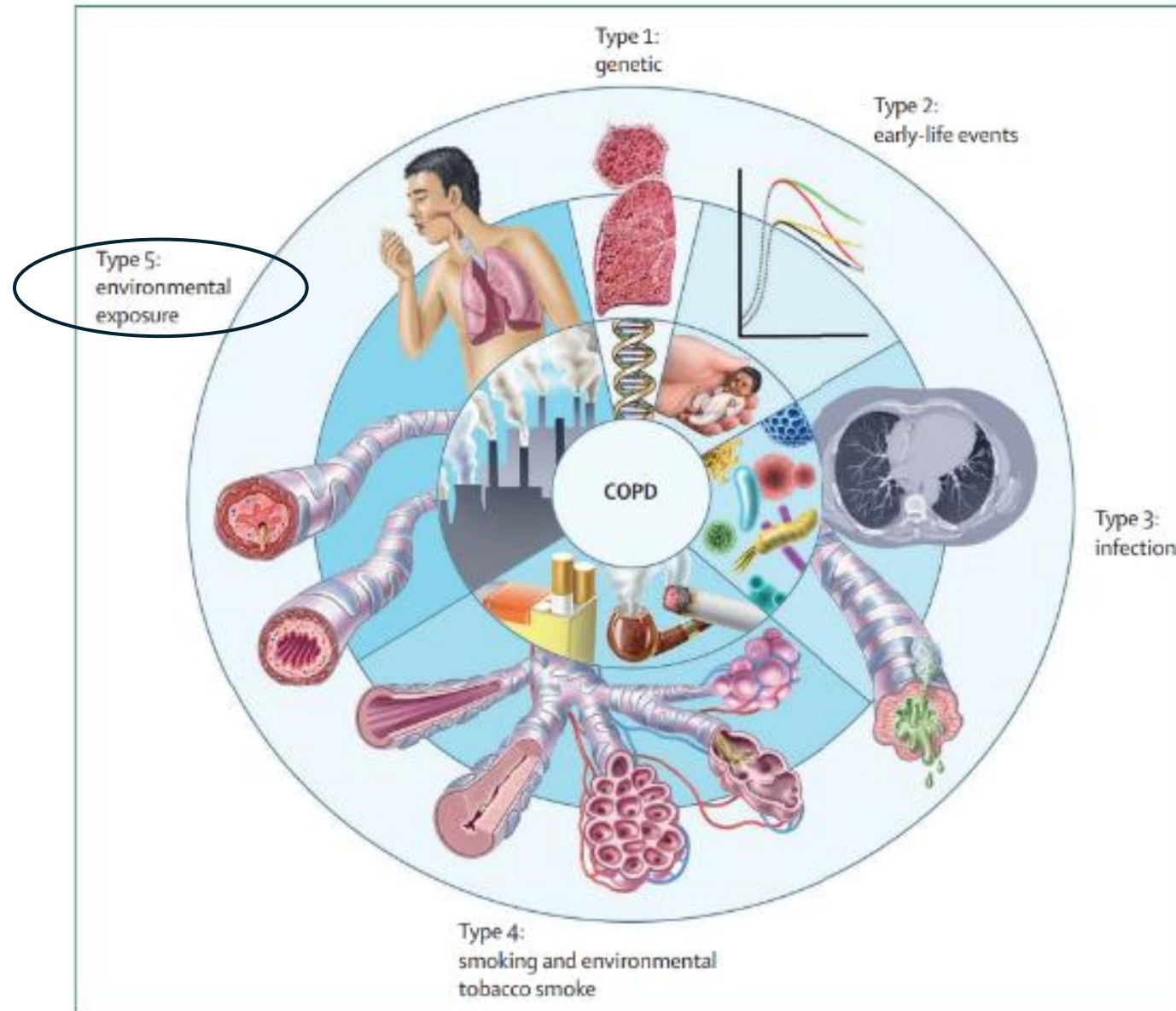
➤ Vaping

➤ Cannabis

➤ **Passive smoking!**



NEW FINDINGS IN COPD AND POTENTIAL THERAPEUTIC INTERVENTIONS



ENVIRONEMENTAL EXPOSURE

➤ Indoor pollutants

➤ Ambient pollution

➤ Occupational exposure

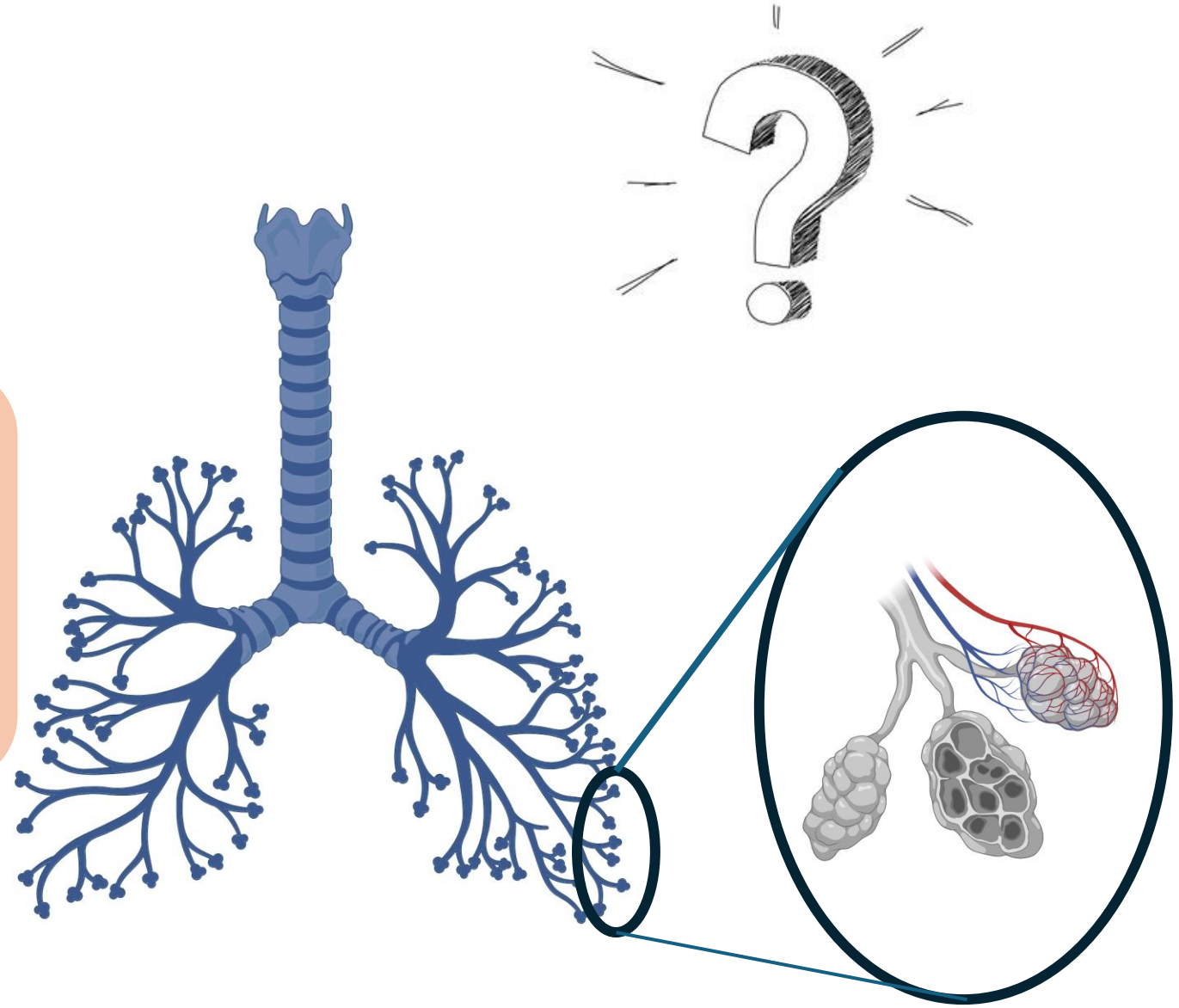


1. RECENT TRIALS WITH NEW DRUGS IN COPD

2. **NEW FINDINGS IN COPD PATHOPHYSIOLOGY AND ASSOCIATED POTENTIAL THERAPEUTIC INTERVENTIONS**

VERY COMPLEX DISEASE WHICH SHOULD BE
EXTENSIVELY REDEFINED FOR A MORE EFFICIENT
PREVENTION AND EARLY DIAGNOSIS

Until we really understand
what is going on deep in the
COPD lung!



More fundings needed for research

THANK YOU FOR YOUR ATTENTION!

With special thanks to ♥

Sonja Vrancken

Yamina Kerouach

&

Carmelita Damiao Gomes

