

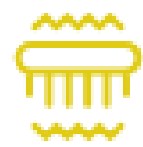
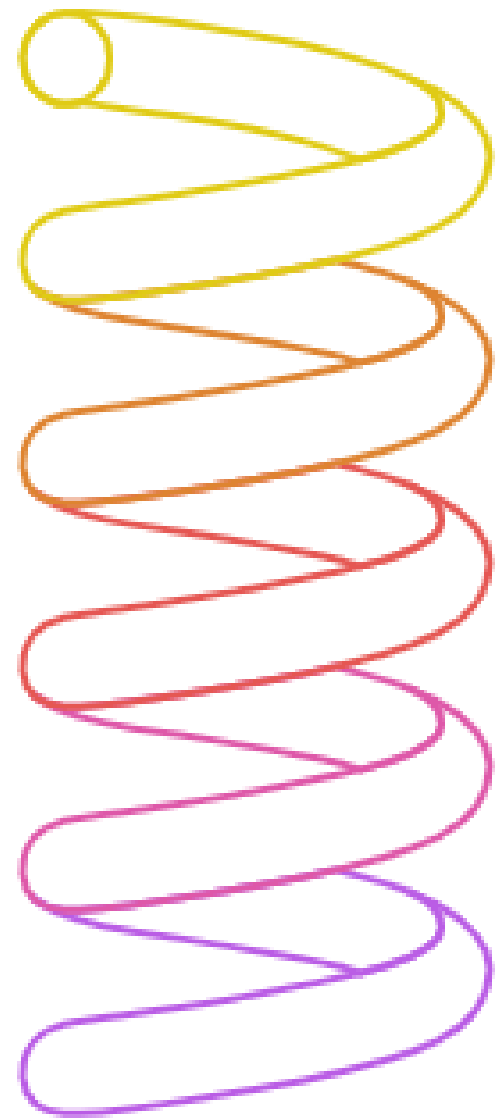
# Tuberculose

FISIOPATOLOGIA E  
MANIFESTAÇÕES CLÍNICAS



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Residente de pneumologia HJPII

# História



Há milhares de anos, emergiu como um patógeno humano na África



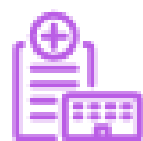
Dispersão Global devido às migrações



1882 - Robert Koch descobriu o bacilo da TB



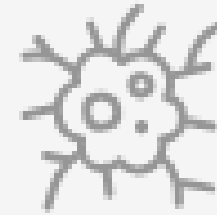
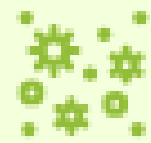
Estabeleceu sua natureza infecciosa e modo de transmissão aérea



1904 - desenvolvimento da vacina pelos cientistas Albert Calmette e Camille Guérin, recebendo o nome de BCG



Bacilo álcool-ácido  
resistente



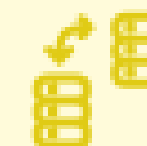
Mycobacterium  
Tuberculosis



Parede Celular Espessa

- Rica em lipídeos (ácido micólico)

Aeróbio Restrito



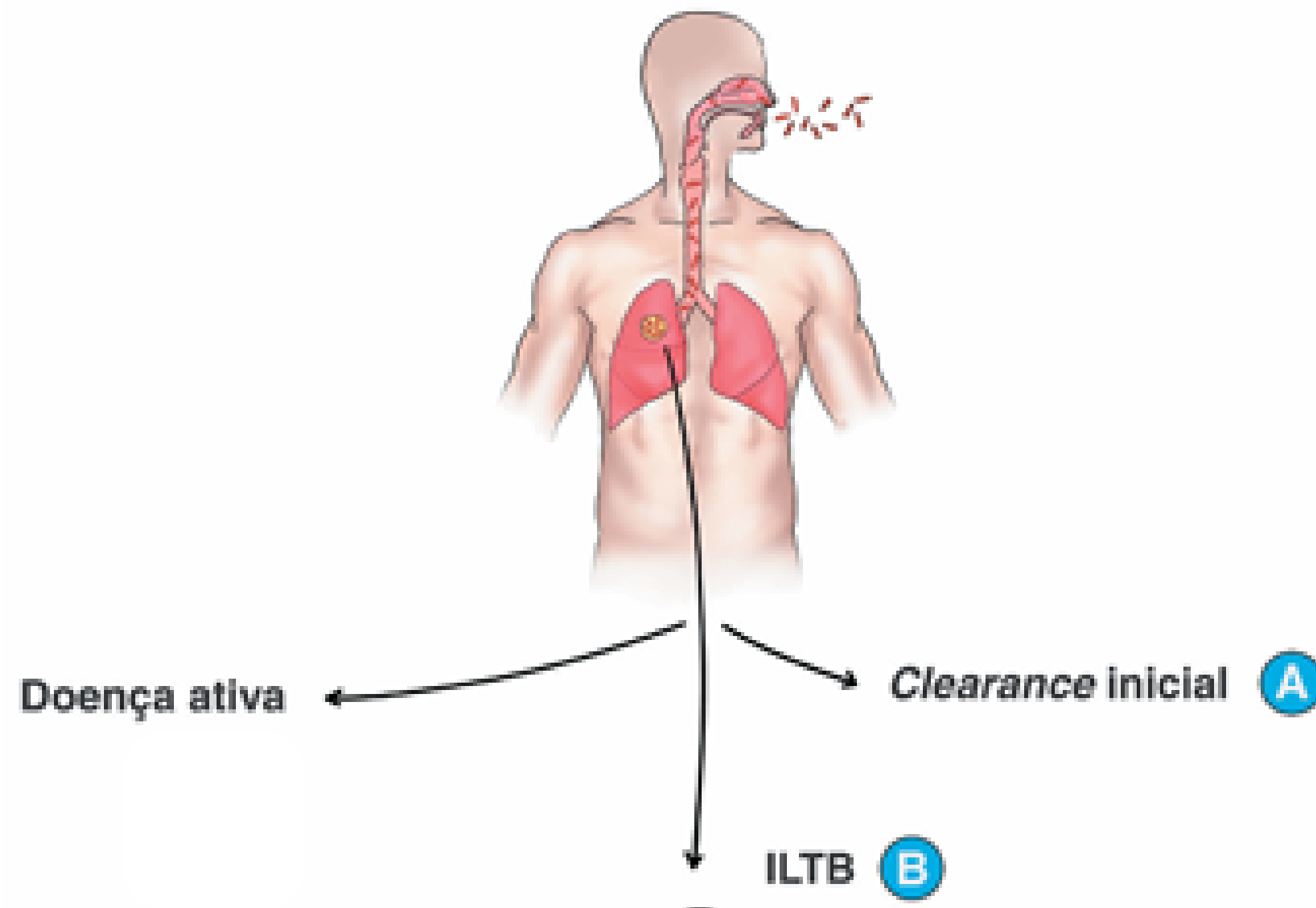
Replicação Intracelular



Crescimento Lento

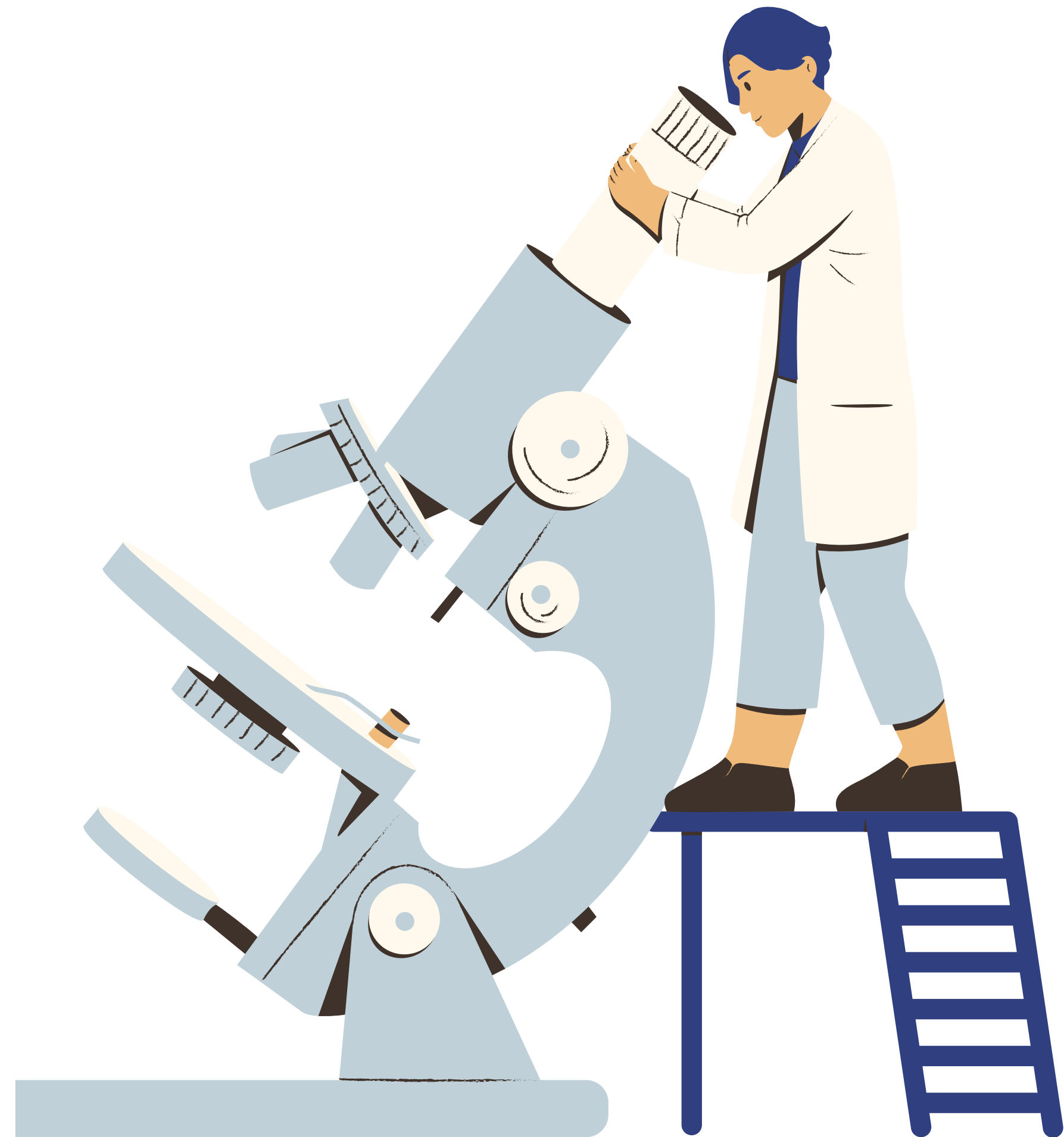
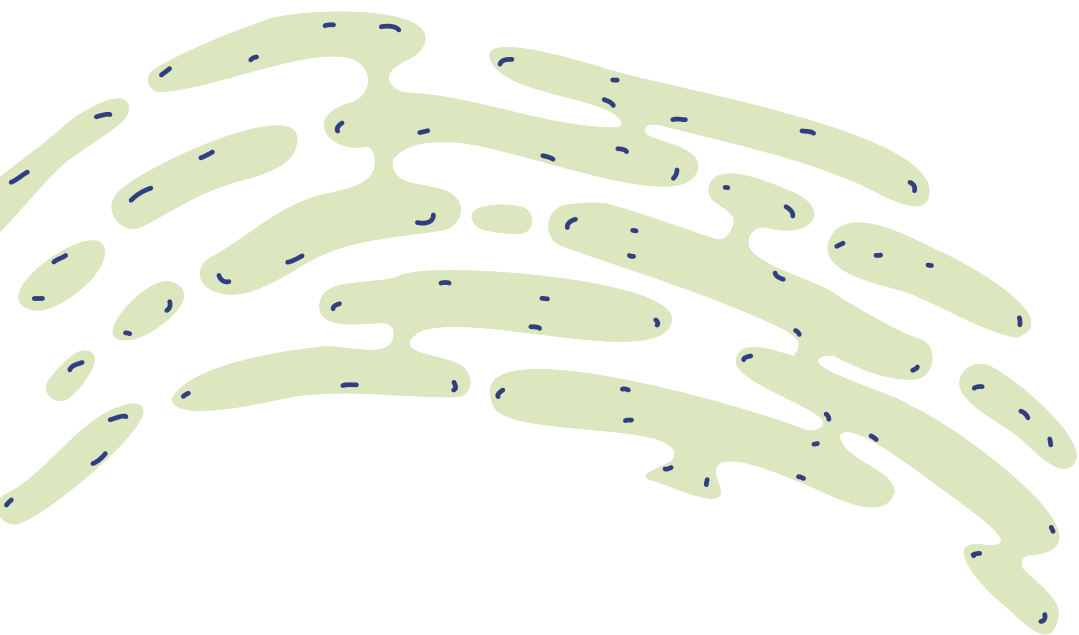


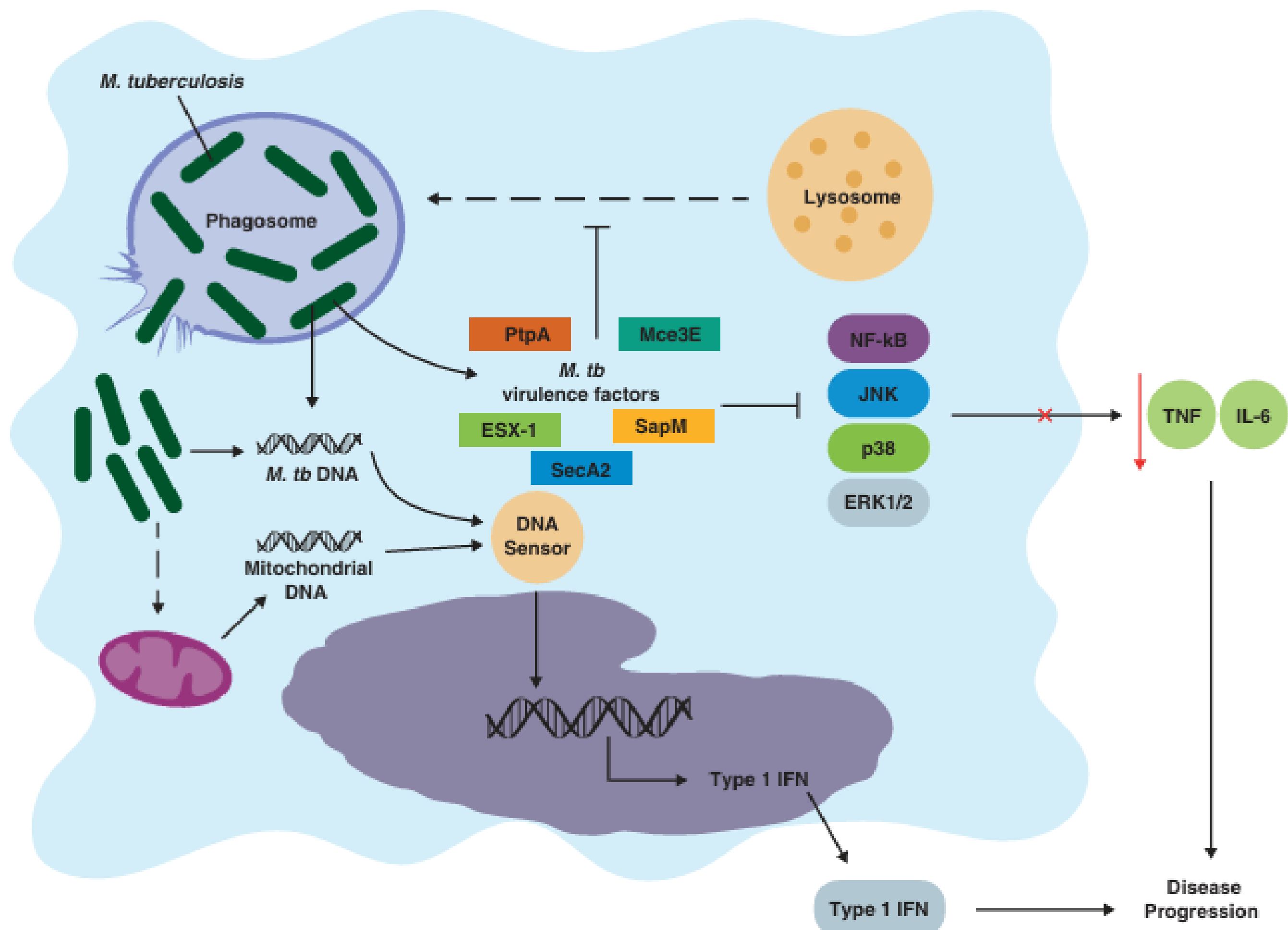
# História *natural*

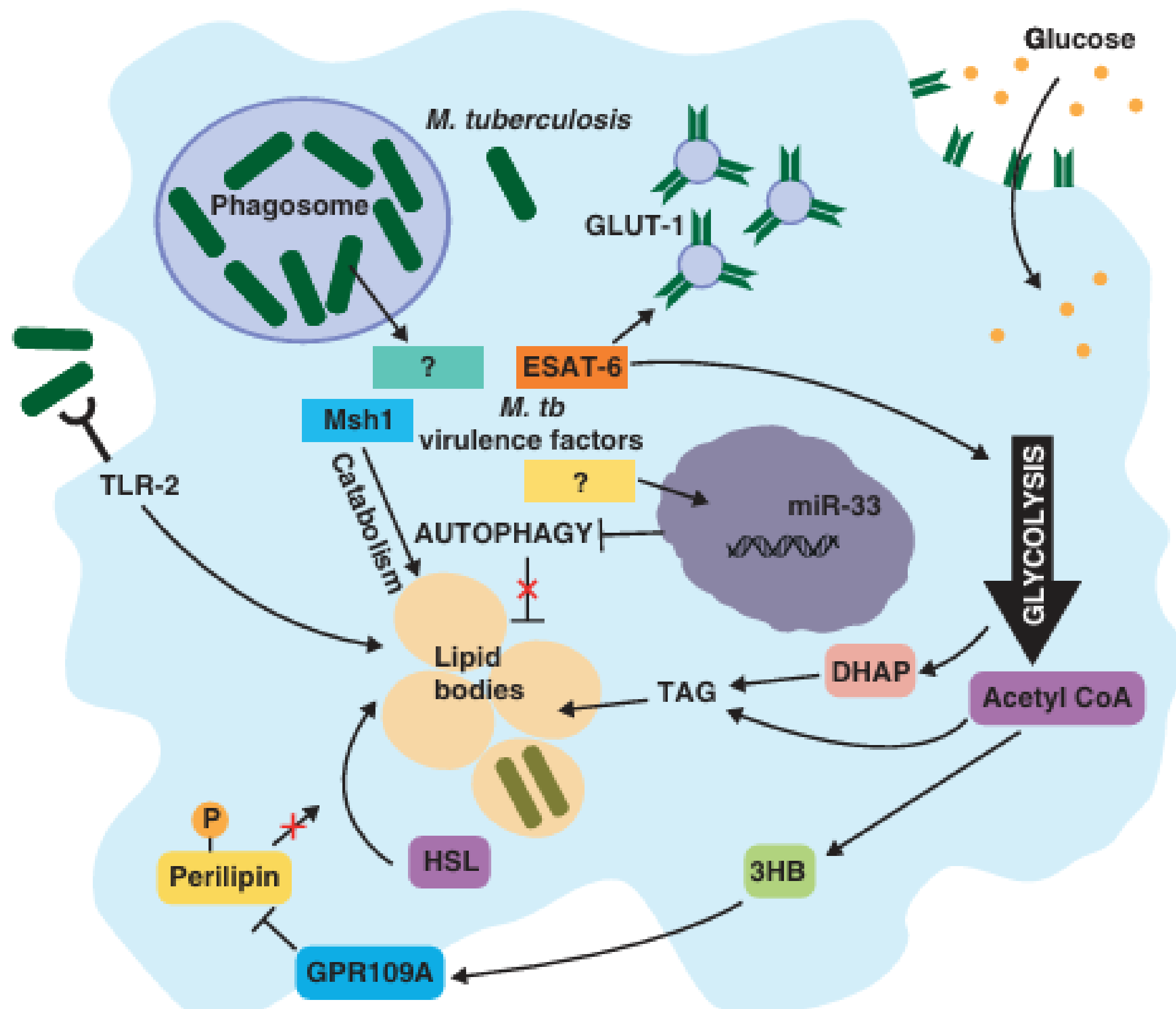


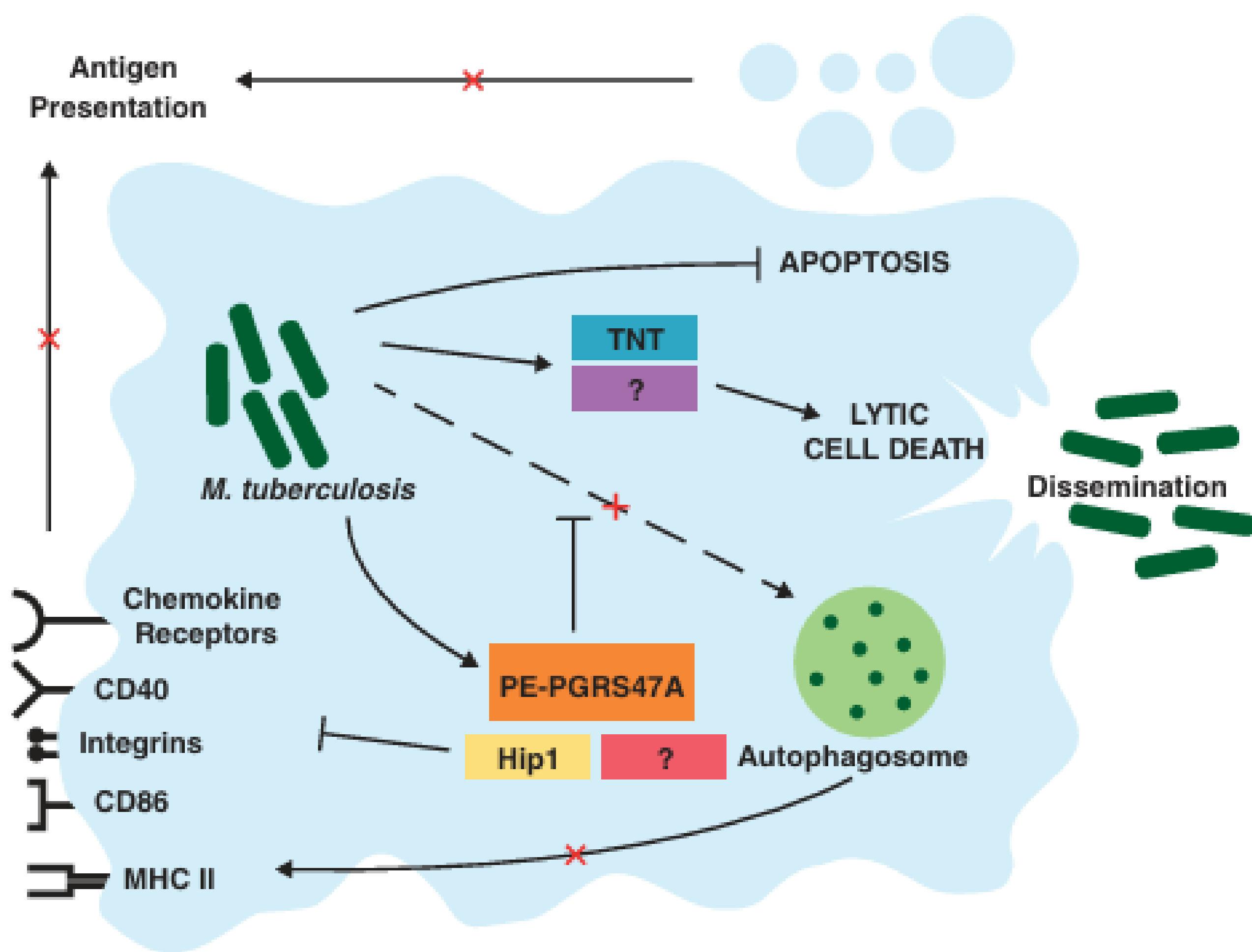


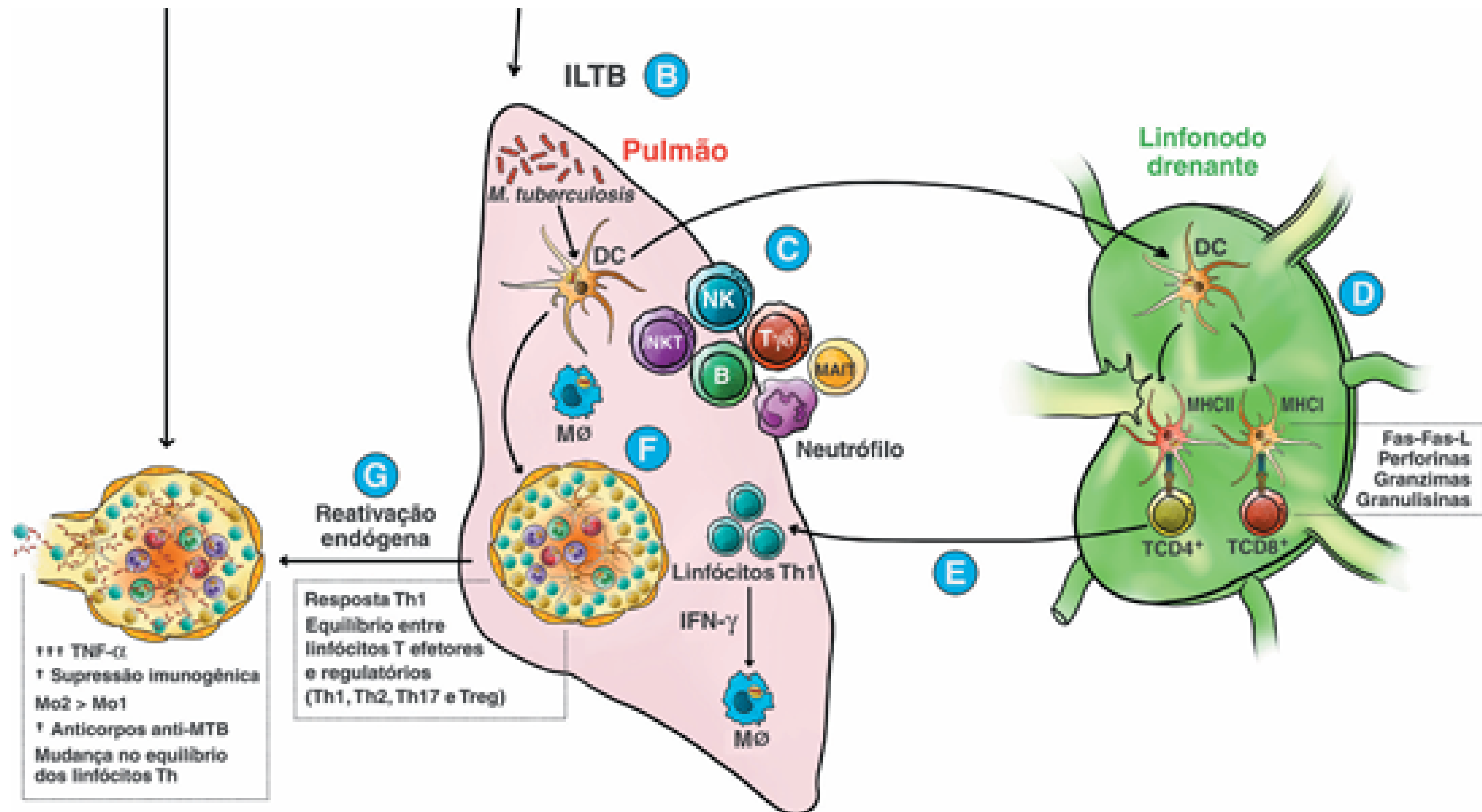
# Fisiopatologia



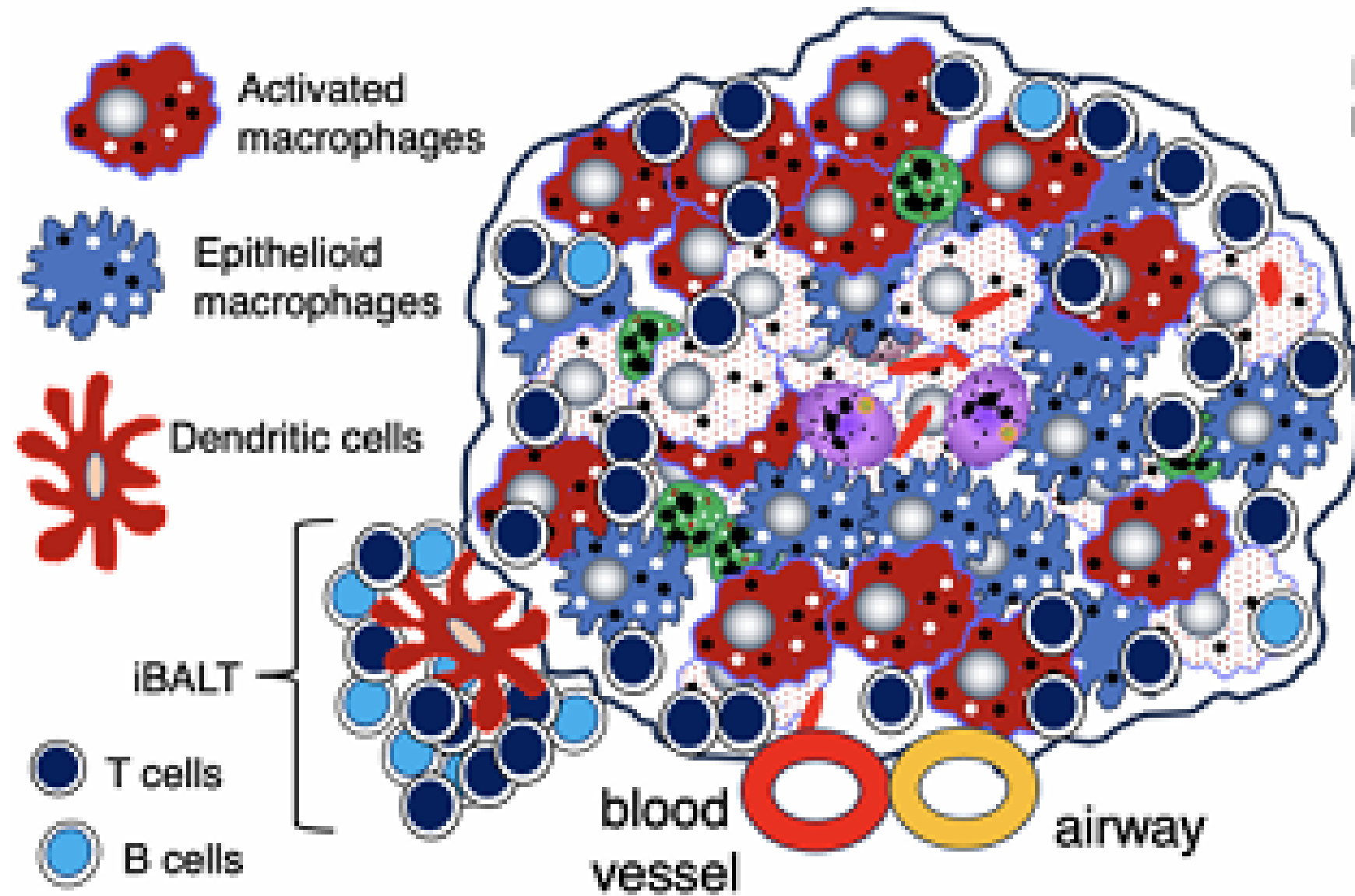








### A) Non-necrotic human TB granuloma



### B) Central necrosis of human TB granuloma

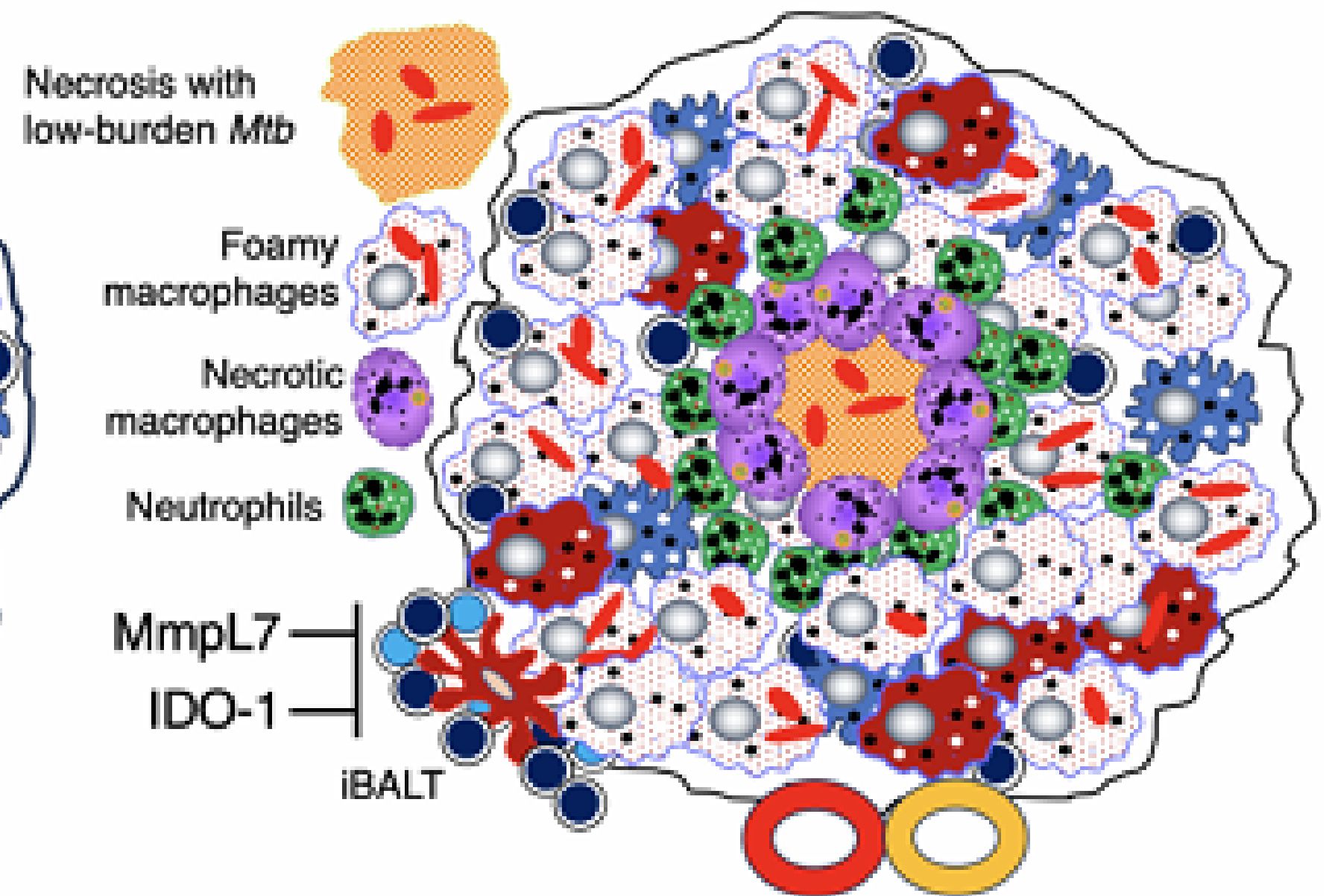
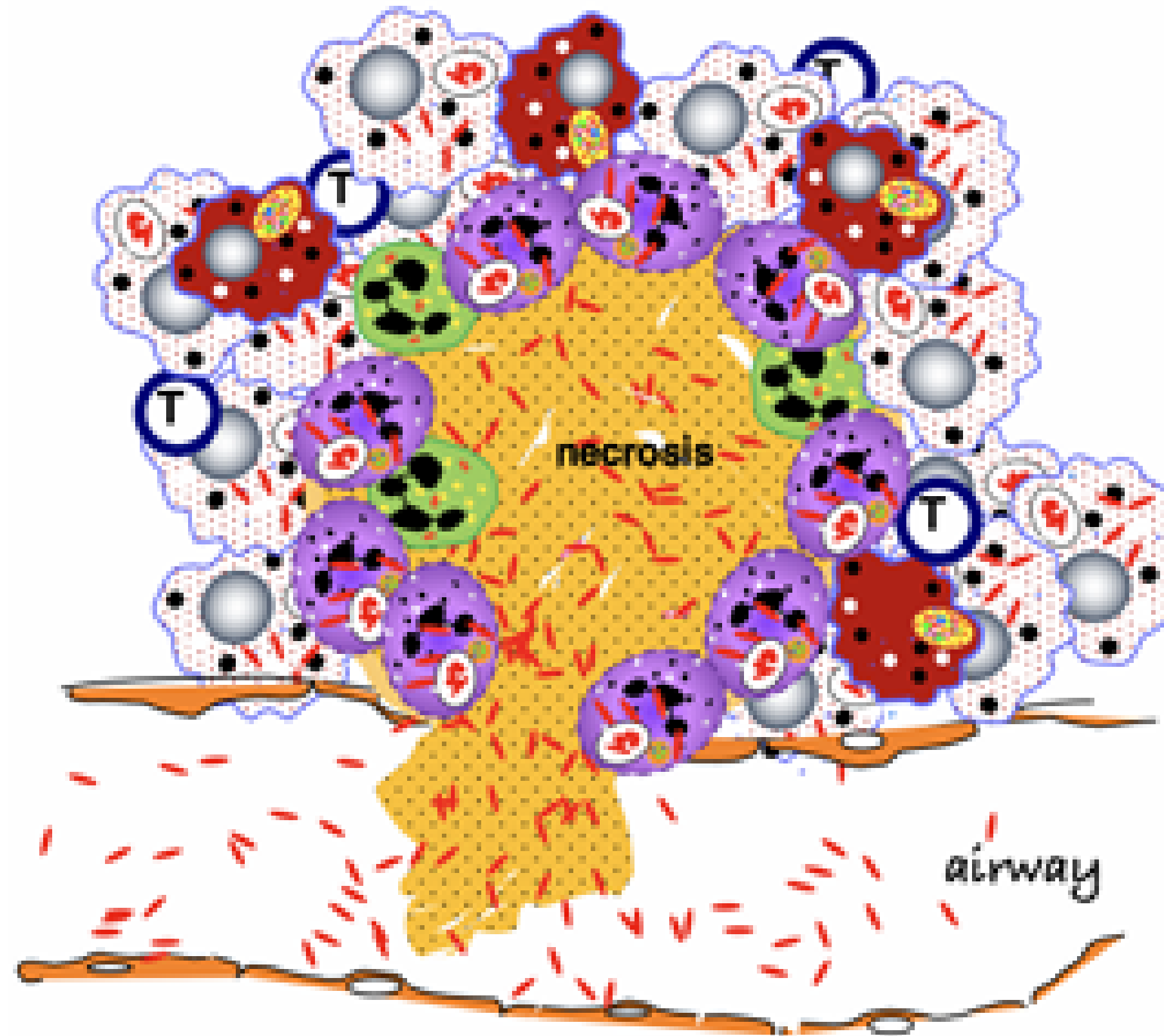


FIGURE 1

A) *Mtb* originates from granulomas





# Manifestações clínicas

# Por faixa etária

Tuberculose  
Congênita

1 - 2 meses

5 - 10 anos

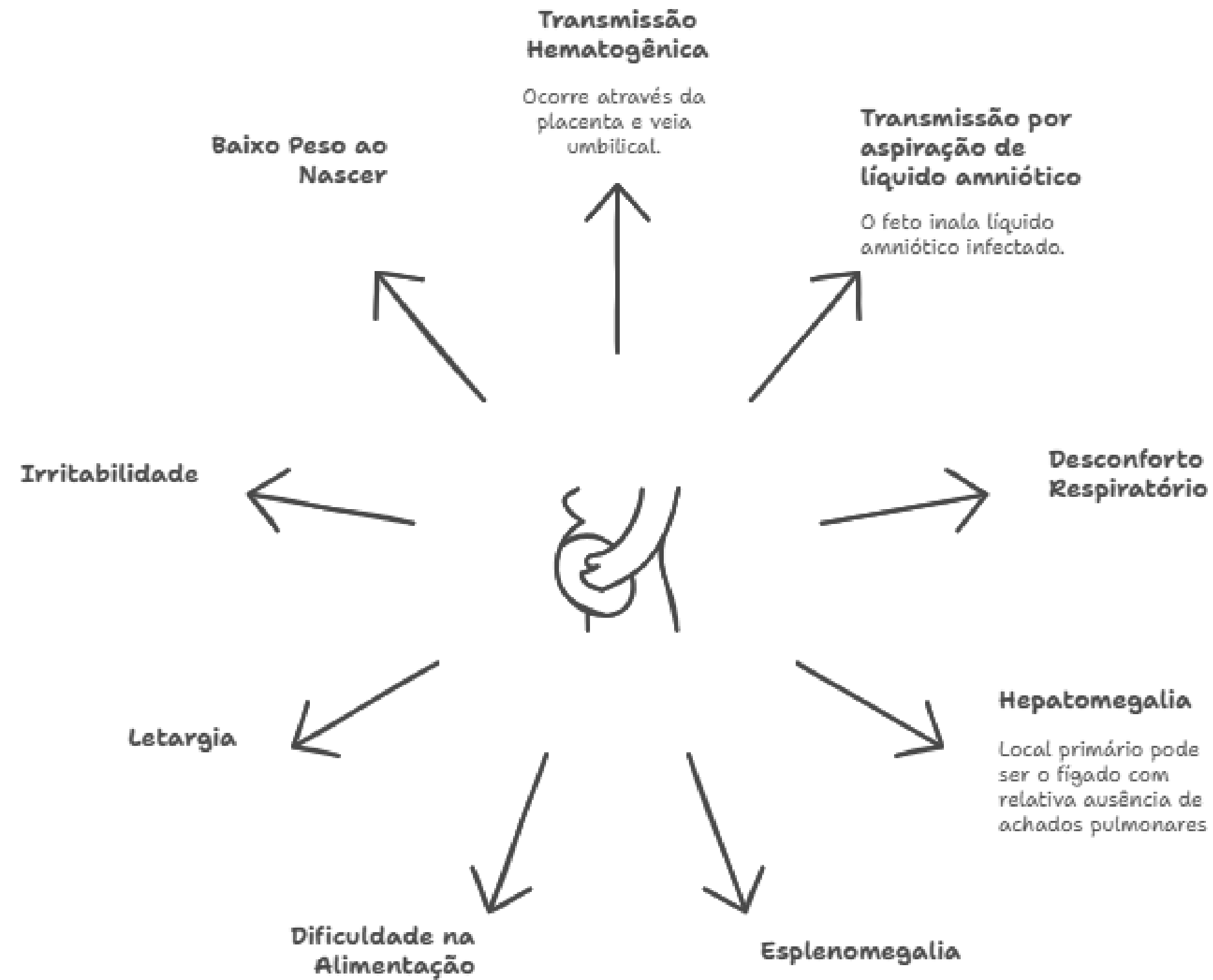


Tuberculose  
neonatal

1 - 5 anos

10 - 17 anos

# Tuberculose Congênita

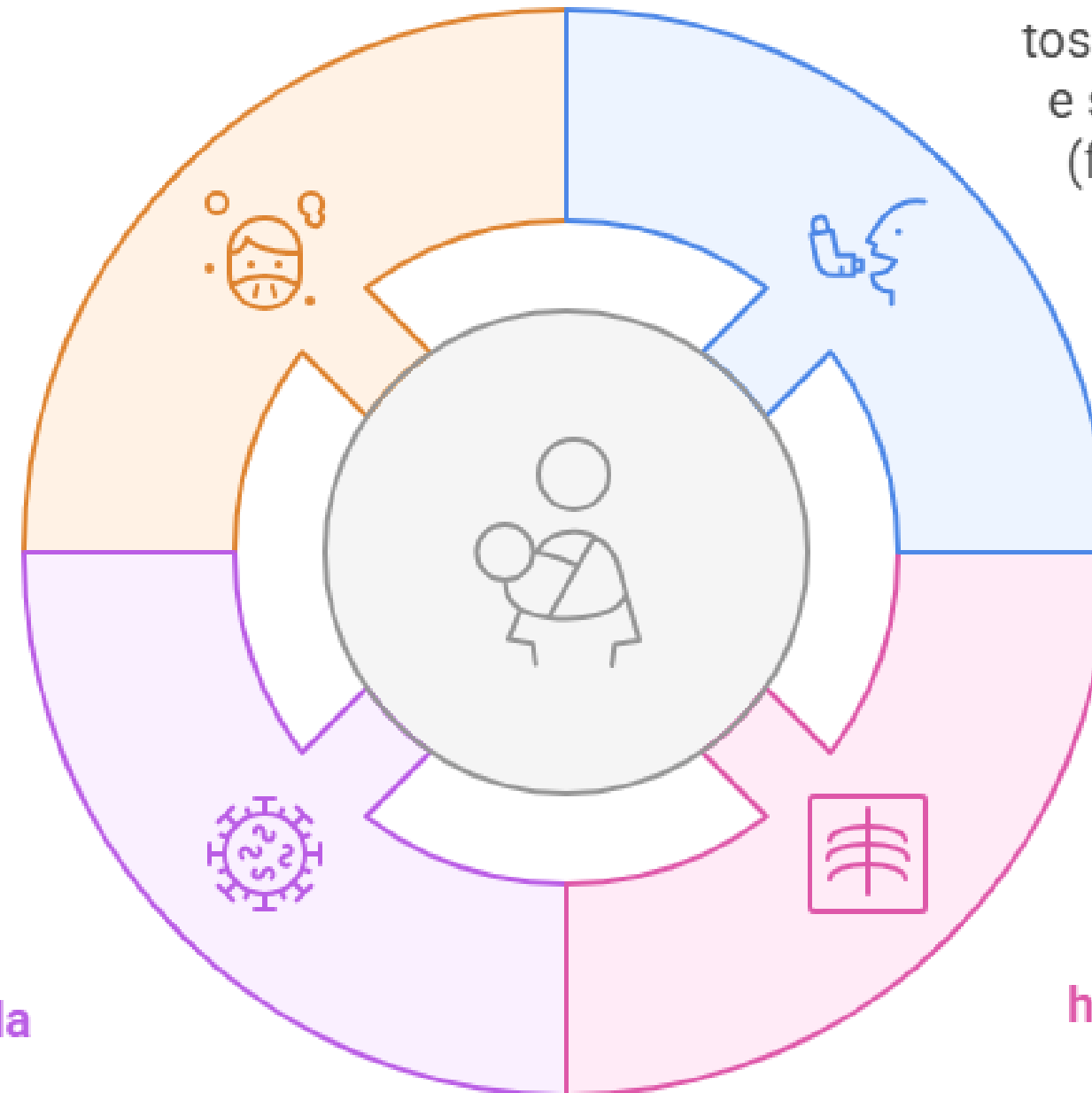


< 1 ano

**Maior probabilidade de  
progredir para doença**

**Doença Pulmonar**

tosse persistente, chieira  
e sintomas sistêmicos  
(febre, dificuldade de  
ganho de peso)

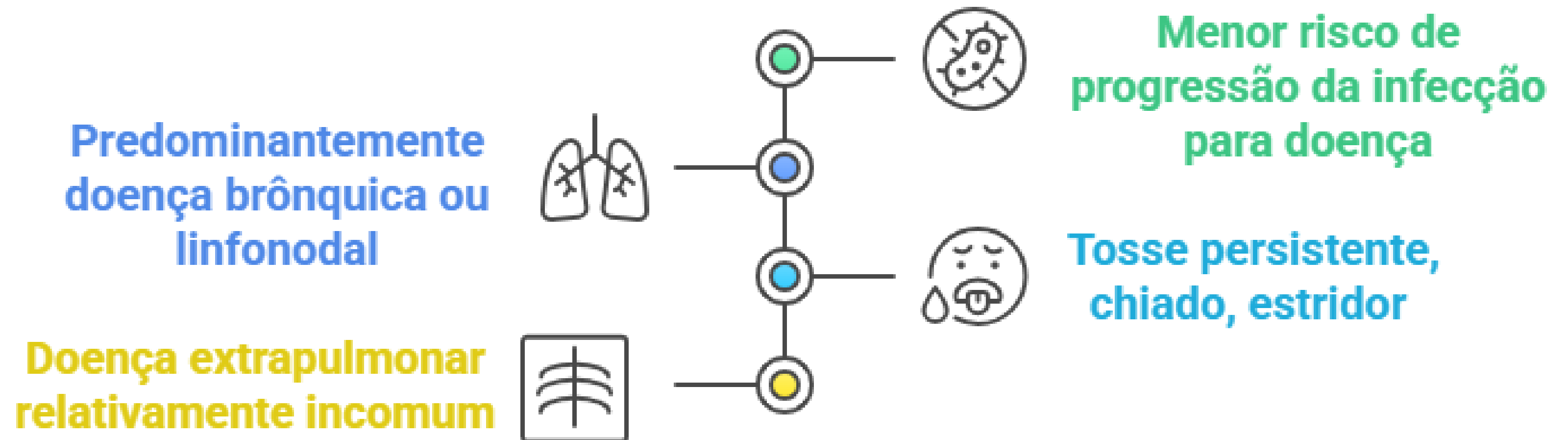


**Doença  
disseminada**

Maior risco de  
meningite tuberculosa

**Linfadenopatia  
hilar e mediastinal**

## 1 - 5 anos



## 5 - 10 Anos



# 10 - 17 anos

## Sintomas semelhantes ao adulto

Criança se torna bacilífera (principalmente >15 anos)

## TB pulmonar é a mais frequente

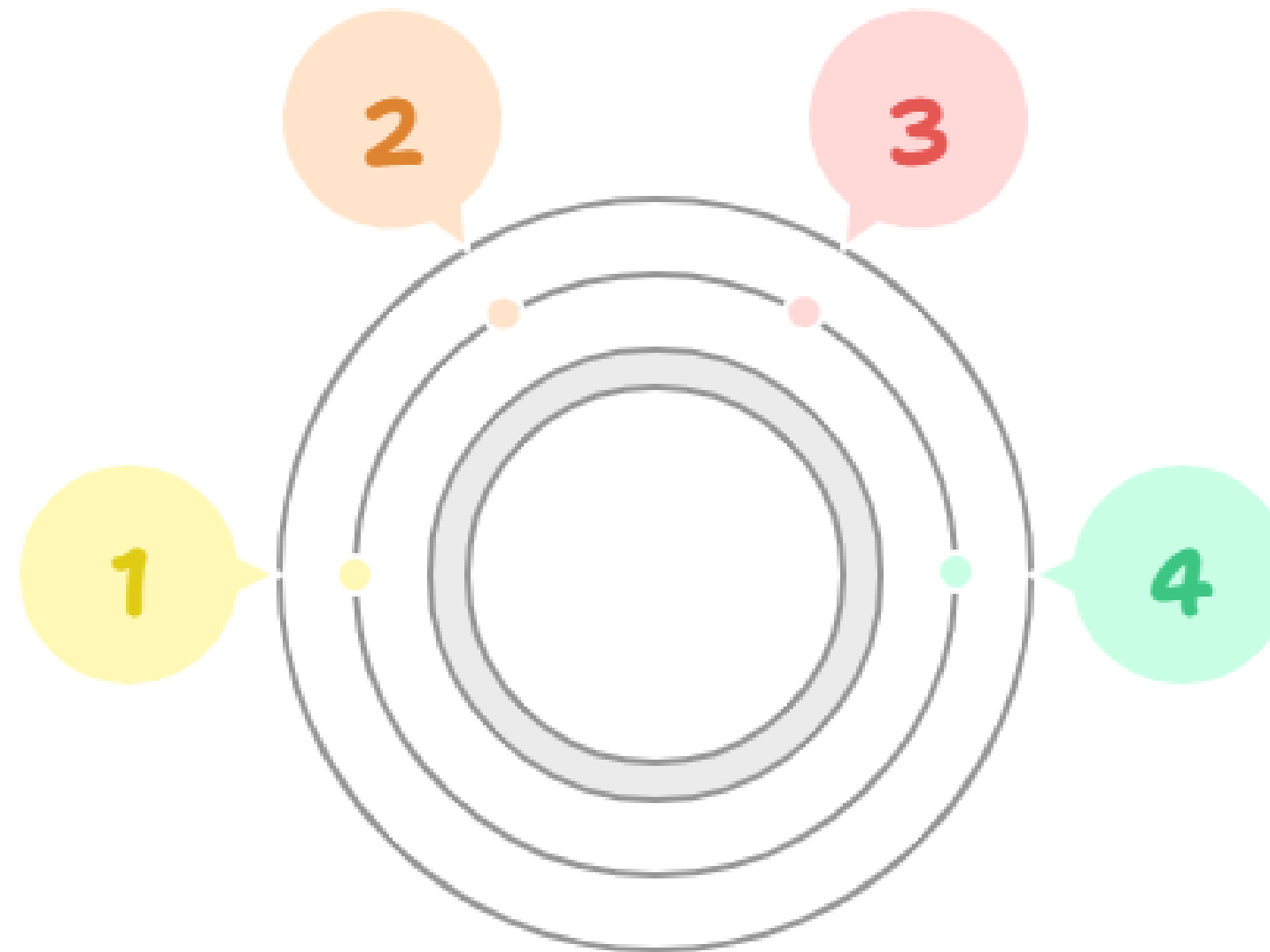
Tosse, febre, perda de peso, sudorese noturna

## Achados radiológicos

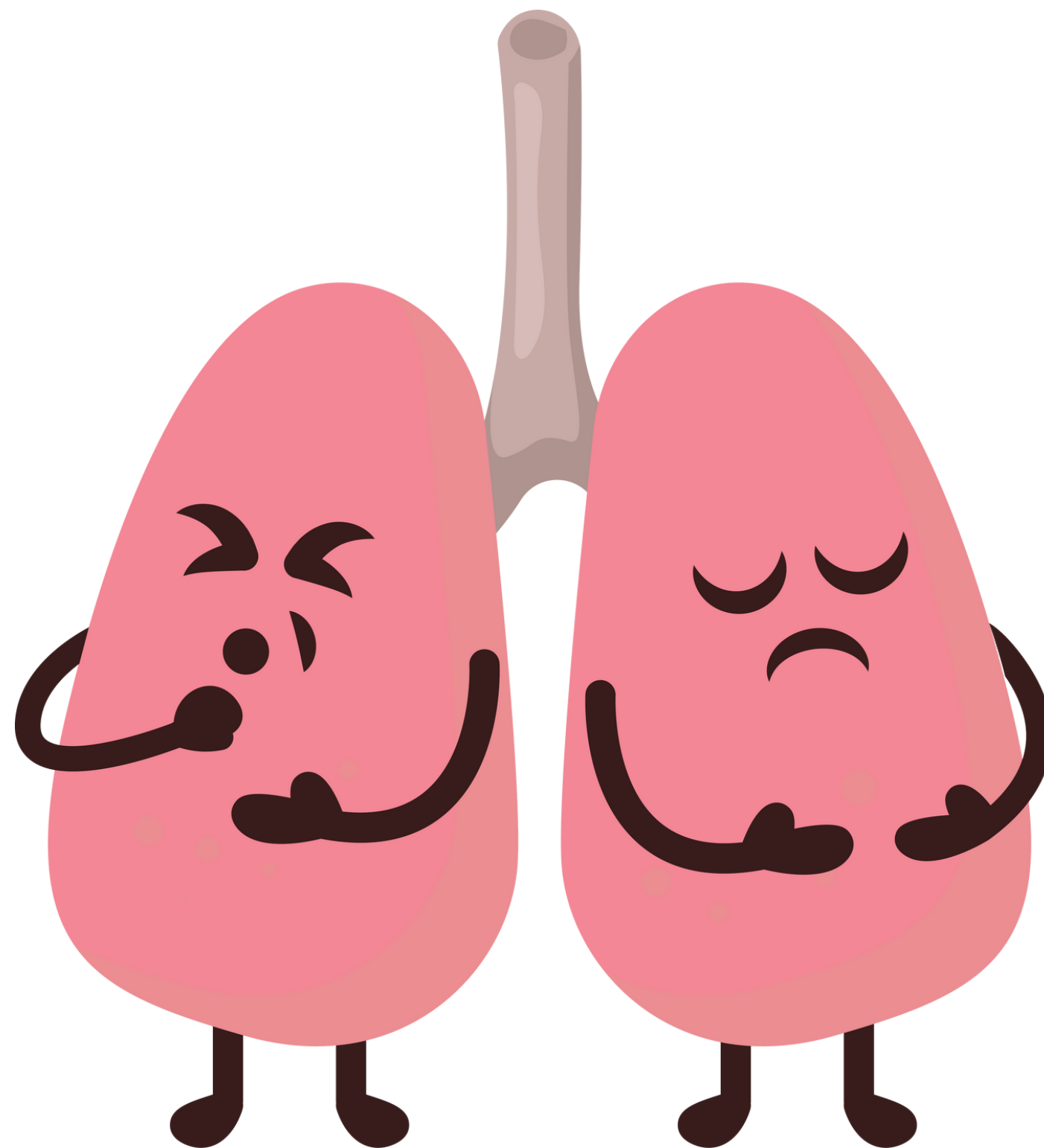
Infiltrações, linfadenopatia mediastinal e lesões cavitárias

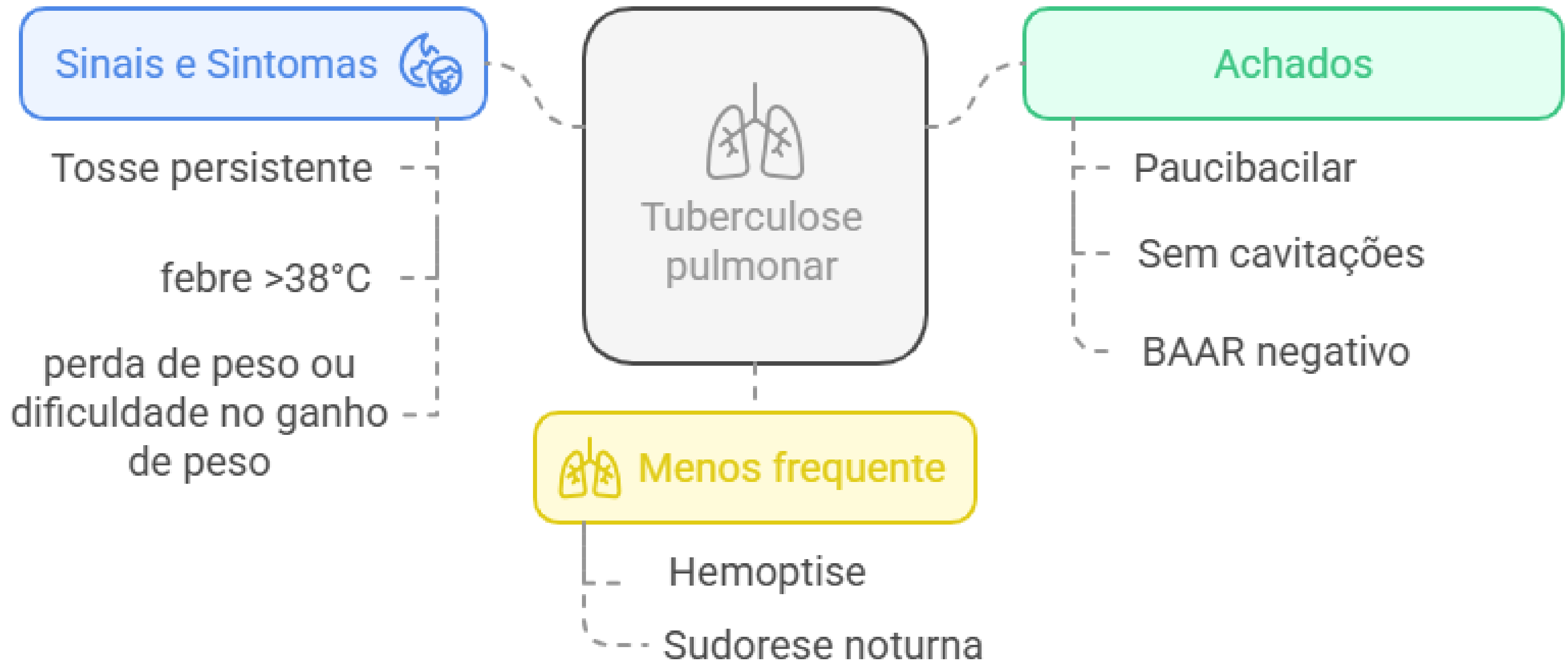
## TB Extratorácica

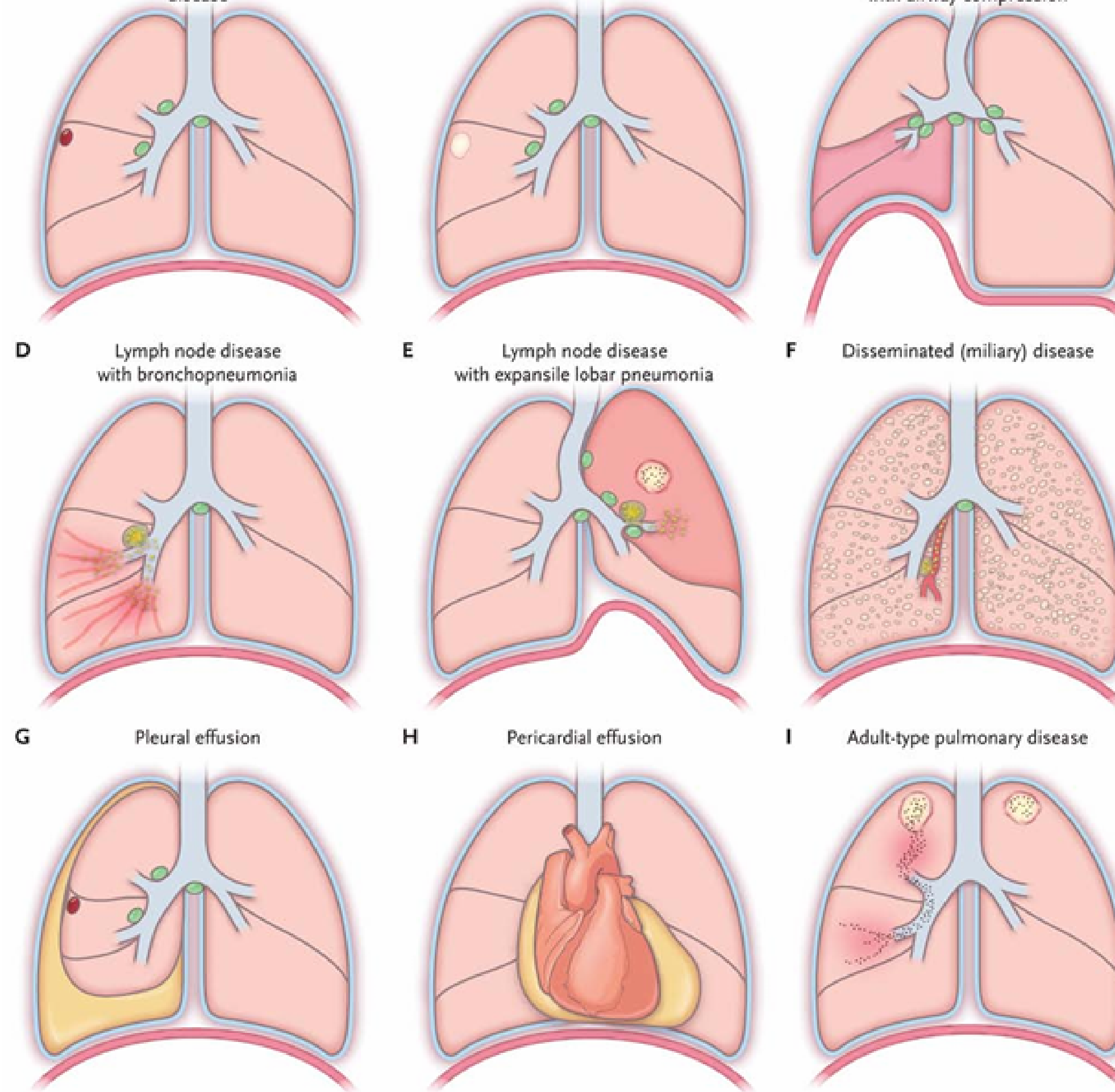
Linfadenopatia periférica e meningite



# Manifestações pulmonares









### **Tuberculose do SNC**

Alteração do  
estado mental,  
paralisias de  
nervos cranianos,  
cefaleia, vômitos  
ou convulsões



### **Adenite tuberculosa**

Linfonodos  
aumentados, fixos  
e indolores,  
especialmente na  
região cervical,  
com ou sem  
formação de  
fístula



### **Tuberculose pleural**

Derrame pleural



### **Tuberculose pericárdica**

Derrame  
pericárdico



### **Tuberculose abdominal**

Abdômen distendido  
com ascite, dor  
abdominal, icterícia  
ou diarreia crônica  
inexplicada



### **Tuberculose urogenital**

Piúria estéril,  
hematúria;  
endometrite  
tuberculosa  
materna



### **Artrite tuberculosa**

Derrame articular  
indolor



### **Tuberculose vertebral**

lombalgia, doença  
de Pott,  
osteomielite



### **Tuberculose cutânea**

Lesões verrucosas,  
papulonecroticas,  
lúpus vulgar



### **Tuberculose ocular**

Iridociclite, neurite  
óptica, conjuntivite  
flictenular



### **Tuberculose miliar**

Disseminação  
hematogênica

# PEDIATRICS®

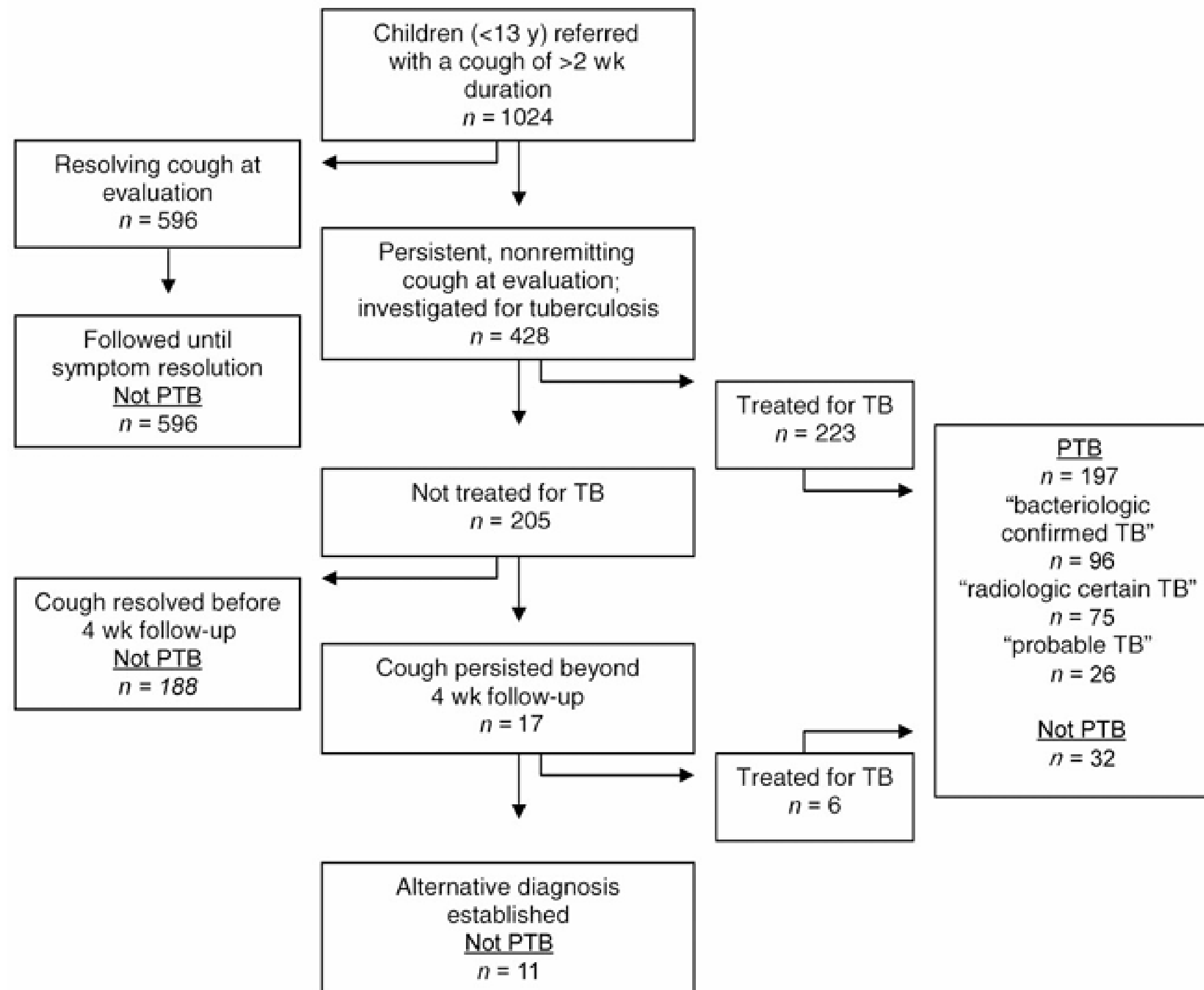
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

## A Refined Symptom-Based Approach to Diagnose Pulmonary Tuberculosis in Children

Ben J. Marais, MRCP, FCP, MMed, PhD<sup>a</sup>, Robert P. Gie, FCP<sup>a</sup>, Anneke C. Hesseling, MBChB, MSc<sup>a</sup>, H. Simon Schaaf, MMed, MD<sup>a</sup>, Carl Lombard, PhD<sup>b</sup>, Donald A. Enarson, MD, PhD<sup>c</sup>, Nulda Beyers, FCP, MSc, PhD<sup>a</sup>

<sup>a</sup>Desmond Tutu Tuberculosis Centre and Department of Paediatrics and Child Health, Tygerberg Children's Hospital, Stellenbosch University, Cape Town, South Africa;

<sup>b</sup>Medical Research Council of South Africa, Cape Town, South Africa; <sup>c</sup>International Union Against Tuberculosis and Lung Disease, Paris, France



| Individual Variables<br>at Presentation <sup>a</sup> | Low Risk            |             |      | High Risk           |             |      |              |             |      |
|------------------------------------------------------|---------------------|-------------|------|---------------------|-------------|------|--------------|-------------|------|
|                                                      | HIV Uninfected ≥3 y |             |      | HIV Uninfected <3 y |             |      | HIV Infected |             |      |
|                                                      | Sensitivity         | Specificity | PPV  | Sensitivity         | Specificity | PPV  | Sensitivity  | Specificity | PPV  |
| Cough ≥3 wk                                          | 90.7                | 65.7        | 33.8 | 80.9                | 58.1        | 33.5 | 100          | 45.0        | 60.7 |
| Cough ≥4 wk                                          | 73.3                | 90.1        | 58.9 | 59.6                | 89.9        | 60.2 | 88.2         | 65.0        | 68.2 |
| Chest pain                                           | 9.3                 | 96.9        | 36.4 | 3.2                 | 99.7        | 75.0 | 0            | 95.0        | 0    |
| Hemoptysis                                           | 5.8                 | 98.1        | 38.4 | 1.1                 | 100         | 100  | 0            | 95.0        | 0    |
| Respiratory distress                                 | 4.7                 | 99.1        | 50.0 | 8.5                 | 94.9        | 30.8 | 35.3         | 60.6        | 42.8 |
| Fever                                                | 37.2                | 92.4        | 48.5 | 43.6                | 89.9        | 52.6 | 52.9         | 30.0        | 39.1 |
| Night sweats                                         | 57.0                | 93.9        | 64.5 | 40.4                | 95.2        | 70.3 | 41.2         | 60.0        | 46.7 |
| Fatigue                                              | 94.2                | 87.0        | 58.3 | 68.1                | 95.5        | 78.0 | 94.1         | 30.0        | 53.3 |
| Weight loss subjective                               | 70.9                | 84.8        | 47.3 | 60.6                | 91.9        | 65.5 | 88.2         | 30.0        | 51.7 |
| Weight loss objective                                | 82.4                | 84.4        | 75.0 | 75.3                | 79.1        | 82.1 | 82.3         | 35.0        | 51.9 |
| TST positive                                         | 89.3                | 62.9        | 59.1 | 81.9                | 70.1        | 77.7 | 17.6         | 85.0        | 50.0 |
| Household contact                                    | 48.8                | 72.3        | 52.5 | 69.1                | 53.6        | 67.0 | 52.9         | 60.0        | 52.9 |

# Obrigada!

