

Respiratory Infections: Introduction

Respiratory Infections

1. Introduction

Definition

- Infectious diseases affecting the **respiratory tract** (upper or lower)
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Key Concepts

Mode of Spread

- **Airborne transmission**
 - Infection spreads via **droplet nuclei** (<5 μm)
 - Remain suspended in air for long duration
 - Travel long distances
 - **Droplet transmission**
 - Spread via **respiratory droplets** (>5 μm)
 - Travel short distance (~1 meter)
 - Settle quickly
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Public Health Importance

- Major cause of:
 - **Morbidity** (common infections like URTI, influenza)
 - **Mortality** (pneumonia, TB, COVID-19)
 - **High transmission potential**
 - Especially in **crowded settings**
 - Seasonal outbreaks common
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? Flowchart: Modes of Transmission (VERY IMPORTANT)

Respiratory Infection Transmission

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??? Airborne

- ? • Droplet nuclei ($<5 \mu\text{m}$)
- ? • Long-distance spread
- ? • Remains suspended
- ? • Examples ? TB, Measles

?

??? Droplet

- Larger droplets ($>5 \mu\text{m}$)
 - Short-distance ($\sim 1 \text{ m}$)
 - Settle quickly
 - Examples ? Influenza, COVID-19
-

? Ultra High-Yield Points (NEET PG / MBBS)

- Airborne ? **long distance + suspended particles**
- Droplet ? **short distance + heavy particles**
- TB ? **classic airborne disease**
- Measles ? **most infectious airborne disease**
- Influenza ? **droplet spread**

? Common Respiratory Infections ?

List of Important Diseases

- Tuberculosis (TB) ?
- Diphtheria ?
- Pertussis
- Measles ?
- Influenza
- COVID-19

? Table: Disease vs Agent vs Transmission vs Vaccine (REVISION TABLE)

DISEASE	CAUSATIVE AGENT	MODE OF TRANSMISSION	VACCINE
Tuberculosis (TB)	<i>Mycobacterium tuberculosis</i>	Airborne	BCG
Diphtheria	<i>Corynebacterium diphtheriae</i>	Droplet	DPT / Pentavalent
Pertussis	<i>Bordetella pertussis</i>	Droplet	DPT / Pentavalent
Measles	Measles virus	Airborne	MR / MMR
Influenza	Influenza virus	Droplet	Influenza vaccine
COVID-19	SARS-CoV-2	Droplet / Airborne	COVID-19 vaccines

? Ultra High-Yield Points (NEET PG / MBBS)

- TB & Measles ? **Airborne (very important MCQ)**
- Diphtheria & Pertussis ? **Droplet spread**
- BCG ? **TB prevention (partial protection)**
- Pentavalent ? **Diphtheria + Pertussis + others**
- COVID-19 ? **Mixed transmission (droplet + airborne)**