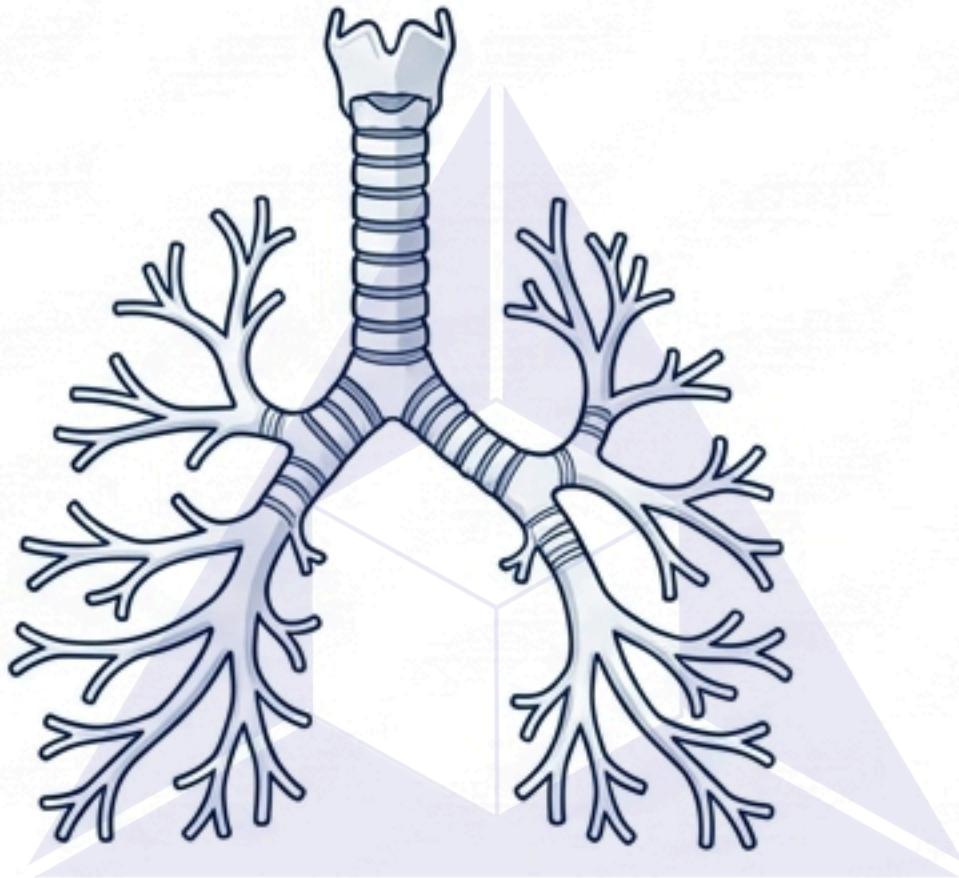


CHAPTER 14.6: HUMAN PHYSIOLOGY

Asthma and Emphysema Explained

A clinical overview of primary respiratory system disorders.

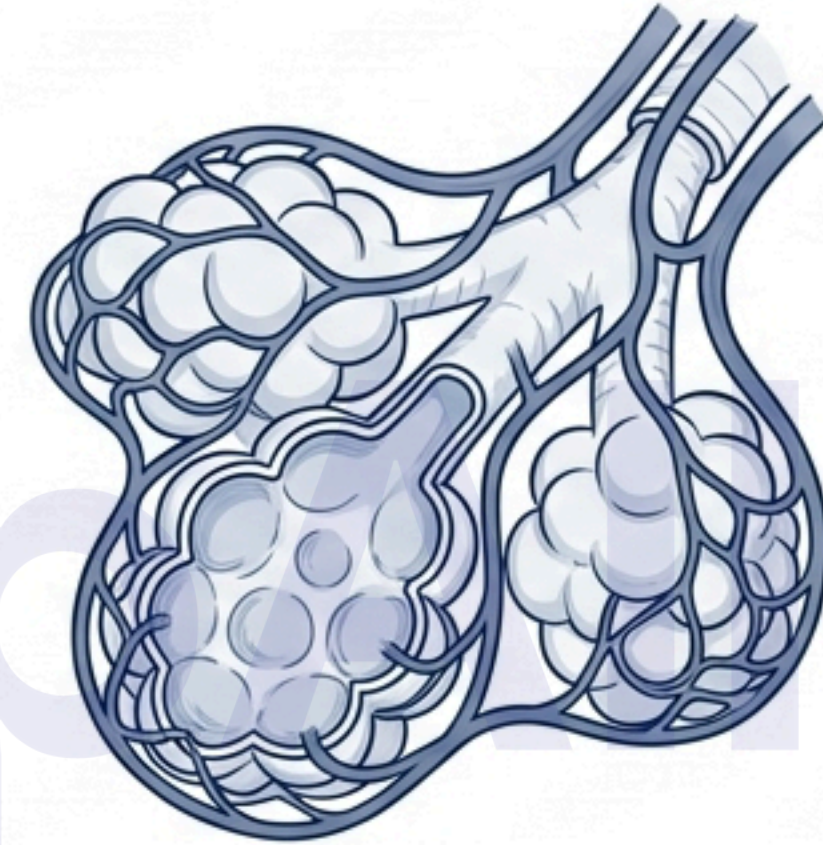
The Conducting Part



Transports atmospheric air to the alveoli. It clears out foreign particles, humidifies the air, and brings it to body temperature.

FOCUS: BRONCHI & BRONCHIOLES

The Exchange Part

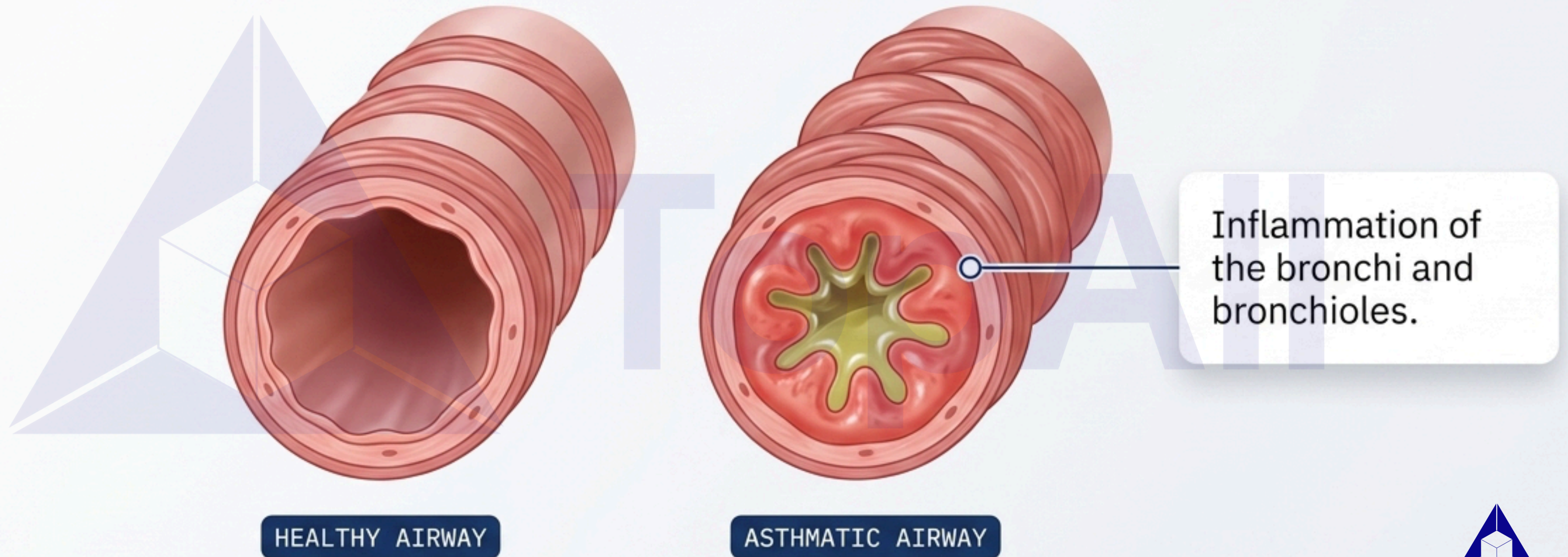


The site of actual diffusion of O_2 and CO_2 between blood and atmospheric air.

FOCUS: ALVEOLI

Asthma: Constriction of the Conduction Zone

AIRWAY_DIAMETER: COMPROMISED



Results in severe difficulty in breathing, characterized by distinct wheezing.



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$$E=mc^2$$



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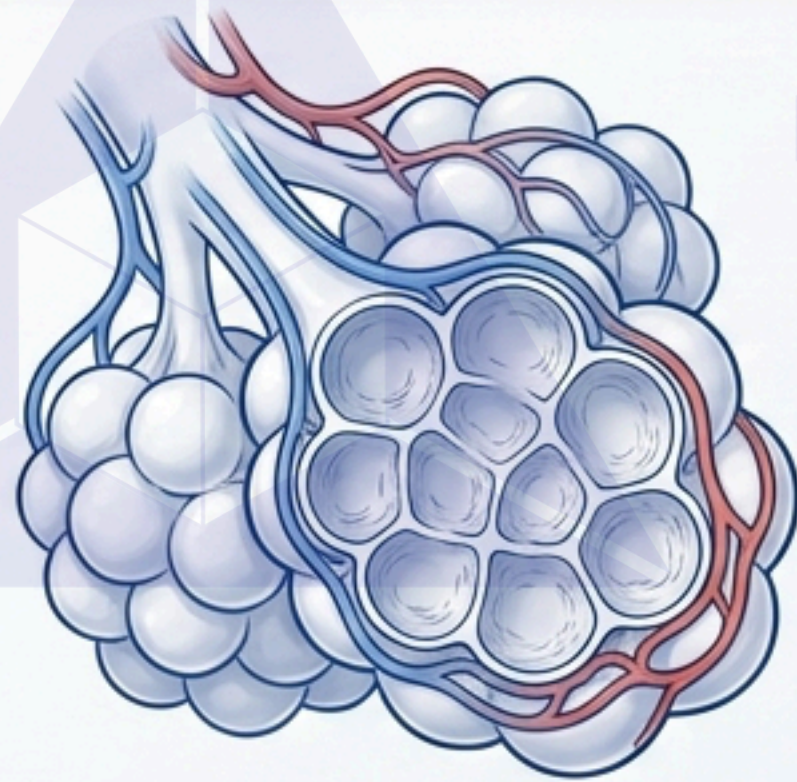
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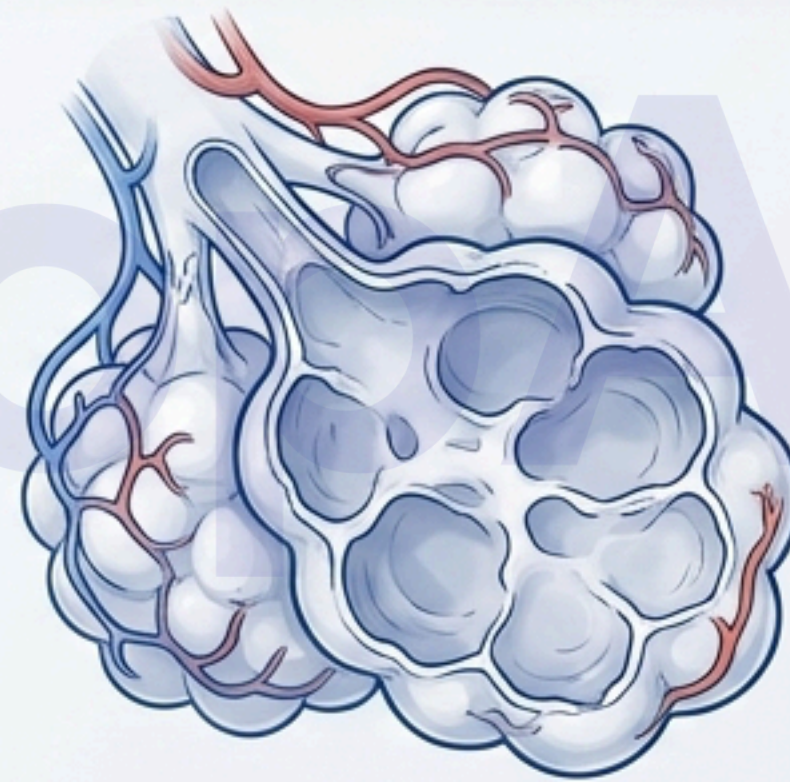


Emphysema: Destruction of the Exchange Surface

A chronic disorder where alveolar walls are permanently damaged, drastically decreasing the respiratory surface area necessary for gas exchange.



HEALTHY ALVEOLI



EMPHYSEMA



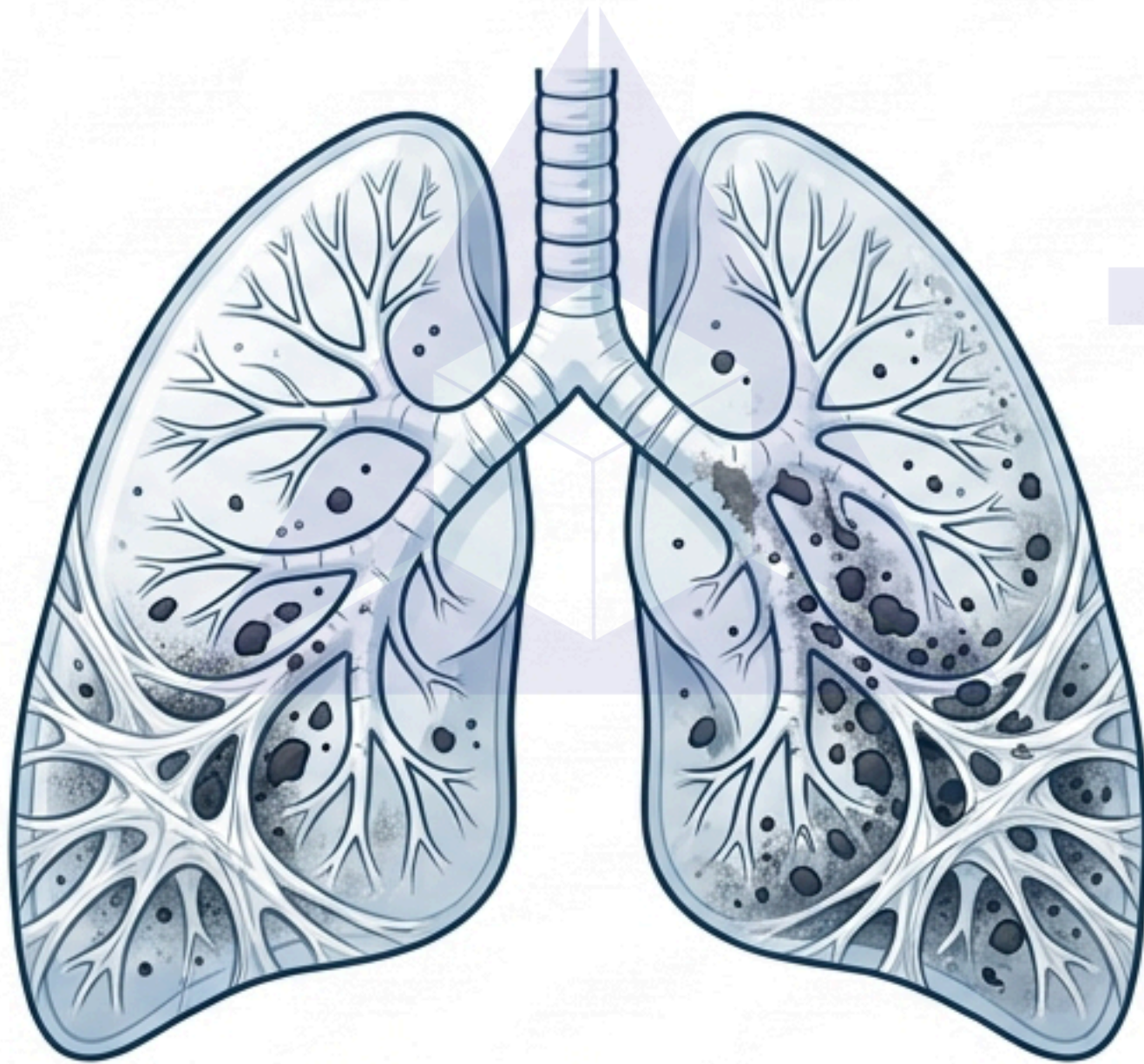
MAJOR CAUSE: Cigarette Smoking.

Chemical irritants progressively destroy the delicate alveolar structures.

The Diagnostic Matrix

	Asthma	Emphysema
TARGET_STRUCTURE	Bronchi and bronchioles	Alveolar walls
NATURE_OF_DISORDER	Inflammatory	Chronic structural damage
PRIMARY_CONSEQUENCE	Airflow obstruction & wheezing	Decreased respiratory surface area
PRIMARY_TRIGGERS	Allergens / Irritants	Cigarette smoking (Major cause)

Occupational Hazards & Fibrosis



In industries involving grinding or stone-breaking, excessive dust production overwhelms the body's defense mechanisms.

Long-term exposure gives rise to inflammation leading to fibrosis (proliferation of fibrous tissues), causing serious lung damage.

PROTECTIVE_MEASURE: MASK_REQUIRED

Key Takeaway

Respiratory efficiency relies on both clear **conducting airways** and **maximized alveolar surface area**. While **Asthma** restricts airflow pathways via inflammation, **Emphysema** chronically destroys the terminal exchange sites—most commonly due to avoidable triggers like cigarette smoking.

Protecting the respiratory environment—from smoke to industrial dust—is critical to maintaining lifelong pulmonary function.



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