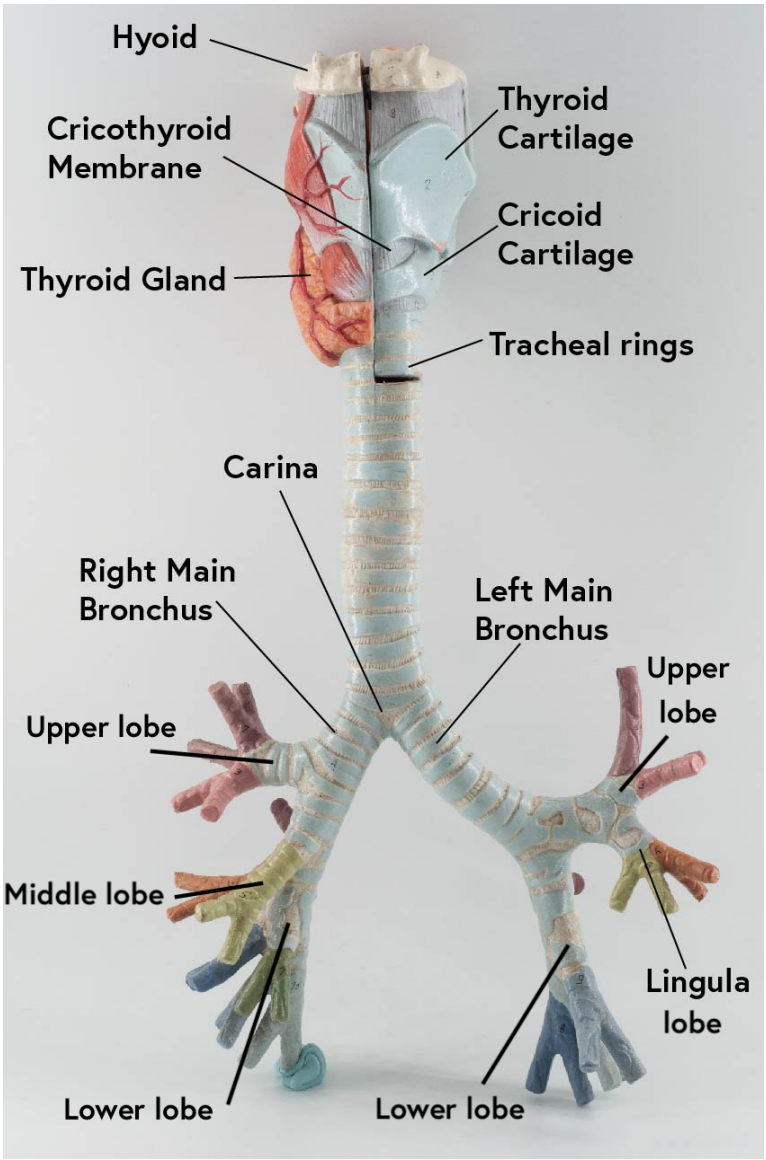
Anatomy of the Trachea and Bronchial Tree

The trachea and bronchial tree form a system of airways that allow the passage of air to the lungs to take place in gas exchange.



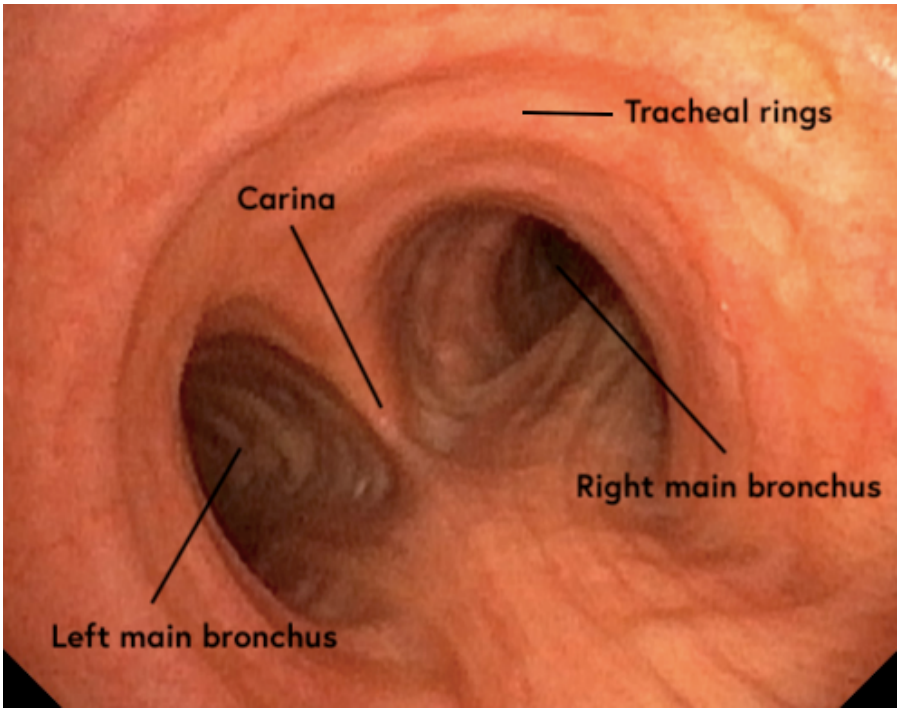
Larynx, Trachea and Bronchial Tree

The trachea is about 10cm long and extends from the level of the **6th cervical vertebrae** (at the cricoid cartilage) **to the 4th thoracic vertebrae**.

It is an elastic structure held open by incomplete **C-shaped cartilaginous tracheal rings** joined posteriorly by the **trachealis muscle.**

The trachea divides into the **right** and **left main bronchi** at the **carina** which is at the level of the 5th thoracic vertebrae.

The carina is the most sensitive area of the trachea for triggering the cough reflex.



Bronchoscopy view of the carina

The **right** and **left main bronchi** differ from each other.

The right is **shorter** (only 3cm in length before it gives off the bronchus to the right upper lobe), **wider** and more **vertical**.

The left is **longer** (5cm), **narrower** and more **horizontal.**

This means that inhaled foreign bodies are more likely to enter the right main bronchus. It also means that it is easier to place a double lumen tube into the left main bronchus rather than the right where the upper lobe can easily be obstructed.

The right and left main bronchi undergo further branching to produce **secondary bronchi**. Each secondary bronchi supplies a **lobe** of the lung. The right lung has **3 lobes** and the left lung has **2 lobes**.

The lobar bronchi then give rise to several **segmental bronchi** each of which supplies a **bronchopulmonary segment**. Bronchopulmonary segments consist of numerous smaller airways, the **bronchioles**, which make up the functional units of the lungs.