

# RESPIRATORY ZONE ANATOMY

[ DIAGRAM: TERMINAL BRONCHIOLE → RESPIRATORY BRONCHIOLE → ALVEOLAR DUCT → ALVEOLI ]

<b>Respiratory Bronchioles</b>	Smallest airways of the respiratory zone; contain scattered alveoli in walls; transition point from conduction to gas exchange.
<b>Alveolar Ducts</b>	Straight passage-ways lined with smooth muscle and connective tissue; lead directly into alveolar sacs.
<b>Alveolar Sacs</b>	Clusters of individual alveoli sharing a common opening; resemble "bunches of grapes."
<b>Alveoli (Type I Cells)</b>	Simple squamous epithelial cells; comprise 95% of alveolar surface area; primary site for gas exchange.
<b>Alveoli (Type II Cells)</b>	Cuboidal epithelial cells; secrete pulmonary surfactant to reduce surface tension and prevent lung collapse.
<b>Blood-Air Barrier</b>	Fused basement membranes of alveolar epithelium and capillary endothelium; approx. 0.5 $\mu$ m thick.

## CLINICAL NOTES & OBSERVATIONS