

A&P Key Terms

22 The Respiratory System

Author: OpenStax College

Published 2015

Create, Share, and Discover Online Quizzes.

QuizOver.com is an intuitive and powerful online quiz creator. [learn more](#)

Join QuizOver.com



How to Analyze Stocks

By Yasser Ibrahim

1 month ago
12 Responses

© iStock: Thomson Moter



Pre Employment English

By Katharina Jennifer N

5 months ago
19 Responses

© iStock: Albin



Lean Startup Quiz

By Yasser Ibrahim

2 months ago
16 Responses

© iStock: Gekwini Okun

Powered by QuizOver.com

The Leading Online Quiz & Exam Creator

Create, Share and Discover Quizzes & Exams

<http://www.quizover.com>

Disclaimer

All services and content of QuizOver.com are provided under QuizOver.com terms of use on an "as is" basis, without warranty of any kind, either expressed or implied, including, without limitation, warranties that the provided services and content are free of defects, merchantable, fit for a particular purpose or non-infringing.

The entire risk as to the quality and performance of the provided services and content is with you.

In no event shall QuizOver.com be liable for any damages whatsoever arising out of or in connection with the use or performance of the services.

Should any provided services and content prove defective in any respect, you (not the initial developer, author or any other contributor) assume the cost of any necessary servicing, repair or correction.

This disclaimer of warranty constitutes an essential part of these "terms of use".

No use of any services and content of QuizOver.com is authorized hereunder except under this disclaimer.

The detailed and up to date "terms of use" of QuizOver.com can be found under:

<http://www.QuizOver.com/public/termsOfUse.xhtml>

eBook Content License

Human Body OpenStax College. Anatomy & Physiology, Download for free at <http://cnx.org/contents/14fb4ad7-39a1-4eee-ab6e-3ef2482e3e22@7.25>

Creative Commons License

Attribution-NonCommercial-NoDerivs 3.0 Unported (CC BY-NC-ND 3.0)

<http://creativecommons.org/licenses/by-nc-nd/3.0/>

You are free to:

Share: copy and redistribute the material in any medium or format

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution: You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

NonCommercial: You may not use the material for commercial purposes.

NoDerivatives: If you remix, transform, or build upon the material, you may not distribute the modified material.

No additional restrictions: You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

4. Chapter: A&P Key Terms 22 The Respiratory System

1. A&P Key Terms 22 The Respiratory System Questions

acclimatization	process of adjustment that the respiratory system makes due to chronic exposure to high altitudes
acute mountain sickness	(AMS) condition that occurs a result of acute exposure to high altitude due to a low partial pressure of oxygen
ala	(plural: alae) small, flaring structure of a nostril that forms the lateral side of the nares
alar cartilage	cartilage that supports the apex of the nose and helps shape the nares; it is connected to the septal cartilage and connective tissue of the alae
alveolar dead space	air space within alveoli that are unable to participate in gas exchange
alveolar duct	small tube that leads from the terminal bronchiole to the respiratory bronchiole and is the point of attachment for alveoli
alveolar macrophage	immune system cell of the alveolus that removes debris and pathogens
alveolar pore	opening that allows airflow between neighboring alveoli
alveolar sac	cluster of alveoli
alveolus	small, grape-like sac that performs gas exchange in the lungs
anatomical dead space	air space present in the airway that never reaches the alveoli and therefore never participates in gas exchange
apex	tip of the external nose
apneustic center	network of neurons within the pons that stimulate the neurons in the dorsal respiratory group; controls the depth of inspiration
atmospheric pressure	amount of force that is exerted by gases in the air surrounding any given surface
Bohr effect	relationship between blood pH and oxygen dissociation from hemoglobin
Boyle's law	relationship between volume and pressure as described by the formula: $P_1V_1 = P_2V_2$
bridge	portion of the external nose that lies in the area of the nasal bones

	nasal bones
bronchial bud	structure in the developing embryo that forms when the laryngotracheal bud extends and branches to form two bulbous structures
bronchial tree	collective name for the multiple branches of the bronchi and bronchioles of the respiratory system
bronchiole	branch of bronchi that are 1 mm or less in diameter and terminate at alveolar sacs
bronchoconstriction	decrease in the size of the bronchiole due to contraction of the muscular wall
bronchodilation	increase in the size of the bronchiole due to contraction of the muscular wall
bronchus	tube connected to the trachea that branches into many subsidiaries and provides a passageway for air to enter and leave the lungs
carbaminohemoglobin	bound form of hemoglobin and carbon dioxide
carbonic anhydrase	(CA) enzyme that catalyzes the reaction that causes carbon dioxide and water to form carbonic acid
cardiac notch	indentation on the surface of the left lung that allows space for the heart
central chemoreceptor	one of the specialized receptors that are located in the brain that sense changes in hydrogen ion, oxygen, or carbon dioxide concentrations in the brain
chloride shift	facilitated diffusion that exchanges bicarbonate (HCO_3^-) with chloride (Cl^-) ions
conducting zone	region of the respiratory system that includes the organs and structures that provide passageways for air and are not directly involved in gas exchange
cricoid cartilage	portion of the larynx composed of a ring of cartilage with a wide posterior region and a thinner anterior region; attached to the esophagus
Dalton's law	statement of the principle that a specific gas type in a mixture exerts its own pressure, as if that specific gas type was not part of a mixture of gases
dorsal respiratory group	(DRG) region of the medulla oblongata that stimulates the contraction of the diaphragm and intercostal muscles to induce inspiration

<u>dorsum nasi</u>	intermediate portion of the external nose that connects the bridge to the apex and is supported by the nasal bone
<u>epiglottis</u>	leaf-shaped piece of elastic cartilage that is a portion of the larynx that swings to close the trachea during swallowing
<u>expiration</u>	(also, exhalation) process that causes the air to leave the lungs
<u>expiratory reserve volume</u>	(ERV) amount of air that can be forcefully exhaled after a normal tidal exhalation
<u>external nose</u>	region of the nose that is easily visible to others
<u>external respiration</u>	gas exchange that occurs in the alveoli
<u>fauces</u>	portion of the posterior oral cavity that connects the oral cavity to the oropharynx
<u>fibroelastic membrane</u>	specialized membrane that connects the ends of the C-shape cartilage in the trachea; contains smooth muscle fibers
<u>forced breathing</u>	(also, hyperpnea) mode of breathing that occurs during exercise or by active thought that requires muscle contraction for both inspiration and expiration
<u>foregut</u>	endoderm of the embryo towards the head region
<u>functional residual capacity</u>	(FRC) sum of ERV and RV, which is the amount of air that remains in the lungs after a tidal expiration
<u>glottis</u>	opening between the vocal folds through which air passes when producing speech
<u>Haldane effect</u>	relationship between the partial pressure of oxygen and the affinity of hemoglobin for carbon dioxide
<u>Henry's law</u>	statement of the principle that the concentration of gas in a liquid is directly proportional to the solubility and partial pressure of that gas
<u>hilum</u>	concave structure on the mediastinal surface of the lungs where blood vessels, lymphatic vessels, nerves, and a bronchus enter the lung
<u>hyperpnea</u>	increased rate and depth of ventilation due to an increase in oxygen demand that does not significantly alter blood oxygen or carbon dioxide levels

<u>hyperventilation</u>	increased ventilation rate that leads to abnormally low blood carbon dioxide levels and high (alkaline) blood pH
<u>inspiration</u>	(also, inhalation) process that causes air to enter the lungs
<u>inspiratory capacity</u>	(IC) sum of the TV and IRV, which is the amount of air that can maximally be inhaled past a tidal expiration
<u>inspiratory reserve volume</u>	(IRV) amount of air that enters the lungs due to deep inhalation past the tidal volume
<u>internal respiration</u>	gas exchange that occurs at the level of body tissues
<u>intra-alveolar pressure</u>	(intrapulmonary pressure) pressure of the air within the alveoli
<u>intrapleural pressure</u>	pressure of the air within the pleural cavity
<u>laryngeal prominence</u>	region where the two lamina of the thyroid cartilage join, forming a protrusion known as 'Adam's apple'
<u>laryngopharynx</u>	portion of the pharynx bordered by the oropharynx superiorly and esophagus and trachea inferiorly; serves as a route for both air and food
<u>laryngotracheal</u>	bud forms from the lung bud, has a tracheal end and bulbous bronchial buds at the distal end
<u>larynx</u>	cartilaginous structure that produces the voice, prevents food and beverages from entering the trachea, and regulates the volume of air that enters and leaves the lungs
<u>lingual tonsil</u>	lymphoid tissue located at the base of the tongue
<u>lung bud</u>	median dome that forms from the endoderm of the foregut
<u>lung</u>	organ of the respiratory system that performs gas exchange
<u>meatus</u>	one of three recesses (superior, middle, and inferior) in the nasal cavity attached to the conchae that increase the surface area of the nasal cavity
<u>naris</u>	(plural: nares) opening of the nostrils
<u>nasal bone</u>	bone of the skull that lies under the root and bridge of the nose and is connected to the frontal and maxillary bones

	maxillary bones
<u>nasal septum</u>	wall composed of bone and cartilage that separates the left and right nasal cavities
<u>nasopharynx</u>	portion of the pharynx flanked by the conchae and oropharynx that serves as an airway
<u>olfactory pit</u>	invaginated ectodermal tissue in the anterior portion of the head region of an embryo that will form the nasal cavity
<u>oropharynx</u>	portion of the pharynx flanked by the nasopharynx, oral cavity, and laryngopharynx that is a passageway for both air and food
<u>oxygen-hemoglobin dissociation curve</u>	graph that describes the relationship of partial pressure to the binding and disassociation of oxygen to and from heme
<u>oxyhemoglobin</u>	(Hb-O ₂) bound form of hemoglobin and oxygen
<u>palatine tonsil</u>	one of the paired structures composed of lymphoid tissue located anterior to the uvula at the roof of isthmus of the fauces
<u>paranasal sinus</u>	one of the cavities within the skull that is connected to the conchae that serve to warm and humidify incoming air, produce mucus, and lighten the weight of the skull; consists of frontal, maxillary, sphenoidal, and ethmoidal sinuses
<u>parietal pleura</u>	outermost layer of the pleura that connects to the thoracic wall, mediastinum, and diaphragm
<u>partial pressure</u>	force exerted by each gas in a mixture of gases
<u>peripheral chemoreceptor</u>	one of the specialized receptors located in the aortic arch and carotid arteries that sense changes in pH, carbon dioxide, or oxygen blood levels
<u>pharyngeal tonsil</u>	structure composed of lymphoid tissue located in the nasopharynx
<u>pharynx</u>	region of the conducting zone that forms a tube of skeletal muscle lined with respiratory epithelium; located between the nasal conchae and the esophagus and trachea
<u>philtrum</u>	concave surface of the face that connects the apex of the nose to the top lip

<u>pleural cavity</u>	space between the visceral and parietal pleurae
<u>pleural fluid</u>	substance that acts as a lubricant for the visceral and parietal layers of the pleura during the movement of breathing
<u>pneumotaxic center</u>	network of neurons within the pons that inhibit the activity of the neurons in the dorsal respiratory group; controls rate of breathing
<u>pulmonary artery</u>	artery that arises from the pulmonary trunk and carries deoxygenated, arterial blood to the alveoli
<u>pulmonary plexus</u>	network of autonomic nervous system fibers found near the hilum of the lung
<u>pulmonary surfactant</u>	substance composed of phospholipids and proteins that reduces the surface tension of the alveoli; made by type II alveolar cells
<u>pulmonary ventilation</u>	exchange of gases between the lungs and the atmosphere; breathing quiet breathing (also, eupnea) mode of breathing that occurs at rest and does not require the cognitive thought of the individual
<u>residual volume</u>	(RV) amount of air that remains in the lungs after maximum exhalation
<u>respiratory bronchiole</u>	specific type of bronchiole that leads to alveolar sacs
<u>respiratory cycle</u>	one sequence of inspiration and expiration
<u>respiratory epithelium</u>	ciliated lining of much of the conducting zone that is specialized to remove debris and pathogens, and produce mucus
<u>respiratory membrane</u>	alveolar and capillary wall together, which form an air-blood barrier that facilitates the simple diffusion of gases
<u>respiratory rate</u>	total number of breaths taken each minute
<u>respiratory volume</u>	varying amounts of air within the lung at a given time
<u>respiratory zone</u>	includes structures of the respiratory system that are directly involved in gas exchange
<u>root</u>	region of the external nose between the eyebrows
<u>thoracic wall compliance</u>	ability of the thoracic wall to stretch while under pressure

	pressure
<u>thyroid cartilage</u>	largest piece of cartilage that makes up the larynx and consists of two lamina
<u>tidal volume</u>	(TV) amount of air that normally enters the lungs during quiet breathing
<u>total dead space</u>	sum of the anatomical dead space and alveolar dead space
<u>total lung capacity</u>	(TLC) total amount of air that can be held in the lungs; sum of TV, ERV, IRV, and RV
<u>total pressure</u>	sum of all the partial pressures of a gaseous mixture
<u>trachealis muscle</u>	smooth muscle located in the fibroelastic membrane of the trachea
<u>trachea</u>	tube composed of cartilaginous rings and supporting tissue that connects the lung bronchi and the larynx; provides a route for air to enter and exit the lung
<u>transpulmonary pressure</u>	pressure difference between the intrapleural and intra-alveolar pressures
<u>true vocal cord</u>	one of the pair of folded, white membranes that have a free inner edge that oscillates as air passes through to produce sound
<u>type I alveolar cell</u>	squamous epithelial cells that are the major cell type in the alveolar wall; highly permeable to gases
<u>type II alveolar cell</u>	cuboidal epithelial cells that are the minor cell type in the alveolar wall; secrete pulmonary surfactant
<u>ventilation</u>	movement of air into and out of the lungs; consists of inspiration and expiration
<u>ventral respiratory group</u>	(VRG) region of the medulla oblongata that stimulates the contraction of the accessory muscles involved in respiration to induce forced inspiration and expiration
<u>vestibular fold</u>	part of the folded region of the glottis composed of mucous membrane; supports the epiglottis during swallowing
<u>visceral pleura</u>	innermost layer of the pleura that is superficial to the lungs and extends into the lung fissures
<u>vital capacity</u>	(VC) sum of TV, ERV, and IRV, which is all the volumes that participate in gas exchange

that participate in gas exchange
