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Nota di contenuto	The Respiratory System at a Glance; Contents; Preface to fourth edition; Units and symbols; List of abbreviations; About the companion website; Part 1 Structure and function; 1 Structure of the respiratory system: lungs, airways and dead space; Lungs; Airways; Dead space; 2 The thoracic cage and respiratory muscles; Thoracic cage; The sternum; The ribs and intercostal space; The diaphragm; Muscles of respiration; 3 Pressures and volumes during normal breathing; Functional residual capacity; Intrapleural pressure; Pressures, flow and volume during a normal breathing cycle; Lung volumes 4 Gas lawsFractional concentration and partial pressure of gases in a gas mixture; Water vapour pressure; The effect of pressure and temperature on gas volumes; Gases dissolved in liquids; Note on time-derivative symbols; 5 Diffusion; The alveolar-capillary membrane; Diffusion and perfusion limitation; Factors affecting diffusion across a membrane (Fick's and Graham's laws); Factors affecting DLco (TLco); 6 Lung mechanics: elastic forces; Assessing the stiffness of the lungs: lung compliance; Dynamic pressure-volume loops and dynamic compliance; The air-fluid interface lining the alveoli Surfactant7 Lung mechanics: airway resistance; Factors affecting airway resistance; Bronchial smooth muscle and epithelium; Transmural (airway-intrapleural) pressure gradient; RAW in disease; 8 Carriage of

oxygen; Anaemia and carbon monoxide poisoning; Other respiratory pigments; 9 Carriage of carbon dioxide; Hypoventilation and hyperventilation; Respiratory gas exchange ratio; 10 Acid-base balance; Sources of acid; Buffers; Control of acid-base balance; 11 Acid-base disorders; Respiratory and metabolic disorders; Anion gap and base excess; 12 Control of breathing I: chemical mechanisms Ventilatory response to changes in  $P_{A_{CO_2}}$  and  $P_{A_{O_2}}$  The central chemoreceptor; The peripheral chemoreceptors; Adaptation: chronic respiratory disease and altitude; 13 Control of breathing II: neural mechanisms; Brainstem and central pattern generator; Lung receptors and reflexes; 14 Pulmonary circulation and anatomical right-to-left shunts; Pulmonary circulation compared with the systemic circulation; Anatomical or true right-to-left shunts; Effect of right-to-left shunts on arterial blood gases; 15 Ventilation-perfusion mismatching Effect of the upright posture on perfusion, ventilation and  $V_A/Q$  Ventilation-perfusion matching in disease; Effect of ventilation-perfusion mismatching on arterial blood gases; Assessment of ventilation-perfusion mismatching; 16 Exercise, altitude and diving; Exercise; Altitude; Diving; 17 Development of the respiratory system and birth; Fetal circulation and birth; 18 Complications of development and congenital disease; Problems associated with premature birth; Congenital diseases; 19 Lung defence mechanisms; Physical and physiological defences; Airway fluids and mucus Phagocytes and natural killers

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