

Disease markers in exhaled breath

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For several decades human excreta (urine feces and sweat) were and are still used to aid in the diagnosis and monitoring of many diseases. So has the time come to include gases and vapors in exhaled human breath? This is what this book is about. This book is the most recent volume of the Lung Biology in Health and Disease series, which have a long history of an excellent scholarly specialized reviews.

There is now accumulating knowledge on the nature of some organic compounds resulting from metabolic reactions in the body that are exhaled through the large surface area within the lung. Technological advances have offered the means of detecting minute quantities of these compounds that were then the subject of intensive research in animal experimentation as well human health and disease. Examples of these are nitric oxide, carbon monoxide and exhaled hydrocarbons. This innovative approach is promising and will help us to understand the physiology, pathophysiology and molecular aspects of many disorders. Clinical applications of this technology are expected to be available soon. Such measurements have the advantage of being (a) non-invasive, (b) rapid, and (c) simple not requiring

patient cooperation and thus can be performed in infants or unconscious patients

Hence this book is a timely review of this subject by a faculty of international experts. It is well written and organized, starting from the molecular and physiologic basis of metabolic reactions producing these biologic markers in exhaled air, and then moving to the pathophysiology. The latter is discussed under 3 categories: hypoxia, ischemia, reperfusion and inflammation. Many disorders belonging to these categories are discussed such as infection, adult respiratory distress syndrome, chronic obstructive airway disease, asthma, pulmonary hypertension and lung transplantation. To show that these markers may be relevant to non-pulmonary disorders separate chapters deal with liver and rheumatic diseases. Finally since technical aspects are important, the editors have assigned separate section to discuss accuracy, standardization and common pitfalls.

The book is worth purchasing for scientists and clinicians who have an interest in research in this active field, and those who want to be ahead for its clinical applications, which are expected in the near future.

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