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Nota di contenuto	1 The role of laboratory medicine in the clinical context 2 The laboratory diagnostic process 3 Elements of biomedical laboratory organization 4 The role of statistics in laboratory medicine 5 Elements of metrology 6 The pre-analytical phase 7 The quality of the laboratory result: SOURCES OF VARIABILITY, METHOD OF ASSESSMENT AND ESTIMATION OF THEIR CLINICAL IMPACT 8 Principles of Immunochemistry 9 General information on laboratory tests and biomarkers 10 Enzymes and their clinical use 11 Liver: from biochemistry to clinical biochemistry 12 Protein diagnostics 13 Biomarkers of the nutritional state 14 Dyslipidemia 15 Hematological diagnostics 16 Immunohematology 17 Hemostasis 18 Kidney 19 Physical, Chemical and morphological urine examination 20 Hydroelectrolytic disorders 21 Blood gas analysis 22 Cardiac biomarkers 23 Stroke biomarkers 24 Thrombophilia 25 Endocrine system 26 Diabetes mellitus: from

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definition to therapy -- 27 Diabetes mellitus: the role of the laboratory -- 28 Metabolic syndrome -- 29 Hypoglycemia -- 30 The role of laboratory in pregnancy -- 31 Hereditary metabolic diseases -- 32 Hyperphenylalaninemia, thyrosinemia, glycogenosis, hyperammoniemia -- 33 Circulating biomarkers in oncology: areas of application, critical issues and perspectives -- 34 Liquid biopsy -- 35 Biological fluids --36 Laboratory diagnostics of autoimmune diseases -- 37 Laboratory diagnostics in allergic diseases -- 38 Biomarkers of bone remodeling -- 39 Alzheimer's disease and other neurodegenerative dementias --40 In vivo clinical biochemistry -- 41 Clinical biochemistry of the mind -- 42 Clinical molecular biology -- 43 Fever of unknown origin -- 44 Biomarkers of inflammation -- 45 Biomarkers of sepsis -- 46 Laboratory medicine and physical exercise -- 47 Clinical biochemistry of the physical exercise -- 48 Preoperative laboratory tests -- 49 The laboratory in urgency/emergency -- 50 Biological drugs -- 51 Mass spectrometry in clinical biochemistry and laboratory medicine -- 52 Toxicology and analytical pharmacology -- 53 Pharmacotoxicology of substances of abuse -- 54 Applications of "omics" sciences in the laboratory -- 55 Covid-19 -- 56 From aging to healthy longevity: from an oxymoron to an hendiadys. Innovation in Medicine including Predictive Medicine and Laboratory Medicine approaches -- 57 Biobanks of biomedical interest -- 58 Health technology assessment in laboratory medicine.-APPENDIX A - RECOMMENDATIONS FOR THE APPROPRIATE VENOUS BLOOD COLLECTION.-APPENDIX B - TABLE OF REFERENCE AND DECISIONAL VALUES OF THE MAIN BIOMARKERS. This textbook describes several diseases and clinical conditions, from physiopathological mechanisms to main clinical pictures, highlighting the importance of laboratory medicine, with the aim to provide the necessary tools for guiding correct laboratory findings interpretation. Indeed, it is now widely recognized that laboratory medicine has a pivotal role in clinical medicine, significantly influencing clinical decisions. Thus, it is crucial to understand and use laboratory data appropriately. This book has the great advantage of describing each topic exhaustively in order to facilitate its understanding. Specifically, it describes both diseases with a high incidence in the population, such as Diabetes Mellitus, Cardiovascular Diseases, Dyslipidemias, and Autoimmune Diseases, as well as rare diseases, such as Hereditary Metabolic Diseases. In addition, unusual topics are treated, such as Clinical Biochemistry of the Mind, as well as hot topics, such as Biological Drugs, Biobanks, Health Technology Assessment, and Omics Sciences. Finally, the book includes a chapter on the new health emergency, the SARS-CoV-2 pandemic. Two appendices are provided at the end of the book: a table summarizing the reference range and decisional cut-off for the main laboratory parameters and instructions on performing a venous blood sample. The book will be an invaluable tool for medical and biomedical students, as well as for practitioners. This book is a translation of an original Italian edition. The translation was done with the help of artificial intelligence (machine translation by the service DeepL.com). A subsequent human revision was done primarily in terms of content, so that the book will read stylistically differently from a conventional translation.

Sommario/riassunto