
The aim of this Handbook is to restore Wallach’s Interpretation of Diagnostic Tests (now in its sixth edition) to the size of a coat pocket and thus to provide the information in a format more readily available for immediate reference. The Sixth Edition of this classic has grown so large that it is no longer practical to carry around. Both books provide a wealth of information about the utilization of laboratory tests and are organized into chapters on diseases of organ systems, from cardiovascular to infectious diseases. Any textual writing is minimal; rather, the material is presented in practical lists, tables, figures, and algorithms. Clinical chemists will want to consider either or both books—the Sixth Edition as a possible resource for the library or personal bookshelf, and the Handbook for those who are interested in taking along this kind of a reference on ward rounds and for other interactions with clinicians away from the office, although I found I was not able to use it in these settings. There simply is not enough time to read a textbook before responding to real-time situations and questions. I would check the Handbook soon thereafter, however, when it became a confirmatory and educational tool for me.

The abridgment that produced the Handbook was achieved by including only those disorders encountered more frequently in clinical practice, eliminating illnesses that lack diagnostically useful laboratory findings and omitting neonatal and hereditary disorders that require genetic studies for diagnosis. Also omitted (unfortunately) are all the references and data sources, for which an interested reader would be forced to consult the Sixth Edition. A notable improvement over the Sixth Edition is that the Handbook alphabetizes disorders within the organ system chapters and the list of laboratory tests reviewed in early chapters.

The first chapter presents a list of reference intervals, along with an introduction to normal values and “general principles” intact from the Sixth Edition. These 14 considerations about laboratory tests should be required reading for pathology residents, laboratory medicine fellows, and anyone else concerned about a proper approach to laboratory utilization. The reference intervals themselves need some editing to add clarity and to remove some dated material; many of the chemistry reference intervals imply dependence on the specific method, which is good, but are given as “Ektachem” data, and the interval for creatine kinase (CK)-MB is still listed only as “<5%”.

The second chapter is a short roster of critical values (where the CK-MB % problem is repeated). The third chapter gives a concise presentation of chemical analytes and their alterations by various diseases. This list, although otherwise useful, contains several unfortunate differences from the Sixth Edition: Ionized calcium is not covered as well, two figures concerning potassium each display careless mistakes, and a missing word or two in a few places (e.g., albumin) causes confusion. The reference intervals and other information about urine are nicely covered in chapter four, which includes a remarkable 22 pages on information to glean from urine color.

The rest of the Handbook consists of 13 chapters covering various diseases of organ systems, as mentioned above, 2 short chapters on drugs and laboratory values, and 2 appendices, including a handy table of conversion factors between conventional and SI units for hematology and chemistry analytes. Lastly, a comprehensive index will perhaps be as valuable as the contents to a busy reader trying to look something up quickly.

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The first serum marker [serum glutamic-oxaloacetic transaminase (SGOT), also known as aspartate transaminase (AST)] to facilitate the diagnosis of myocardial infarction (MI) was described in 1954. It took 20 years before the next significant development was documented in the form of creatine kinase (CK)-MB measurement. However, the pace of discovery of new markers of MI has since accelerated. We have seen the emergence of completely new, nonenzymatic MI markers, such as the cardiac troponins, during the past 10 years. Descriptions of experimental immunoassays for measuring other structural proteins of the myocardium are published almost daily. “OId” markers have been given new life in the form of CK-MB isoforms, and we are looking for biochemical markers that will predict imminent MI instead of documenting the fact that the myocardium has suffered an ischemic injury. Additionally, the new markers have redefined our understanding of the ischemic syndromes and are changing traditional therapeutic approaches. The change is so rapid that it is sometimes hard, even for the researcher interested in this field, to keep up with new developments. In fact, many relatively new clinical chemistry and pathology textbooks are outdated when discussing the biochemical markers of MI.

It was not a day too soon to publish a book that focuses on coronary artery disease (CAD) and the laboratory diagnosis of the related syndromes. Cardiac Markers, edited by Alan Wu, sets out to do this, and it does it well. Dr. Wu and the other authors of the book, some active researchers themselves in the field of cardiac markers, do an excellent job of reviewing the clinical and laboratory aspects of MI.

The book comprises four parts, which focus on the clinical aspects of CAD, traditional cytoplasmic markers, current structural markers of MI, and future markers. Each part is filled with essential information for
laboratorians and clinicians alike. The book has an extensive list of references, although some chapters could have used a last-minute update of references because of the rapid pace of change in the field.

The first part of the book discusses the clinical aspects of ischemic changes of the myocardium and presents a general overview of the biochemical markers. Chapters 3 and 4 are a must for every laboratorian who performs biochemical marker testing for MI. Cardiologists and emergency room physicians will also find these chapters useful, despite the somewhat dated references in chapter 4.

Part II of the book deals with the traditional, or cytoplasmic, markers. It has a comprehensive list of methodologies. Two methods, the manual column chromatography method and the DuPont aca column chromatography/immunoinhibition method for CK isoenzyme measurement are not even in use any more in the US. I would have preferred that discussions of these methods indicate that these techniques have historical interest only. The other techniques, such as electrophoretic measurement of CK isoenzymes and the immunoinhibition method for CK-MB, mostly have been replaced by CK-MB mass assays. The chapter on lactate dehydrogenase (LDH) isoenzyme measurement also is more reflective of the practice of the past than that of today.

The last two parts of the book contain the most practical information for laboratory professionals. The first chapter of Part III describes the biochemistry of troponins I and T. The following two chapters each start with the currently available immunoassays for the cardiac troponins and then discuss the clinical utility of cardiac troponins T and I, respectively. The roles of the cardiac troponins in MI, unstable angina, cardiac contusion, and various other clinical conditions are presented. Ample clinical and analytical information based on up-to-date references is provided for the reader. The last chapter of Part III provides a balanced review of the myosin heavy and light chains. Part IV is dedicated to future assays and assay formats, including point-of-care assays. It is worth buying the book just for these two parts. No other publication that I know of has such a comprehensive collection of clinical and technical information available on the current and future biochemical markers of MI.

A few errors have escaped detection. Some are minor, such as the misspelling of names of referenced authors; others are potentially misleading for the readers, e.g., the TIMI grades in Fig. 5 on page 13.

My overall assessment is that Cardiac Markers is a very timely and important book. It should be in the library of every laboratory professional. I know I will use my copy regularly in my daily work and in my teaching, and I urge you to do the same.

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GC/MS: A Practical User’s Guide.

There have been many ironies in the evolution of the clinical laboratory over the last 25 years. One striking irony has been the movement in the clinical toxicology laboratory from specific chromatographic assays to immunoassay technologies. At the same time, implementation of gas chromatography–mass spectrometry (GC/MS) capability has become increasingly necessary, driven by the need to confirm antibody-based screening for drugs of abuse. At one time, GC/MS was reserved for academic and research settings, and the instruments were characterized by their need for a large amount of dedicated space, highly trained and motivated operators, a significant capital investment, and frequent downtime and maintenance; modern instrumentation, however, is compact, accessible to the college gradu-