
P R E F A C E

This Basic Concepts text organizes and integrates the immense fields of cell biology and histology. *Basic Concepts in Cell Biology and Histology* is not intended to be a comprehensive textbook, but a systematic compendium of key concepts about the relationship between cells, tissues, and organ systems and the way in which these histological entities function. The first part of the book develops the basic concepts of how cells are organized internally to carry out both generalized and specific functions. The second part of the book focuses on the arrangement of cells to form tissues and organs which work together to carry out organ system functions. Furthermore, the cell biology concepts developed in the first ten chapters are applied to the tissues and organs described in the remaining chapters. The last two chapters of this book serve as a road map to the identification of tissues and organs and a review of the basic techniques used in cell biology and histology. Also included is a guide to the orientation and interpretation of electron micrographs.

Each chapter contains primary topics (bold headings) which are organized into a series of basic concepts (within boxes) proceeding from the most basic to the more specific. To be successful in the study of cell biology and histology it is essential to master these basic concepts. In turn, each basic concepts box is followed by a short paragraph of explanation. Within these paragraphs, important terms are italicized. These are terms that are deemed essential to understanding and discussion of the chapter topic. The arrangement of basic concepts boxes and the highlighting of key terms which comprise the vocabulary of cell biology and histology are intended to facilitate student learning.

The flowcharts provided in the Strategies chapter are a unique portion of the book. They have been developed through the combined experience of the authors: fifty years of teaching over 7000 medical, dental, and graduate students in our respective educational institutions. These flowcharts facilitate the efforts of the beginning student to circumnavigate the obstacle that all tissues and organs appear indiscriminately pink and purple while learning the tried and true methods for their diagnostic identification. The flowcharts are organized to allow histological identification of any organ with an average of only four or five specific decisions, such as "Is this a solid organ or does it have a lumen?" or "What type of epithelium is present?"

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