

# GLOBAL EPIDEMIOLOGY OF CANCER

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# Preface

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**G**lobal *Epidemiology of Cancer* is written for all students and teachers of the health sciences, particularly those in epidemiology, public health, and medicine. Its main purpose is to present current and comprehensive information on the epidemiology, etiology, pathogenesis, risk factors, and preventive factors of common malignant neoplasms. In writing the book, I have made liberal use of the Internet and drawn upon worldwide information to address the global landscape of cancer.

The initial chapters of the book review molecular concepts of carcinogenesis and the global burden of cancer. Chapter 1 gives the reader a basic understanding of the molecular mechanisms critical to malignant transformation. Chapter 2 discusses the worldwide pandemics of tobacco abuse, alcohol abuse, obesity, and certain infections that have increased the incidence and mortality of many forms of cancer and pose unprecedented threats to the health of the human population. Standard epidemiologic methods and measures are also briefly addressed. Subsequent chapters of the book are arranged by human anatomy and physiology and discuss the diagnostic criteria, incidence, mortality, etiology, molecular pathogenesis, risk factors, preventive factors, therapies, and controversial issues for individual types of cancer.

Specific chapters address malignancies of the respiratory system (cancers of the lung, larynx, lip, oral cavity, and pharynx), the digestive system (cancers of the esophagus, stomach, colon, rectum, anus, pancreas, and liver), the female reproductive system (cancers of the breast, ovary, endometrium, cervix, vagina, and vulva), the male reproductive system (cancers of the prostate, testis, and penis), the urinary tract (cancers of the bladder, ureter, and kidney), the endocrine system (cancers of the thyroid and adrenal glands), the skin (melanoma and nonmelanoma skin cancers), connective tissues (sarcomas of soft tissue and bone), the immune system (lymphomas and leukemias), and the central nervous system (brain tumors).

Each chapter that is devoted to a specific type of cancer follows a similar format with subsections describing basic anatomy; diagnostic criteria; historical perspectives; the global burden of incidence and mortality; population differences and time trends in incidence, prevalence, and mortality; mechanisms of pathogenesis; risk factors; preventive factors; and opportunities for cancer prevention and control. Key epidemiologic studies and findings are presented in chronological order, with supporting evidence and references selected to guide readers to further study. It is assumed that readers are building on a fundamental knowledge base of human biology and have a strong sense of curiosity about medical science and cancer research. The text blends the traditional elements of cancer epidemiology with human anatomy, physiology, and molecular biology.

It is my hope that the text will provide a forum for examining current hypotheses regarding cancer epidemiology. Special sections of each chapter focus on controversial topics in cancer epidemiology with detailed information about the “pros” and “cons” of the controversy. This format facilitates active student discussion of molecular mechanisms of carcinogenesis and the relevant epidemiologic issues pertaining to the prevention and control of cancer.

I am deeply indebted to mentors, colleagues, and particularly students who have contributed to my education, research, and teaching over the past 4 decades. In essence, the book is an amalgamation of a longstanding continuum of exchange of information and ideas with many colleagues in the fields of medicine, public health, epidemiology, biostatistics, genetics, pathology, and molecular biology. The book also reflects the outstanding expertise of the editorial and production staff of Jones & Bartlett Learning; any errors or omissions in content or opinions on controversial issues are my responsibility. Finally, I am most grateful to my family for their support and understanding during the writing of this book.

*Randall E. Harris*

