

PHARMACOLOGY

A Practical Manual for Medical Students

This book is written in a concise and easy manner for second professional MBBS students.

Salient Features

1. The book is based on the latest NMC/MCI curriculum and all practical competencies of the subject have been covered for 2nd professional MBBS students.
2. It covers all practical aspects of pharmacology.
3. It has well-explained chapters on prescription writing, calculation of drug doses, ADR reporting, management of ADR, management of drug interaction, appraisal of promotional drug literature, criticism on prescription, case based learning, rational prescribing, how to reduce polypharmacy, and new drug discovery.
4. It includes well explained problem-based learning exercises with solutions.
5. It explains administration of drugs by various routes on a mannequin with illustrations which will help the students understand in an easy way.
6. Experimental pharmacology with demonstration of the effect of drug by CAL method is well explained with proper graphs and illustrations.
7. Communication with patient and pharma representative has been included.
8. Standard abbreviations, metrology and dosage forms, various routes of drug delivery and important pharmacy preparation are included in the book
9. Aimed at enhancing research skills in the undergraduate medical and dental students, this book covers protocol writing, preparation of the ICMR-STs project report and the procedure of submission.

Rajesh Kumar Suman is Assistant Professor, Department of Pharmacology, Hind Institute of Medical Sciences, Ataria, Sitapur, Lucknow. He obtained PhD in medical pharmacology from MGM Medical College, Navi Mumbai, India. He is author of 3 handbooks. He is recipient of Dr Naranjan S Dhalla award for best research paper presentation by International Academy of Cardiovascular Science, Canada, at conference held in India. Besides teaching to medical students, he has actively participated in research. He has presented 12 research papers at various international conferences held in India, and has to his credit more than 30 research papers published in national and international indexed journals.



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Suman | Borde | Mohanty | Misra



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As per the latest
CBME Guidelines |
Competency Based Curriculum
for the Indian Medical Graduate

Rajesh Kumar Suman
Manjusha K Borde
Ipseeta Ray Mohanty
Snigdha Misra



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for Medical Students

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for the Indian Medical Graduate

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to
My Teacher
Late Dr Yeshwant Deshmukh
Former Professor and Head, Department of Pharmacology
MGM Medical College, Navi Mumbai
and
My Parents
Shree Nand Lal Shah and Smt Jyantri Devi Shah

Foreword



KING GEORGE'S MEDICAL UNIVERSITY, U.P. LUCKNOW
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It is indeed a great pleasure for me to write foreword for the book *Pharmacology: A Practical Manual for Medical Students* authored by Dr Rajesh Kumar Suman, et al. which will be published by CBS Publishers & Distributors, New Delhi. The book explains practical aspects under broad chapters like clinical pharmacology, pharmacy, experimental pharmacology and protocol writing. The book covers the content that are essential for medical students like prescription writing, rational drug use, drug dose calculation, drug interaction, adverse drug reaction, new drug development, problem based learning exercises, pharmacy preparations, dosage forms and animal experiments are well explained. The book also covers techniques to administer drug through various routes which will be helpful for skill assessment on mannequins.



Unique feature of this book is concise presentation of protocol writing and information about ICMR-STs project for undergraduate students so students could write protocol for short-term studentship research projects which has been sponsored by ICMR to enhance undergraduate research.

Dr Rajesh Kumar Suman to has taken good effort to present this book in a simple manner and, cover every aspects for practical pharmacology which should be taught in 2nd semester professional MBBS curriculum. I hope, this book will become an essential tool for students as well as teachers to understand practical pharmacology. I deem it privilege to recommend this practical book for pharmacology, which is concise and lucidly presented.

I congratulate and wish all the best to Dr Rajesh

Dr Amod Kumar Sachan

Professor and Head
Department of Pharmacology and Therapeutics
KGMU, Lucknow

Foreword

We have ushered in the era of Competency Based Medical Education (CBME). This change in curriculum necessitated the availability of appropriate books and manuals to guide teachers and students alike in this new system. CBME gives more stress on practical aspects and so far as pharmacology is concerned, there is a lot at stake as drugs used by patients is so common place. Starting from the concept of P-drugs to writing a proper prescription and communicating the same effectively to the patient is very important.



The importance of knowledge of various dosage forms, drug delivery systems and dose calculations, etc. therefore can't be overemphasized. We want to train our medical undergraduates on pharmacovigilance, critical appraisal of drug promotional literatures and interaction with medical representatives which ultimately would promote rational drug prescription by these budding doctors.

This book *Pharmacology: A Practical Manual for Medical Students* does a fair justice to the newly introduced curriculum and fills the gap between demand and supply. I must congratulate the authors and editors on taking this painstaking effort towards writing this much needed book. The idea of introducing a chapter on ICMR-STC project is brilliant and contemporary. I am sure that medical students would find this manual very useful not only during their student days but also in future when they become doctors.

A handwritten signature in black ink, appearing to be 'Dr. Bhabagrahi Rath'.

Dr Bhabagrahi Rath

Professor and Head

Department of Pharmacology and In-charge Registrar

Formerly In-charge Controller of Examinations

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Foreword

I am very glad to know that you have written a book entitled *Pharmacology: A Practical Manual for Medical Students* which is being published by CBS Publishers & Distributors, New Delhi. I greatly appreciate the effort taken by you to publish such a wonderful book. Hope, this book will help students a lot in understanding practical aspects of pharmacology in a very easy way.

It is a great accomplishment and my heartiest congratulation to you. Hind Institute of Medical Sciences will extend all possible support in this endeavor.

With best wishes



A handwritten signature in black ink, appearing to read 'Richa Mishra'.

Dr Richa Mishra

Chairperson
Hind Institute of Medical Sciences
Mau, Ataria, Sitapur

Preface

The great developments/advances in pharmacology during the last two decades are accountable for being one of the most important subjects in medical curriculum. This book covers contents as per the new curriculum implemented by NMC.

I have tried to design this book in a simple and presentable form to make students understand the practical aspects of pharmacology. This book elaborately covers clinical pharmacology, pharmacy, experimental pharmacology, protocol writing and communication with patient/representative. Solved exercises are given for correct prescription writing, how to criticise and correct a prescription, adverse drug reaction and drug interaction, etc. to impart problem based learning. The book also covers solved exercises on pharmacy preparations which will facilitate undergraduate research. As ICMR provides stipend to MBBS and BDS students to participate in research, therefore I have included every aspect to write, design and to submit protocol for ICMR-STS projects.

I hope my purposeful attempt will help students and teachers alike in their future endeavor and learning. For any feedback, write to me at rajeshsuman2043@gmail.com.

Rajesh Kumar Suman

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I wish to sincerely acknowledge all the extremely special people who has done great help to bring this book. I am very much thankful to Dr HK Singh, Professor and Head, Department of Pharmacology, Hind Institute of Medical Sciences, for editing of the book. His inspiring guidance, motivation, enthusiasm, perpetual encouragement, valuable advice and extensive discussions during writing this book have enabled me to successfully complete the task. I am thankful to Dr Savita Sahani, former Professor and Head, Department of Pharmacology, MGM Medical College, for reviewing and providing me valuable suggestion regarding content of this book.

I am grateful to Professors of Pediatrics, Dr NC Mohanty, Ex Medical Superintendent, MGM Hospital, Kalamboli, Navi Mumbai. I had published my first research paper under his umbrella and guidance.

I take the opportunity to convey my heartfelt gratitude to Dr Sanjay Khanna and Dr Tariq Salman, Professor, Department of Pharmacology, HIMS, Sitapur. I extend my sincere thanks to Dr Swapnil Srivastava, Associate Professor; Dr Priti Singh, Assistant Professor; Mr Arun Adhikari, Tutor, and Dr Gulam Mohammad, Tutor, HIMS, Sitapur.

My humble and sincere gratitude are due to Dr Anurag Pathak, Assistant Professor, NIMS, Jaipur, for his support during writing this book.

I thanks to Dr Vithal Patil, Associate Professor, Bharti Vidyapeeth Dental College, Navi Mumbai; Dr Yogesh Garje, Medical Advisor, Sun Pharma, for their support.

My special thanks to Dr Rakesh Kumar, Surgeon (ENT), Lokbandhu Hospital, Lucknow, and my wife Mrs Soni Shah, for her unconditional and emotional support.

No words can describe the feeling of gratitude and admiration for Dr Ipseeta Ray Mohanty, my guide and mentor, without her enthusiastic and acuminous guidance, I would not have been able to complete this book.

I thank Mr SK Jain, CMD and Mr YN Arjuna, Senior Vice President—Publishing, Editorial and Publicity, CBS Publishers & Distributors, New Delhi, for their support.

Rajesh Kumar Suman

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