

Biochemistry
for Physiotherapy and
Allied Health Sciences Students

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FOREWORD

I have great pleasure in writing a brief introduction to the *Biochemistry for Physiotherapy and Allied Health Sciences Students* authored by Dr. Beena Shetty, Professor of Biochemistry, Dr M Nandini and Dr Vinitha Ramanath Pai, Associate Professors of Biochemistry, from Kasturba Medical College, Mangalore and Yenapoya Medical College, Mangalore. They are experienced teachers and have been teaching Biochemistry for the medical, nursing and physiotherapy students for over two decades. I had the pleasure of working with them as a senior colleague for a long time. Hence I can vouch for their competence, dedication to teaching and commitment to work.

Physiotherapy and allied sciences taught in the Health Universities in our country encompass almost all the basic science subjects of the undergraduate medical students. Though it is said that an elementary knowledge of these subjects is adequate for the allied science students, the curricula presented by the respective boards of studies are ambitious and sometimes vague. The existing textbooks (both Indian and Western) are voluminous. The students appearing at the University examinations in these subjects are confused and lost in the maze of information. Information offering fundamental knowledge is the need of the hour. I recall Dr R Raghunandana Rao (retired Professor of Biochemistry in various medical colleges including the Kasturba Medical College, Mangalore), one of the brilliant teachers I have known, often saying that if a student is taught to appreciate fundamentals, details will eventually take care of themselves. Good fundamentals will inspire a student to look into the "Future of Science" that is rapidly developing in biological complexity, with greater inspiration.

The highly complicated molecule DNA is the basis for all life on earth. As DNA replicates (makes copies of itself), there would have been occasional errors in the order of nucleotides along the spiral (of DNA) over the billions of years since life originated. To dwell into the complexity of mutation with an enquiring mind is awe-inspiring. The 9-membered purines and the 6-membered pyrimidines are the key fundamentals in the search. One who is at ease with their chemical nature and sequence in DNA will be advantageously placed to fathom the biological complexity. Further, rapid developments in the diagnostic criteria for liver and renal functions need to be understood clearly with the existing fundamental knowledge.

The authors have taken pains in laying foundation for the fundamentals of all aspects of Biochemistry without overdose. The book, at the same time, is student-friendly and will be useful from the examination point of view, which, after all, is the passport for grading.

I am sure the efforts of Drs. Beena Shetty, Nandini and Vinitha Ramanath Pai will be successful and the students will be benefited.

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PREFACE

Biochemistry is a fascinating subject which is growing at a very fast pace. An understanding of the biochemical concepts is very essential for the medical and nutritional aspects of human welfare too. Hence, there is a need for a sound basic knowledge of the subject to be imparted to young students who are on the first step for a career in health sciences of any type.

This textbook is an extension of our experiences in teaching undergraduate courses of various allied sciences like medical, dental, nursing and physiotherapy. It has been designed keeping in mind the prescribed university syllabus of MAHE and RGUHS and is intended to impart a simple, concise knowledge of the subject the students need to know. Relevant materials on the chemistry, structure, function and metabolism of the various biomolecules have all been discussed under one heading to give a clearer understanding of the topic. We believe this approach is essential for proper understanding and easy reference.

Beena V Shetty
Nandini M
Vinitha Ramanath Pai

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