

Handbook of FAQs on Basic Genetics and Common Genetic Disorders *for Students*

This handy book aims to serve both undergraduate and postgraduate medical students in providing the essential knowledge of genetics and guidance in focused, pointed and systematic way for preparing the question-answers related to the genetics which are frequently asked in the examinations.

Key Features

- Comprehensive, illustrative, latest coverage of all the topics related to basic genetics, common genetic disorders, from the recommended academic syllabus, questions from previous question bank with suitable examples in an easy flowing question-answer format.
- Complex terminology and hard-to-grasp concepts of genetics are presented in student-friendly, simplified and understandable language.
- Up-to-date content offers a glimpse into the latest diagnostic and therapeutic advances in genetics.
- Recent genetics websites, clinical genetic databases and tables of various genetic syndromes and other disorders are provided in the appendix.
- Contributions from leading experts in the field of genetics.

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QR code to
access online
CBS Catalogue



ISBN: 978-93-90709-89-2



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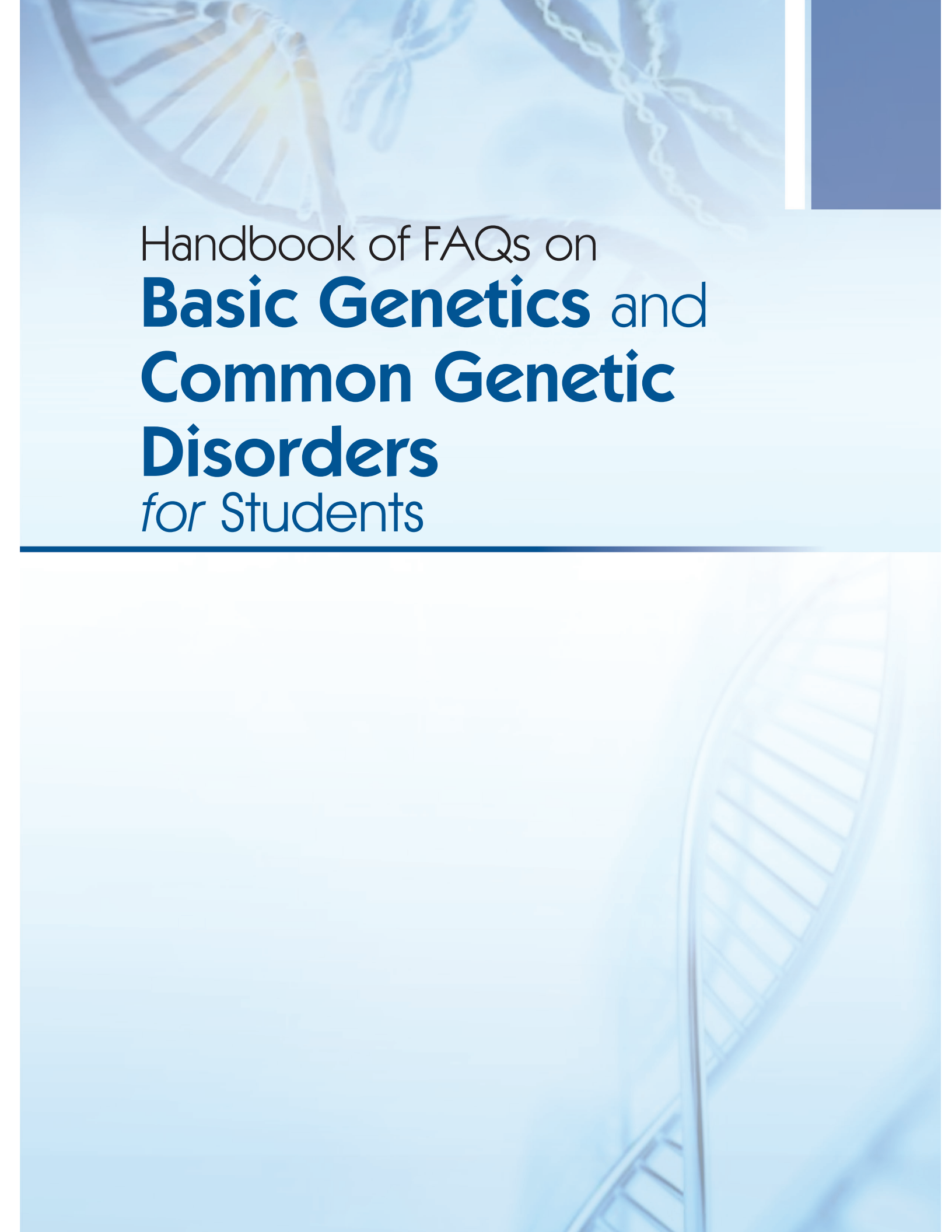
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Handbook of FAQs on **Basic Genetics and Common Genetic Disorders** for Students

ISBN: 978-93-90709-89-2

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First Edition: 2022

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Published by Satish Kumar Jain and produced by Varun Jain for

CBS Publishers & Distributors Pvt Ltd

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Printed at: Nutech Print Services India, Faridabad, India.

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Foreword

It gives me great pleasure to provide this introduction to the first edition of the *Handbook of FAQs on Basic Genetics and Common Genetic Disorders for Students*. This book is a unique compilation of important concepts related to medical genetics in a question and answer format. Though the primary intent behind the effort is to provide a ready reference to undergraduate and postgraduate medical students to help them attempt questions related to medical genetics in examinations, it also serves the much bigger purpose of elucidating the principles and practice of medical genetics to medical students at an early stage in their career.

Introducing the concepts of medical genetics and highlighting the relevance of this subject to medical practice to students, right from their undergraduate training period is imperative in this field of genetic diagnostics and molecular therapy in recent years. Apart from the so-called 'pure genetic disorders' which are known to be caused by chromosomal abnormalities and genetic mutations, a growing number of multifactorial disorders including diabetes, hypertension, malignancies, autoimmune diseases, psychiatric disorders and many others, are being identified to have genetic

contributory factors in their causation. These chromosomal disorders and monogenic diseases, as well as multifactorial disorders can affect all body organs and organ systems. Therefore, all medical practitioners, irrespective of their field of specialization, need to understand the basic concepts of genetics as well as be aware about these recent advances.

Unfortunately, at present, very little emphasis is being given to genetics in undergraduate medical teaching and postgraduate medical training. Though genetics is a part of the medical curriculum, it is often mistakenly considered to be a non-clinical research area, not relevant to clinical practice. Students also get put-off by the so-called 'complex terminology' and 'hard-to-grasp' concepts of medical genetics.

This book is an attempt to simplify the concepts of genetics, highlight the importance and relevance of the subject in medical practice, and inculcate an interest in the subject in medical students early in their career. I congratulate the editorial team for this wonderful and timely effort. I am sure this book would prove to be of great help to medical students not just in their estimations but also in their practice.

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Preface

Genetics is an essential subject in the field of human science. In the last two decades due to various advancements in diagnostics and therapeutic genomic techniques, the whole world has got transformed. But the medical students are still lagging behind in understanding the fundamental concepts of genetics and common genetic disorders. Even though the chapters on the basic information related to genetics are introduced at the middle school level but still the foundational knowledge of the medical students about genetics is not satisfactory.

Because of this reason, students are not very comfortable in writing the answers related to genetics in the examinations.

In view of the above, via this book, an attempt is made to bridge the gap between the low level and the expected level of knowledge of students about the subject and to facilitate them to develop the required knowledge base, and skills to write correct answers in the examination. This book will be having a

wide variety of questions and their answers based on basic cellular and molecular genetics, common genetic disorders, conventional and advanced diagnostic techniques, treatment and prevention of genetic disorders and recent advances in the genetics. To prepare these questions and answers various expert contributors, some of whom being eminent teaching faculty in medical colleges, with their vast knowledge about the subject and understanding the needs of the students, have spent a lot of time and energy.

With the objective of providing comprehensive and basic information on genetics—almost all the FAQs related to genetics which are frequently asked in the examinations have been covered in a simple and easy language in this book. Hopefully, the book will be friendly and a single window solution for students to revise the subject before the examinations.

Any suggestion to improve the book will be greatly acknowledged.

Komal Uppal

Acknowledgments

I would like to thank:

- Dr Suresh Thomas who motivated me to compile and publish the book with the stated objective.
- Dr Prajnya Ranganath who inspired me a lot to move further in the field of genetics.
- Dr Anne Hasan who always motivated me to take initiative to increase understanding of the basic genetics concepts of medical students.
- Co-editor, Dr Seema Kapoor, without her contributions this book would not have come to being.
- Dr Madhulika Kabra for continuous guidance and support.
- Various authors and colleagues, who have contributed to this book and also thankful to

all my past and present pediatric teachers, clinical geneticists and to all my patients.

- My family members, especially my kids Bhriagu and Diza Uppal, for giving me free time so that I can focus on this book.
- Mr Vicky and Miss Shruti for editing, formatting and designing the content.

I acknowledge the contribution of CBS Publishers & Distributors, Mr Satish Kumar Jain Chairman and Managing Director and Mr Sunil Dutt Promotion and Development Manager for their efforts to publish this book on time.

I have made all the attempts to acknowledge all the sources of information and relevant illustrations. If something has left out unintentionally, I apologize for that.

Komal Uppal

Contents

<i>Contributors</i>	v
<i>Foreword by Dr Prajnaya Ranganath</i>	ix
<i>Preface</i>	xi

SECTION I Basic Genetics

1. Basic Introduction to Cellular and Molecular Biology and the Human Genome	3
<i>Komal Uppal, Shreya Tanneru, Suresh Thomas, Priyanka Srivastava, T Karthik Bharadwaj</i>	
○ Cellular Biology	4
<i>Komal Uppal</i>	
○ Molecular Biology and Human Genome	7
<i>Komal Uppal, Shreya Tanneru, Suresh Thomas, Priyanka Srivastava, T Karthik Bharadwaj</i>	
2. Mutation and Polymorphism	16
<i>Syeda Zubeda</i>	
3. Chromosomal Abnormalities and their Mechanism	22
<i>Priyanka Srivastava</i>	
4. Pattern of Inheritance: Mendelian Inheritance	31
<i>Meenakshi Lallar, Komal Uppal, Surya Balakrishnan</i>	
○ Autosomal Dominant Inheritance	31
<i>Meenakshi Lallar</i>	
○ Autosomal Recessive Inheritance	37
<i>Komal Uppal</i>	
○ X-linked Recessive, X-linked Dominant Inheritance and Y-linked Inheritance	44
<i>Surya Balakrishnan</i>	

5. Non-Mendelian Inheritance	52
<i>Gayatri R Iyer, Chaitanya A Datar</i>	

SECTION II Laboratory Diagnostic Techniques

6. Genetic Test: Cytogenetic Analysis and Molecular Genetic Analysis	61
<i>Usha R Dutta, Aruna Priya Kamireddy, T Karthik Bharadwaj, Deepti Saxena</i>	
○ Genetic Test	61
<i>Usha R Dutta</i>	
○ Cytogenetic Analysis	63
<i>Usha R Dutta</i>	
○ Molecular Genetic Analysis	75
<i>Aruna Priya Kamireddy, T Karthik Bharadwaj, Deepti Saxena</i>	

SECTION III General Treatment and Prevention of Genetic Disorders

7. Treatment and Prevention of Genetic Disorders	89
<i>Deepti Saxena, Prajnaya Ranganath, Manisha Goyal, Shreya Tanneru, Suresh Thomas, Komal Uppal</i>	
○ Treatment of Genetic Disorders	89
<i>Deepti Saxena, Prajnaya Ranganath</i>	
○ Prevention of Genetic Disorder	99
<i>Manisha Goyal, Shreya Tanneru, Suresh Thomas, Komal Uppal</i>	
○ Prevention (Screening at Community Level) of Genetic Disorders	109
<i>Manisha Goyal, Shreya Tanneru, Suresh Thomas, Komal Uppal</i>	

SECTION IV
**Genetic Counseling, Ethical and
 Legal Issues in Genetics**

8. Genetic Counseling, Ethical and Legal Issues 115
Aruna Priya Kamireddy, Qurratulain Hasan, Chaitanya A Datar
- Genetic Counseling 115
Aruna Priya Kamireddy, Qurratulain Hasan
 - Genetic Counseling for Common Issues 117
Aruna Priya Kamireddy, Qurratulain Hasan
 - Ethics in Genetics 121
Chaitanya A Datar

SECTION V
**Common Genetic Disorders:
 Clinical Features and their Management**

9. Common Chromosomal Disorders 129
Suvarna Ghanashammagar, Gayatri R Iyer, Priyanka Srivastava
10. Multifactorial Disorders 149
Ami Shah, Chaitanya A Datar, Komal Uppal
11. Common Monogenic Disorders 156
Shruti Bajaj, Mounika Endrakanti, Neerja Gupta, Gayatri N, Kausik Mandal
- Connective Tissue Disorder 156
Shruti Bajaj
 - Neurocutaneous Disorders 159
Shruti Bajaj
 - Respiratory Disorders 167
Shruti Bajaj
 - Skeletal Disorders 171
Shruti Bajaj, Mounika Endrakanti, Neerja Gupta
 - Neuromuscular Disorders 183
Gayatri N
 - Blood Disorder 194
Kausik Mandal
12. Hemoglobin and Hemoglobinopathies 198
Meenakshi Bothra Gupta, Seema Kapoor
13. Congenital Malformations and Dysmorphism 209
Kausik Mandal, Ami Shah

14. Congenital Deafness 217
Inusha Panigrahi, Divya Kumari
15. Neurodevelopmental Disorders 222
Prajnya Ranganath
16. Triplet Repeat Disorders 226
Divya Agarwal
- Fragile X Syndrome 231
17. Disorders of Sexual Development 234
Divya Agarwal
18. Metabolic Disorders 242
Chaitanya A Datar, Snehal Patil, Sarah Bailur, Siyaram Didel, Varuna Vyas, Kuldeep Singh
- Inborn Error of Metabolism (IEM) 242
Chaitanya A Datar
 - Aminoacidopathies 246
Snehal Patil
 - Urea Cycle Defects 262
Snehal Patil
 - Organic Acidemias 273
Sarah Bailur
 - Carbohydrate Metabolic Disorders 275
Snehal Patil
 - Congenital Disorders of Glycosylation 291
Snehal Patil
 - Glycogen Storage Disorder (GSD) 297
Sarah Bailur
 - Fatty Acid Oxidation Defects 299
Sarah Bailur
 - Mitochondrial Disorders 302
Chaitanya A. Datar
 - Peroxisomal Disorders 305
Sarah Bailur
 - Lysosomal Storage Disorder 307
Siyaram Didel, Varuna Vyas, Kuldeep Singh
19. Primary Immunodeficiency Disorders 325
Soma Santosh Kumar
20. Reproductive Genetics 333
Seema Thakur
21. Genodermatosis 346
Irene Mathews, Jerene Mathews
22. Cancer Genetics 366
Aruna Priya Kamireddy, Komal Uppal

SECTION VI
Recent Advances in Genetics

23. Recent Advances in Diagnostic and Therapeutic Genetics 379
Prajnya Ranganath, Risha Nahar Lulla, T Karthik Bharadwaj
- Recent Advances in Diagnostic Genetics 379
Prajnya Ranganath, Risha Nahar Lulla, T Karthik Bharadwaj
 - Recent Advances in Therapeutic Genetics 384
Prajnya Ranganath
24. *Glossary* 391
Yashodhara Bhattacharya
25. *Appendix* 399