The field of infertility research and practice is one of continuous innovation and change, but alongside the increasing sophistication of assisted reproductive techniques there is as strong a need as ever for clinical experience and common practical sense to inform diagnosis and clinical decision making. Now in its fourth edition, *Infertility in Practice* is highly practical and gives the clinician a clear picture of the aetiology of infertility and a careful assessment of the basis for treatment options. A thoroughly comprehensive book that provides sound theory and evidence-based therapy, this book is a must for any practitioner dealing with infertility.

Adam H. Balen
MB BS, MD, DSc, FRCOG, is Professor of Reproductive Medicine and Surgery at Leeds Teaching Hospitals, UK

From reviews of previous editions

“An outstanding book that provides a practical guide for those involved in the management of infertility. I found it a joy to read. Although it may have been intended primarily for clinicians, it will also be an invaluable guide for nurses, scientists and counsellors involved in this area. The book provides a vital update for general gynaecologists and much of the contents will be of interest to experienced sub-specialists. It is essential reading for clinicians new to the field of infertility treatment.”

— *Human Fertility*

“The book flows easily from one chapter to the next. There are many clear and instructive illustrations that add a visual representation to the text. This is a well organized and practical clinical guide that covers not only basic infertility but also more challenging areas such as counseling, ethics and termination of therapy.”

— *Fertility & Sterility*

“The volume is easy to read and reflects the humanity and compassion of the author.”

— *Journal of the American Association of Gynecologic Laparoscopists*

“The book is alive in that it is very up to date, exudes the wisdom gained from the practical experience of the author and, in particular, has a theme of pure common sense and a no-nonsense attitude running right the way throughout it.”

— *Orgyn*
Infertility in Practice
REPRODUCTIVE MEDICINE AND ASSISTED REPRODUCTIVE TECHNIQUES SERIES

David Gardner
University of Melbourne, Australia

Zeev Shoham
Kaplan Hospital, Rehovot, Israel

Kay Elder, Jacques Cohen
Human Preimplantation Embryo Selection, ISBN: 9780415399739

Michael Tucker, Juergen Liebermann

John D Aplin, Asgerally T Fazleabas, Stanley R Glasser, Linda C Giudice

Nick Macklon, Ian Greer, Eric Steegers
Textbook of Periconceptional Medicine, ISBN: 9780415458924

Andrea Borini, Giovanni Coticchio

Steven R Bayer, Michael M Alper, Alan S Penzias

Ben Cohlen, Willem Ombelet

Adam H. Balen
Dedicated to Toby and Cara
# Contents

Foreword .................................................................................................................. ix  
Preface ..................................................................................................................... xi  

Section I  Infertility – Background, Diagnosis and Counselling  
1. Infertility – Epidemiology, Diagnosis and Counselling ................................. 1  
2. Prevention of Infertility ................................................................................... 13  
3. Planning a Pregnancy ....................................................................................... 27  
4. Obesity and Reproduction ............................................................................... 49  
5. Investigating Infertility .................................................................................... 63  
6. Counselling .................................................................................................... 135  

Section II  Management – Diagnosis and Treatment  
7. Anovulatory Infertility and Ovulation Induction ........................................... 145  
8. Polycystic Ovary Syndrome ............................................................................. 201  
9. Premature Ovarian Insufficiency (Failure) and Oocyte Donation ............... 239  
10. Endometriosis ................................................................................................. 251  
11. Tubal Infertility and Fibroids ......................................................................... 269  
12. Male Factor Infertility ..................................................................................... 291  
13. Unexplained Infertility .................................................................................... 315
Section III  Assisted Conception, Ethical Issues and Regulation

14. Assisted Conception ................................................................. 323

15. The Human Fertilisation and Embryology Authority and Regulation.... 365

16. Ethical Issues ........................................................................... 375

17. Follow-Up of Children Born from Assisted Reproduction Techniques .... 387

Section IV  Complications of Treatment and New Technologies

18. Complications of Ovarian Stimulation ........................................... 395

19. Emerging Technologies ............................................................... 417

Section V  Pregnancy

20. Miscarriage after Fertility Treatment ........................................... 427

21. Recurrent Miscarriage .................................................................. 441

22. Ectopic Pregnancy ....................................................................... 451

Section VI  Treatment Failure

23. When to Stop Treatment and Other Options.................................... 459

Useful Addresses ........................................................................... 465

Books for Further Reading ............................................................... 467

Appendix ......................................................................................... 469
Foreword

It gives me great pleasure to write the foreword for the Fourth Edition of Infertility in Practice, written by Professor Adam Balen. With the current emphasis on sophisticated assisted reproductive techniques (ARTs), the critical contribution of clinical experience and expertise and common practical sense to diagnosis and clinical decision making is often overlooked. This book presents a practical perspective and gives the clinician a clear picture of the aetiology of infertility. The most common causes of infertility, such as polycystic ovary syndrome (PCOS), endometriosis, tubal damage, male factor and unexplained aetiology, have been described in detail, avoiding speculations that are not based on scientific knowledge. Infertility treatment options are described in detail, and the book gives the reader a clear understanding of the current treatment practices.

I especially liked Chapter 14, Assisted Conception, which describes the present view on treating patients in some special situations. For example, the indication of hydrosalpinges in ultrasound is a clear sign for their removal as the procedure improves implantation and pregnancy rates. Furthermore, in moderate-to-severe endometriosis, in vitro fertilisation (IVF) is recommended if pregnancy is not anticipated within 12 months after surgery. Similarly, in severe sperm dysfunction or after unsuccessful cycles of superovulation combined with intrauterine insemination (IUI), IVF should be offered, and in men with azoospermia it is reasonable to attempt 12 cycles of donor insemination in women younger than 35 years of age. An interesting option is to test fertilisation after one IVF treatment before superovulation and IUI.

Some of the less commonly used – and also these days, obsolete – ART treatments are described briefly, but, understandably, the most frequently used procedures of IVF have received most space and different stimulation options have been described in detail. Also, special situations, such as ovarian cysts, PCOS and patients with decreased ovarian reserve, have been clarified in separate chapters. The results of different treatment options, and the impact of the number of attempts on pregnancy outcome, have been described. Ethical issues are a very essential part of ART treatments, and questions such as experiments on human pre-embryos, cloning, stem cell research, fetal sex selection and reduction have been considered in many respects. The book identifies potential ART-treatment-related complications and pregnancy problems, and it summarises the present data on the possible health consequences of the children born from ART treatments.

This fourth edition echoes the format of previous editions, but many of the tables and images have been updated. All in all, the book gives an excellent insight into the leading causes of infertility, infertility treatments, pregnancy and health of the child. I believe that the readers can easily obtain a comprehensive understanding of the recent developments in this particular field, and I am sure they would enjoy reading