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Parrington and Kevin Coward; 12. Early embryogenesis Shankar Srinivas and Tomoko Watanabe; 13. Human organogenesis Autumn Rowan-Hull; Part II. Infertility: 14. Global perspectives in reproductive health and fertility Janis Meek and Stephen Kennedy; 15. Fertility control and contraception Enda McVeigh; 16. Causes and investigations of male and female infertility Tim Child; 17. Treatment of male and female infertility Tim Child; 18. Social aspects of using reproductive technology Renate Barber and Alison Shaw; Part III. Assisted Reproductive Technology (ART): 19. From Pythagoras and Aristotle to Boveri and Edwards: a history of clinical embryology and therapeutic IVF Jacques Cohen; 20. Legal, ethical and regulatory aspects of assisted reproductive technology (ART) Ingrid Granne and Lorraine Corfield; 21. Quality management in assisted reproduction Janet Currie and Jo Craig; 22. Regulation of assisted conception in the UK James Lawford Davies and Alan R. Thornhill; Part IV. Assisted Reproductive Technology: Skills, Techniques and Present Status: 23. Fundamental laboratory skills for clinical embryologists Celine Jones, Junaid Kashir, Bianka Seres, Jane Chan, Kornelia Ewald and Kevin Coward; 24. Semen analysis and preparation Aysha Itani and Karen Turner; 25. Superovulation protocols Janelle Luk and Pasquale Patrizio; 26. Intracytoplasmic sperm injection (ICSI) Caroline Ross and Karen Turner; 27. Embryo culture Karen Turner; 28. Embryo biopsy Tracey Griffiths; 29. In vitro maturation of oocytes Gustavo German and Tim Child; 30. Morphological expressions of human egg and embryo quality Mina Alikani; 31. Cryopreservation in assisted reproduction Jo Craig and K. Turner; 32. Reproductive surgery Enda McVeigh; 33. Pre-implantation genetic diagnosis Dagan Wells and Elpida Fragouli; 34. Pre-implantation genetic screening Dagan Wells; 35. The biology and therapeutic potential of embryonic stem cells Richard Gardner; 36. Ethical considerations for clinical embryology Paul R. V. Johnson; Index.

Sommario/riassunto

The success of Assisted Reproductive Technology is critically dependent upon the use of well optimized protocols, based upon sound scientific reasoning, empirical observations and evidence of clinical efficacy. Recently, the treatment of infertility has experienced a revolution, with the routine adoption of increasingly specialized molecular biological techniques and advanced methods for the manipulation of gametes and embryos. This textbook - inspired by the postgraduate degree program at the University of Oxford - guides students through the multidisciplinary syllabus essential to ART laboratory practice, from basic culture techniques and micromanipulation to laboratory management and quality assurance, and from endocrinology to molecular biology and research methods. Written for all levels of IVF practitioners, reproductive biologists and technologists involved in human reproductive science, it can be used as a reference manual for all IVF labs and as a textbook by undergraduates, advanced students, scientists and professionals involved in gamete, embryo or stem cell biology.
