Index

abdominal ectopic pregnancy management, 26 ultrasound diagnosis, 23 access to ART, 183-184 acupuncture therapy, 61 adenomyosis, 69 adhesions, 26 adnexal torsion, 36 adrenoleukodystrophy, 9 alcohol abuse and access to ART, 184 ancient Egypt fertility testing, 1 Angelman syndrome, 102, 172-173 antepartum hemorrhage, 76, 83 anthracyclines, 131 antiphospholipid syndrome and early pregnancy failure, 55 antisperm antibodies, 93 and early pregnancy failure, 55 anxiety and risk of early pregnancy failure, 56 artificial insemination early historical accounts, 1 ethical issues, 1 artificial reproductive technology (ART) number of births per year, 4 number of births to date, 4 aspirin therapy, 61 assisted hatching effects on early pregnancy failure, 59 Australia first IVF birth, 7 autoimmune disorders, 126 azoospermia, 93, 124, 126, 176 sperm recovery techniques, 8 Barker hypothesis, 176, 178 Bavister, Barry, 6 Beckwith-Wiedemann syndrome, 102, 172-173 bicornuate uterus, 26 risk of placenta previa, 69 biochemical markers of ectopic pregnancy, 23

blastocyst sexing, 9 body mass index (BMI) and risk of early pregnancy failure, 55, 56 bone marrow failure stem cell transplantation, 10 breast cancer, 124, 131 pregnancy after, 132 breech presentation, 26 risk in ART pregnancies, 70 Brown, Louise, 168, 178 first test-tube baby, 2, 6–7

cancer incidence of different types, 124 therapeutic use of embryos, 2 cancer patients effects of chemotherapy on fertility, 125 effects of radiotherapy, 125-126 fertility preservation, 10, 124 fertility preservation strategies, 126-129 importance of fertility preservation, 124 potential benefits of ovarian transplantation, 144 cancer patients tissue study ovarian transplantation, 140-145 cancer risk children born after ART, 103 cancer survivor pregnancy after breast cancer, 132 after cervical cancer, 132 incidence of low birth weight, 130-131 incidence of preterm birth, 130-131 miscarriage rates, 130-131 prenatal advice for cancer survivors, 131 risk of cardiotoxicity, 131 risk of congenital malformations, 131 risk of genetic disorders, 131 spontaneous pregnancy rates, 129-130 cancer survivors ovarian transplantation results, 141-142

effects on fertility, 124-126 cerebral palsy, 85, 174 cervical cancer, 124 pregnancy after, 132 cervical ectopic pregnancy management, 25 ultrasound diagnosis, 22-23 cervical suture, 26 Cesarean scar, 14 Cesarean scar ectopic pregnancy management, 25 Cesarean scar pregnancy ultrasound diagnosis, 22-23 Cesarean section, 21, 83 future risk of placenta previa, 69 risk with ART, 76 Chang, Min Chueh, 5-6 chemotherapy effects on fertility, 125 fertility preservation, 10 chemotherapy agents risk of cardiotoxicity, 131 childhood cancer in children born after ART, 175 children born after ART adult health outcomes, 176 Angelman syndrome, 172–173 antenatal and perinatal complications, 168-170 Beckwith-Wiedemann syndrome, 172-173 cerebral palsy, 174 childhood cancer risk, 175 congenital malformations, 170-172 effects on their reproductive ability, 175-176 emotional well-being, 176-177 ethical considerations, 177-178 filiation, 183 imprinting disorders, 172-173 inheritance of male infertility, 175-176 long-term health implications, 174-177 neurodevelopment, 173-174 registers of data about, 168 risk of birth defects, 170-172 chimerism, 9

cancer treatment

of pregnancy, 20 birth defects, 2

Index

chorionic villous sampling, 89 chorionicity multiple gestation pregnancy after ART, 17, 87–88 ultrasound diagnosis, 17 chromosomal abnormalities and early pregnancy failure, 53 and ICSI, 97-102 chronic illness risk factor in IVF, 66 chronic stress impact on ART outcome, 78 clinical pregnancy definition, 51 clomiphene citrate treatment, 88 risk of early pregnancy failure, 57 color Doppler, 21 comparative genomic hybridization, 9-10 complications of ART associated with IVF treatment, 2-3 early pregnancy complications, 72-75 late pregnancy complications, 75-77 management challenges, 32-33 psychological complications, 77-78 range of potential complications, 32 - 33ultrasound diagnosis, 29-32 See also multiple gestation pregnancies; ovarian hyperstimulation syndrome. congenital malformations in children born after ART, 170-172 incidence with ICSI, 95-97 risk after ART, 76-77 risk in cancer survivor pregnancies, 131 congenital uterine anomalies, 26 cornual ectopic pregnancy ultrasound diagnosis, 22 corpus luteum ultrasound appearance, 21-22, 28 critical OHSS. See severe OHSS cross-border reproductive care, 183-184, 188 cryopreservation and early pregnancy failure, 59 cryotissue method, 139-140 embryos, 8-9, 112-119, 127 importance in ART, 108 oocytes, 8-9, 108-112, 127-128 ovarian tissue, 10, 128, 143 slow freezing of ovarian tissue, 139 slow-freeze protocols, 9 sperm, 93, 128-129 use for fertility preservation, 108 vitrification method, 9, 59 vitrification of ovarian tissue, 139-140

cyclophosphamide, 124 cystic fibrosis in ART offspring, 176 Darwin, Charles, 4 daunorubicin, 131 degenerative disorders therapeutic use of embryos, 2 depression impact of multiple pregnancies on parents, 77-78 risk for men during ART, 78 dermoid cysts ultrasound diagnosis, 28 developmental plasticity in utero, 176 dimethyl sulfoxide (DMSO), 8 dizygotic (DZ) twin pregnancies, 87 dizygotic (DZ) twins, 16-17 DNA amplification, 9 DNA methylation defects and ICSI, 102-103 donation of oocytes, 9 donor anonymity/identity issue, 185 donor eggs, 1 donor insemination earliest record, 1 donor sperm, 1 Doppler examination, 28 Down's syndrome prenatal screening biochemical markers, 149-150 factors affecting biochemical markers, 149-150 first-trimester ultrasound assessment, 149 high-order multiple pregnancy after ART, 160-163 nasal bone ultrasound assessment, 149 nuchal translucency test, 149 singleton pregnancy after ART, 151-155 twin pregnancies after ART, 155-160 doxorubicin, 131 early pregnancy complications, 72-75 ectopic pregnancy risk after ART, 73 - 74heterotopic pregnancy risk after ART, 74-75 miscarriage risk in ART, 72-73 molar pregnancy risk after ART, 75 early pregnancy failure, 36 acupuncture therapy, 61 and antiphospholipid syndrome (APS), 55 and antisperm antibodies, 55 and ICSI, 58-59 and in vitro techniques, 58-59 and increased natural killer (NK) cells, 56

and maternal age, 53 and obesity, 55 and polycystic ovarian syndrome (PCOS), 55 and subfertility diagnosis, 53-55 and thrombophilia, 55 and thyroid antibodies, 55-56 and uterine abnormalities, 55 ART dependent factors, 56-59 aspirin therapy, 61 blastocyst stage embryo transfer, 60 chromosome abnormalities, 53 cleavage stage embryo transfer, 60 clinical pregnancy, 51 definition, 51 due to natural causes, 52 effects of anxiety, 56 effects of assisted hatching, 59 effects of GnRH analogues, 58 effects of in vitro maturation (IVM) of oocvtes, 59 effects of ovarian stimulation agents, 57 - 58effects of ovarian stimulation/ ovulation induction, 56-58 embryo stage at transfer, 60 embryonic factors, 59-60 endometrioma surgery, 61 endometriosis, 54-55 ethicity risk factors, 56 following ART, 52 freshly fertilized embryos, 59 frozen and thawed embryos, 59 gamete intra-Fallopian transfer (GIFT), 58 glucocorticoid treatment, 61 heparin therapy, 61 incidence following ART, 52-53 interventions and therapies, 60-61 luteal phase support, 58 male factor subfertility, 55 meiotic non-disjunction, 51 metformin treatment, 61 monitoring and predicting, 61-63 number of embryo transfers, 60 number of oocytes retrieved, 60 patient-dependent factors, 53-56 possible causes, 52 preclinical (biochemical) pregnancy, 51 predictors of future ART treatment success, 61-63 preimplantation genetic diagosis (PGD), 60-61 preimplantation genetic screening (PGS), 60-61 quality of embryos, 59-60 racial risk factors, 56

Index

scale of preclinical pregnancy loss, 51 smoking risk factor, 56 weight risk factor, 56 zygote intra-Fallopian transfer (ZIFT), 58 See also miscarriage ectopic pregnancy, 2, 6, 14, 21-26 associated with severe OHSS, 48-49 biochemical markers, 23 incidence in ART patients, 21 management, 73-74 management of abdominal pregnancy, 26 management of cervical pregnancy, 25 management of Cesarean scar pregnancy, 25 management of interstitial pregnancy, 25 management of ovarian pregnancy, 25 medical management of tubal ectopics, 25 risk after ART, 73-74 risk factors, 21 surgical intervention, 23-25 ultrasound diagnosis, 14, 21-23 Edinburgh Postnatal Depression Scale (EPDS), 78 Edwards, Robert development of IVF treatment, 1-3, 6 - 7Nobel Prize (2010), 2, 7, 182 preimplantation genetic diagnosis (PGD), 9 ejaculatory dysfunction, 93 embryo cryopreservation, 8-9, 112-119 fertility preservation strategy, 127 main benefits, 112 outcome studies, 112-119 process, 108-109, 112 slow-freezing method, 112 vitrification method, 112 embryo transfer early experiments, 4-5 number of embryo transfers, 60 pressures for single embryo transfer, 83 regulation of number transferred, 82-83 stage of embryo at transfer, 60 embryonic diapause, 51 embryonic stem cell research, 2 embryos effects of cryopreservation, 59 quality of, 59-60 emotional distress associated with ART, 77–78

endometrial cancer, 124 endometrial resection, 69 endometriomas surgery, 61 ultrasound diagnosis, 28 endometriosis, 26 and early pregnancy failure, 54-55 endometritis, 69 epigenetic risks with ICSI, 102-103 epirubicin, 131 ethical issues access to ART, 183-184 artificial insemination, 1 avoidance of multiple gestation pregnancies, 188 children born after ART, 177-178 controversy over IVF, 2 cross-border reproductive care, 183-184, 188 donor anonymity/identity, 185 gametes donation, 184-186 gender selection, 187–188 lifestyle factors and access to ART, 184 PGD uses and abuses, 186-188 posthumous reproduction, 185-186 responsibility principle applied to ÂRT, 189–190 same-sex couples, 185 savior sibling, 186-187 social sex selection, 187-188 surrogacy, 184-186 use of donor eggs, 1 use of donor sperm, 1 ethnicity and risk of early pregnancy failure, 56 eugenics debate, 2, 188 preimplantation genetic diagnosis (PGD), 186 EUROCAT (European Registry of Congenital Anomalies and Twins), 95 fertility effects of cancer treatment, 124-126 effects of chemotherapy, 125 effects of radiotherapy, 125-126 emotional nature of, 124

implications for cancer survivors, 124 fertility preservation cancer patients, 10, 124 cancer patients tissue study, 140–145 incidence of cancers, 124 indications for, 124 ovarian tissue cryopreservation, 10 potential use of ovarian transplantation, 144

spontaneous pregnancy in cancer survivors, 129-130 use of cryopreservation, 108 fertility preservation strategies cryopreservation of embryos, 127 cryopreservation of oocytes, 127-128 cryopreservation of ovarian tissue, 128 cryopreservation of sperm, 128-129 for cancer patients, 126-129 gonadal suppression with GnRH agonists, 126 oophoropexy, 128 ovarian transposition, 128 fertility tourism, 83 fertilization first observations of, 4 fetal malpresentation risk in ART pregnancies, 70 fibroids, 26 fluorescence insitu hybridization (FISH), 9 follicle-stimulating hormone (FSH), 28 functional cysts, 26 functional ovarian cyst ultrasound diagnosis, 28 gamete intra-Fallopian transfer (GIFT), 7 - 8and early pregnancy failure, 58 gametes donation ethical issues, 184-186 Gardner, Richard, 9 gender selection ethical issues, 187-188 genital organ malformations in ART children, 96 genomic imprinting disorders, 172-173 risk with ICSI, 102-103 gestational diabetes, 36, 70, 77, 83 gestational hypertension, 83 glucocorticoid treatment, 61 gonadotrophic releasing hormone (GnRH) gonadal suppression, 126 gonadotrophin releasing hormone (GnRH) analogues and early pregnancy failure, 58 Heape, Walter, 4-5 hemoglobinopathies, 126 heparin therapy, 61 heterotopic pregnancy, 21 management, 74-75

risk after ART, 74–75 historical perspective cryopreservation of oocytes and embryos, 8–9

Index

historical perspective (cont.) development of IVF treatment, 6-7 development of PGD, 9-10 earliest use of ART, 1 early accounts of artificial insemination, 1 fertility testing in ancient Egypt, 1 first artificial insemination, 4 first embryo transfer experiments, 4-5 first human fertilization in vitro, 6 first IVF birth in Australia, 7 first observations of fertilization, 4 first successful oocyte donation, 9 in vitro culture of eggs, 5-6 in vitro fertilization of human eggs, 5-6 in vitro maturation (IVM) of oocytes, 10 microscopic examination of human spermatozoa, 4 nature of fertilization, 4 ovarian tissue cryopreservation, 10 role of male and female gametes, 4 use of ovarian stimulation for IVF, 6, 7 work of Gregory Pincus, 5-6 work of John Hunter, 4 work of Min Chueh Chang, 5-6 work of Patrick Steptoe, 6-7 work of Robert Edwards, 6-7 work of Spallanzani, 4 work of van Leeuwenhoek, 4 work of Walter Heape, 4-5 worldwide application of IVF, 7 Hodgkin's disease, 130, 145 Hodgkin's lymphoma, 10, 124, 131 human chorionic gonadotrophin (β-hCG), 20, 51 human embryonic development, 2 Human Fertilisation and Embryology Authority (HFEA), UK, 16, 60, 168, 183 human leukocyte antigen (HLA) matching, 9 savior sibling, 186 Hunter, John, 1, 4 hydrosalpinges, 26 hydrothorax, 47 hyperandrogenemia, 55 hyperinsulinemia, 55 hypertension associated with multiple gestation pregnancy, 76 hypospadias, 1 incidence in ICSI children, 95 hysteroscopic surgery, 69

idarubicin, 131 in vitro culture of eggs early experiments, 5-6 in vitro fertilization first human fertilization, 6 first successful experiments on human eggs, 5-6 See also IVF treatment in vitro maturation (IVM) of oocytes, 10, 59 in vitro techniques and early pregnancy failure, 58-59 induced labour, 69 infertility prevalence of the problem, 1 psychological and social impacts, 1 risk factor for obstetric complications, 76 stigma associated with, 1 inflamed Fallopian tubes ultrasound diagnosis, 32 insulin resistance, 55 International Committee for Monitoring Assisted Reproductive Technologies (ICMART), 4 international concerns about ART, 188 - 189cross-border reproductive care, 188 multiple pregnancies, 188 interstitial ectopic pregnancy management, 25 ultrasound diagnosis, 22 intracytoplasmic morphologically selected sperm injection (IMSI), 59 intracytoplasmic sperm injection (ICSI), 2, 8, 55, 108 and early pregnancy failure, 58-59 balancing risks and benefits, 103 concerns about safety, 93 epigenetic risks, 102-103 extent of use, 93 fertilization failure rate, 93 indications for use, 93 introduction of contaminants into the oocyte, 94 microbiological contamination of the oocyte, 94 potential to pass on male infertility, 175-176 rates of MZ twin pregnancy, 88 risk of chromosomal abnormalities, 97-102 safety concerns, 93 sperm retrieval methods, 93 use in severe male factor infertility, 93 See also pregnancy after ICSI intratubal transfer procedures, 7-8

intrauterine death, 83 intrauterine growth restriction (IUGR), 83 IVF treatment controversy over, 2 cost of medication, 10 cost of programs, 2 development by Robert Edwards, 6-7 ethical issues, 2 first test-tube baby, 2 incidence of multiple gestation pregnancy, 82 level of demand for, 2 National Health Service (U.K.) funding, 5 National Health Service (U.K.) provision, 2 possible complications, 2-3 risk of placenta accreta, 69 use of ovarian stimulation, 6, 7 work of Patrick Steptoe, 2 work of Robert Edwards, 1-3 worldwide application, 7 Jonas, Hans, 189 Klinefelter's syndrome, 175 laparoscopy technique of Steptoe, 6-7 Lasix, 44 late pregnancy complications, 75-77 congenital malformations, 76-77 infertility as a risk factor, 76 low birth weight, 76-77 perinatal mortality, 76-77 placenta previa, 76 pregnancy-induced hypertension, 76 preterm labor/birth, 76-77 risk of adverse events after AFT, 76-77 vaginal bleeding, 76 late-onset disorders use of PGD, 186 legal issues access to ART, 183-184 cross-border reproductive care,

cross-border reproductive care, 183–184, 188 donor anonymity/identity, 185 filiation, 183 gametes donation, 184–186

- posthumous reproduction, 185–186
- same-sex couples, 185
- social sex selection using PGD, 187–188
- surrogacy, 184–186
- leukemias, 124
- lifestyle factors and access to ART, 184

low birth weight, 36, 76-77

Cambridge University Press 978-1-107-00647-8 - Pregnancy After Assisted Reproductive Technology Edited by Eric R. M. Jauniaux and Botros R. M. B. Rizk Index More information

Index

and adult health issues, 176 risk in multiple gestations, 83 risk with ART, 66 luteal phase support and early pregnancy failure, 58 luteinizing hormone (LH), 28 male factor infertility use of ICSI, 93 male factor subfertility and early pregnancy failure, 55 male infertility transmission to offspring of AFT, 175-176 malignant ovarian tumors ultrasound diagnosis, 28-29 Mantegazza, Paolo, 1 maternal age and early pregnancy failure, 53 and multiple gestation pregnancy, 87 and risk of complications in pregnancy, 66, 69 Medical Research Council (U.K.), 2 meiotic non-disjunction and pregnancy failure, 51 men risk of depression during ART, 78 metformin, 61 microdeletions transmission to ART offspring, 176 microsurgical epididymal sperm aspiration (MESA), 8, 93 miscarriage in pregnancies following OHSS, 37-38 increased risk in multiple gestations, 83 management of, 20-21 risk in ART, 72-73 ultrasound diagnosis, 17-21 See also early pregnancy failure mitoxantrone, 131 molar pregnancy risk after ART, 75 monogenic diseases development of PGD for, 9-10 monozygotic (MZ) twin pregnancies amnionicity, 87 chorionicity, 87 possible placentation configurations, 87,88 rates of, 87 risk of adverse events, 87-88 monozygotic (MZ) twins, 16 ovarian transplantation between, 137 mucinous cystadenomas, 28 multifetal pregnancy reduction (MFPR) after ART, 88-89, 90, 188 screening before, 161-162

multiple gestation pregnancies, 36 and advanced maternal age, 87 ART patient awareness of risk, 82 ART patients' attitudes towards, 82 chorionicity after ART, 87-88 complication of ART, 2 Down's syndrome prenatal screening, 160-163 elective reduction after ART, 88-89.90 financial implications, 83-84 impacts on parents, 83-84 incidence after IVF, 82 international concerns about, 188 medical and healthcare costs, 83-84 multifetal pregnancy reduction (MFPR) after ART, 88-89, 90, 161-162, 188 outcomes and consequences, 83-85 perinatal risks, 82 potential complication of ART, 66 pressures for single embryo transfer, 83 psychological impact on parents, 77-78 rate of MZ twinning after ART, 88 rates of MZ twin pregnancies, 87 reasons for high incidence after ART, 82 reasons to avoid, 188 responsibilities of ART centers, 90 risk associated with ART, 82 risk of adverse events in MZ twins, 87 - 88risk of obstetric complications, 66 risks for mother and babies, 83 screening before fetal reduction, 161 - 162serum screening, 160-161 twin-twin transfusion syndrome (TTTS), 87 ultrasound findings, 16-17 ultrasound screening, 161 vanishing twin after ART, 85-87 zygosity after ART, 87-88 myomectomy, 69 nasal bone prenatal ultrasound assessment, 149 National Health Service (U.K.) IVF treatment funding, 5

IVF treatment funding, 5 IVF treatment provision, 2 natural killer (NK) cells and early pregnancy failure, 56 Nelson, Henry, 4 neonatal intensive care unit, 83, 84 neoplastic adnexal lesions, 26 neurodevelopment of children born after ART, 173–174 neurogenetic disorders incidence after ART, 102 nuchal translucency test, 149, 158-160 obesity and access to ART, 184 and early pregnancy failure, 55 risk of adverse pregnancy and birth outcomes, 69-70 obstructive azoospermia, 93 sperm recovery techniques, 8 oligospermia, 93, 124, 176 oligozoospermia, 102 oocyte collection risks associated with, 2 oocyte cryopreservation, 8-9, 108-112 fertility preservation strategy, 127 - 128outcome studies, 109-112 process, 108-109 slow-freezing method, 108-109 vitrification method, 109 oocyte donation, 9 preeclampsia risk factor, 69 oocyte retrieval number retrieved, 60 oocytes in vitro maturation (IVM), 10 oophoropexy fertility preservation strategy, 128 oral contraceptive pill, 6 ovarian cysts surgery for ruptured cysts, 48 ovarian ectopic pregnancy management, 25 ultrasound diagnosis, 23 ovarian fibromas, 26 ovarian hyperstimulation, 172 ovarian hyperstimulation syndrome (OHSS), 2, 10 clinical features, 29, 36 complication of ART, 36 definition, 36 early and late pregnancy outcome, 37 early onset, 36-37 incidence, 36 late onset, 36-37 miscarriage rates in pregnancies following, 37–38 obstetric outcomes after, 38-40 potential effect on pregnancy outcome, 36 pregnancy rates, 36 ultrasound diagnosis, 29 See also severe OHSS ovarian stimulation for IVF treatment, 6, 7 ovarian stimulation agents and early pregnancy failure, 57-58

Index

ovarian tissue cryopreservation, 10, 128 slow-freezing method, 139 slow freezing vs. vitrification, 143 vitrification method, 139-140 ovarian tissue grafts, 137 long-term evaluation, 137 ovarian torsion and severe OHSS, 48 clinical features, 31-32 management, 31-32 ultrasound diagnosis, 31-32 ovarian transplantation between MZ twins, 137 cancer patients tissue study, 140-145 cancer survivor transplant results, 141-142 cryoinjury in preserved tissue, 143 frozen tissue transplants, 138 grafting technique, 137 patient population, 137 potential for clinical use, 146 potential for fertility preservation, 144 risk of ovarian metastasis in cancer patients, 145 surgery for fresh transplants, 137-138 ovarian transposition fertility preservation strategy, 128 ovarian tumors, 26 ultrasound diagnosis, 28-29 paracentesis for severe OHSS, 47 partial zona dissection (PZD), 8 pelvic hematoma or abscess, 26 pelvic infection ultrasound diagnosis, 32 pelvic inflammatory disease, 26 pelvic surgery, 66 percutaneous epididymal sperm aspiration (PESA), 8, 93 pericarditis, 131 perinatal mortality, 66, 76-77 Pincus, Gregory, 5-6 placental abruption, 36 placenta accreta postpartum hemorrhage, 69 risk factors, 69 placenta previa risk after ART, 76 risk factors, 69 polar body testing for PGD, 9-10 polycystic ovarian syndrome (PCOS), 59,66 and early pregnancy failure, 55 risk of adverse pregnancy and birth outcomes, 69-70 polymerase chain reaction (PCR), 9 posthumous reproduction, 185-186

postpartum hemorrhage, 77, 83 placenta accreta, 69 pouch of Douglas, 32 Prader-Willi syndrome, 102 pre-ART medical assessment, 70 preclinical (biochemical) pregnancy definition, 51 preeclampsia, 76 risk factors, 70 pregnancy after ART potential complications, 32-33 pregnancy after ICSI balancing risks and benefits, 103 DNA-methylation defects, 102-103 epigenetic risks, 102-103 genomic imprinting disorders, 102-103 incidence of congenital abnormalities, 95-97 perinatal risks, 94-95 procedure-related risks, 94 risk of chromosomal abnormalities, 97-102 pregnancy-induced hypertension, 36, 69, 76, 83 pregnancy of unknown location (PUL), 20 preimplantation aneuploidy screening (PGS), 93 preimplantation genetic diagnosis (PGD), 2, 9-10, 60-61, 93 ethical dilemmas, 186 ethical issues, 186-188 eugenics debate, 186 gender selection, 187-188 late-onset disorders, 186 savior sibling, 186-187 social sex selection, 187-188 uses and abuses, 186-188 preimplantation genetic screening (PGS), 60-61 preimplantation HLA matching, 10 prematurity risk in multiple gestations, 83 prenatal advice for cancer survivors, 131 prenatal screening biochemical markers for Down's syndrome, 149 factors affecting biochemical markers, 149-150 first-trimester ultrasound assessment, 149 nasal bone ultrasound assessment, 149 nuchal translucency test, 149, 158-160 prenatal screening after ART high-order multiple pregnancies, 160-163

singleton pregnancy, 151-155 twin pregnancies, 155-160 preterm delivery, 36, 76-77 risk in multiple gestation pregnancy, 83 risk with ART, 66 primiparity risk factor for obstetric complications, 69 progesterone, 20 pseudosac ultrasound diagnosis, 14-16 psychological complications of ART, 77-78 effects of chronic stress, 78 impact of multiple pregnancies, 77-78 pulmonary effusions, 47 race and risk of early pregnancy failure, 56 radiotherapy effects on fertility, 125-126 fertility preservation strategies, 128 use of ovarian transposition/ oophoropexy, 128 retinoblastoma in children born after IVF, 103 retrograde ejaculation, 93 rheumatoid arthritis, 126 Royal Society, London, 1, 4, 7 ruptured cysts ultrasound diagnosis, 32 salpingo-oophorectomy, 32 same-sex couples access to ART, 185 savior sibling ethical issues, 186-187 semen banking, 93 serous cystadenomas, 28 severe OHSS and thrombophilia, 45-47 correction of circulatory volume, 40 - 43diuretics, 44 dopamine treatment, 44-45 ectopic pregnancy associated with, 48-49 electrolyte replacement, 43 management considerations, 49 management of pregnancy following, 49 medical treatment, 40-47 ovarian torsion, 48 paracentesis, 47 surgery for ruptured cysts, 48 surgical treatment, 47-49 thromboembolism, 47

submucous fibroids, 69

subzonal insemination (SUZI), 8

Index

sex chromatin body, 9 sex-linked diseases, 9 sexing of blastocysts, 9 Silver-Russell syndrome, 102 Sims, James Marion, 1 single embryo transfer benefits of, 83 increasing acceptance of, 83 singleton pregnancy after ART Down's syndrome screening, 151-155 first-trimester screening, 153 maternal age and risk of complications, 66 maternal age risk factor, 69 oocyte donation, 69 perinatal outcome studies, 66-68 preeclampsia risk factors, 69 prenatal screening, 151-155 previous Cesarean as risk factor, 69 primiparity risk factor, 69 risk factors for adverse outcome, 69 - 70risk of adverse perinatal outcome, 66 risk of breech presentation, 70 risk of complications, 66 risk of fetal malpresentation, 70 risk of placenta accreta, 69 risk of placenta previa, 69 risk of stillbirth, 70 risks associated with obesity, 69-70 risks associated with PCOS, 69-70 second-trimester screening, 151-153 sequential screening, 153-155 small for gestational age (SGA) babies, 83 smoking and access to ART, 184 and risk of early pregnancy failure, 56 social sex selection ethical issues, 187-188 Spallanzani, Lazzaro, 4 sperm cryopreservation, 128-129 sperm impairment intracytoplasmic sperm injection (ICSI), 8 sperm retrieval methods, 8, 93 stem cell research, 2, 9 stem cell transplantation, 10 Steptoe, Patrick, 2 laparoscopy technique, 6-7 work on IVF, 6-7 stillbirth risk with ART, 70 stress associated with ART, 77-78 impact on ART outcome, 78 subfertility diagnosis and early pregnancy failure, 53-55

surrogacy ethical issues, 184-186 testicular biopsy (TESE), 8 testicular cancer, 124, 126 testicular sperm aspiration (TESA), 93 testicular sperm extraction (TESE), 93 testis sensitivity to chemotherapy, 125 test-tube babies first test-tube baby, 6-7 Louise Brown, 2, 6-7 thoracocentesis, 47 thromboembolism and OHSS, 47 thrombophilia and early pregnancy failure, 55 and OHSS, 45-47 thyroid antibodies and early pregnancy failure, 55-56 thyroid disorders, 66 tubo-ovarian pathology ultrasound diagnosis, 26-29 twin pregnancies after ART combined NT and serum markers, 158-160 Down's syndrome screening, 155-160 first-trimester screening, 156-158 second-trimester screening, 155-156 twin-twin transfusion syndrome (TTTS), 87 ultrasound diagnosis appearance of the corpus luteum, 21-22, 28 complications of ART, 29-32 dermoid cysts, 28 ectopic pregnancy, 14, 21-23 endometriomas, 28 evaluation of ultrasound characteristics, 26-27 functional ovarian cyst, 28 inflamed Fallopian tubes, 32 malignant ovarian tumors, 28-29 miscarriage, 17-21 mucinous cystadenomas, 28 ovarian hyperstimulation syndrome (OHSS), 29 ovarian torsion, 31-32 pattern recognition, 26-27 pelvic infection, 32 pseudosac, 14-16 ruptured cysts, 32 serous cystadenomas, 28 tubo-ovarian pathology, 26-29 use in obstetrics and gynecology, 14

uterine fibroids, 26 uterine pathology, 26 ultrasound in normal pregnancy amnionicity of multiple pregnancies, 17 chorionicity of multiple pregnancies, 17 development in early pregnancy, 14 - 16first scan after conception, 14-16 multiple pregnancies, 16-17 transvaginal approach, 14 ultrasound prenatal screening first-trimester assessment, 149 nasal bone assessment, 149 nuchal translucency test, 149 ultrasound screening multiple gestations after ART, 161 unicornuate uterus, 26 uterine abnormalities and early pregnancy failure, 55 uterine fibroids, 26 uterine pathology bicornuate uterus, 26 congenital uterine anomalies, 26 fibroids, 26 ultrasound diagnosis, 26 unicornuate uterus, 26 vaginal bleeding pregnancy complication, 76 van Leeuwenhoek, Anton Philips, 4 vanishing twin after ART, 85-87 vasectomy semen banking prior to, 93 Vatican objection to IVF, 2, 7 vitrification method, 9, 59 embryo cryopreservation, 112 oocyte cryopreservation, 109 ovarian tissue cryopreservation, 139-140 weight, and risk of early pregnancy failure, 56 Wilms' tumor, 130, 131 Wood, Carl Monash research team, 6 X-linked mental retardation, 9 zona pellucida, 8, 59 zygosity multiple gestation pregnancy after ART, 87-88 zygote intra-Fallopian transfer (ZIFT), 7 - 8and early pregnancy failure, 58