

Contents

List of contributors	xxv
Preface	xxix

Section 1 Gynaecology

1 Obesity, the onset of adolescence and menstrual disorders	3
<i>Tahir Mahmood</i>	
1.1 Role of BMI charts	3
1.2 Aetiology	3
1.3 Summary	13
Reference	14
Further reading	14
2 Polycystic ovary syndrome	15
<i>Tahir Mahmood</i>	
2.1 Introduction	15
2.1.1 Clinical presentation	15
2.1.2 Diagnostic criteria	16
2.2 Diagnosis	17
2.2.1 Differential diagnosis	18
2.2.2 Hypersecretion of luteinising hormone	19
2.2.3 Hyperinsulinaemia	20
2.3 Obesity, polycystic ovary syndrome, and related indices	21
2.3.1 Adipokines	21
2.4 Comorbidities	22
2.4.1 Women not wishing a pregnancy	25
2.5 Other contraception consideration	26
2.5.1 Contraceptive methods	26
Further reading	27
3 Hirsutism	29
<i>Tahir Mahmood</i>	
3.1 Clinical features and symptoms	31
3.2 Examination	31
3.2.1 Causes of virilism	39
3.3 Summary	40
Further reading	40

4	Contraception for obese and super obese women	41
	<i>Omar Thanoon, Asma Gharaibeh and Tahir Mahmood</i>	
4.1	Risks associated with obesity during pregnancy	41
4.2	Classification of obesity	42
4.3	Metabolic disorders associated with obesity in nonpregnant obese	42
4.4	Mechanisms by which obesity could potentially affect contraceptive efficacy	42
4.4.1	How obesity may affect contraceptive efficacy?	42
4.5	Potential concerns with obesity and contraception	43
4.5.1	Contraceptives and weight gain	43
4.5.2	Potential mechanisms by which contraceptives can cause weight gain	43
4.5.3	Safety of hormonal contraceptives in obese women	44
4.5.4	Contraceptive issues after bariatric surgery	46
4.5.5	Intrauterine contraceptive devices in obese women	47
4.5.6	Levonorgestrel-containing intrauterine systems	47
4.5.7	Sterilisation procedures in obese women	48
4.6	Methods of sterilisation	48
4.6.1	Laparotomy	48
4.6.2	Laparoscopy	49
4.6.3	Hysteroscopy	49
	Further reading	49
5	Contraception after bariatric surgery	51
	<i>Tahir Mahmood</i>	
5.1	Introduction	51
5.1.1	Reproductive and general health consequences of bariatric surgery	52
5.2	Obesity and contraception issues	52
5.2.1	Immediate postsurgery contraceptive advice	52
5.2.2	Oral preparations	53
5.3	Progestogen-only pill	53
5.3.1	Copper intrauterine device	54
5.3.2	Progestogen-only injection	57
5.3.3	Barrier methods	58
	Further reading	58
6	Obesity and sexual health	61
	<i>Tahir Mahmood</i>	
6.1	Sexual behaviour	61
6.2	Obesity and sexual function	62
6.3	Obesity and sexual health outcomes	62
6.4	Managing sexuality issues of young obese women	63

Reference	70
Further reading	70
7 Obesity: male and female infertility	71
<i>Suresh Kini</i>	
7.1 Introduction	71
7.2 Epidemiology	71
7.3 Female infertility	71
7.3.1 Transgenerational inheritance	72
7.3.2 Pathophysiological basis of infertility in obese women	72
7.3.3 The clinical effects of obesity on female infertility	73
7.3.4 Effects on the oocyte	74
7.3.5 Effects on the embryo	74
7.3.6 Effect on the endometrium	74
7.3.7 Challenges of managing obese women	74
7.3.8 Funding	75
7.3.9 Pelvic ultrasound	75
7.3.10 Ovulation induction	75
7.3.11 Tubal investigations	75
7.3.12 Ovarian reserve	76
7.4 Treatment options	76
7.4.1 Weight loss	76
7.4.2 Physical activity	76
7.4.3 Barriers to weight loss in infertile women	76
7.4.4 Dietary factors	76
7.4.5 Bariatric surgery	77
7.4.6 Polycystic Ovarian Syndrome (PCOS) women	77
7.4.7 Types of weight-loss medication	77
7.5 Male infertility	78
7.6 Conclusion	78
Further reading	79
8 Obesity—recurrent miscarriage	81
<i>Mythili Ramalingam</i>	
8.1 Introduction	81
8.2 Obesity and miscarriage	81
8.3 Obesity and recurrent miscarriage	81
8.4 Aetiologies of recurrent miscarriage	82
8.5 Polycystic ovarian syndrome	83
8.6 Ovarian dysfunction	83
8.7 Endometrial changes in obesity	83
8.8 Immunological factors	84
8.9 Management of recurrent miscarriage	85
8.10 Conclusion	86
Further reading	86

9	Obesity and assisted conception	87
	<i>Mythili Ramalingam</i>	
9.1	Introduction	87
9.1.1	Cycle effects	88
9.1.2	Effects on the oocyte	88
9.1.3	Patient selection	89
9.1.4	Stimulation regime	89
9.1.5	Monitoring of stimulation	90
9.1.6	Egg collection	91
9.1.7	Embryo transfer	91
9.1.8	hCG trigger	91
9.1.9	Luteal support	91
9.1.10	Pregnancy rate	92
9.1.11	Clinical pregnancy rates	92
9.1.12	Miscarriage rate	92
9.1.13	Live birth rate	93
9.2	Conclusion	94
10	Medical and surgical interventions to improve fertility outcomes	95
	<i>Suresh Kini</i>	
10.1	Introduction	95
10.2	Lifestyle interventions	95
10.2.1	Dietary interventions	96
10.2.2	Diet	96
10.2.3	Role of exercise	96
10.3	Medical interventions	97
10.3.1	Weight-loss medications and fertility outcomes	97
10.3.2	Metformin	97
10.3.3	Sibutramine	98
10.3.4	Orlistat	98
10.3.5	Liraglutide	98
10.3.6	Inofolic acid	99
10.4	Surgical Interventions to improve fertility potential in obese men and women	99
10.4.1	Bariatric surgery as a weight-loss measure	99
10.4.2	Types of bariatric surgery	100
10.4.3	The impact of bariatric surgery on fertility	100
10.4.4	The potential of bariatric surgery for a negative impact on fertility	101
10.4.5	Pregnancy after bariatric surgery	101
10.4.6	Assisted reproduction after bariatric surgery	101
10.4.7	Obesity in the male	101
10.4.8	Barriers to weight loss	102
10.5	Conclusion	102
	Further reading	102

11	Heavy menstrual bleeding	105
	<i>Tahir Mahmood</i>	
11.1	Introduction	105
11.1.1	Physiology of menstruation	105
11.1.2	FIGO classification of AUB (PALM-COEIN)	106
11.2	Polyp	106
11.3	Adenomyosis	107
11.4	Leiomyoma	107
11.5	Malignancy and hyperplasia	107
11.5.1	Coagulopathy	108
11.6	Ovulatory dysfunction	108
11.7	Endometrial	108
11.7.1	Iatrogenic	109
11.8	Structured history taking in women with AUB	110
11.9	Assessment of women presenting with HMB	111
11.10	Investigations	111
11.11	Management of women with HMB/AUB	111
11.11.1	Nonhormonal treatments	111
11.12	Nonsteroidal anti-inflammatory drugs	112
11.13	Hormonal options	113
11.13.1	Levonorgestrel intrauterine system	113
11.13.2	Combined hormonal contraception	113
11.14	Conclusion	116
	Further reading	116
12	Obesity, incontinence, and pelvic floor dysfunction	117
	<i>Chu Chin Lim</i>	
12.1	Urinary incontinence	117
12.1.1	Introduction	117
12.1.2	Epidemiology	117
12.1.3	Pathophysiology urinary incontinence in the obese population	118
12.1.4	Nonsurgical treatment for urinary incontinence	118
12.2	Obesity and stress urinary incontinence	119
12.2.1	Obesity and overactive bladder	119
12.2.2	Pharmacological treatment	120
12.2.3	Sacral neuromodulation	120
12.2.4	Onabotulinum toxin A (BoNT-A)	120
12.3	Anal incontinence	121
12.3.1	Pathophysiology anal incontinence in the obese population	121
12.3.2	Weight loss and anal incontinence	121
12.3.3	Obesity and treatment for anal incontinence	122
12.4	Pelvic floor dysfunction	122
12.4.1	Weight loss and uterovaginal prolapse	122

12.4.2	Pelvic organ prolapse surgery and obesity	122
12.5	Conclusion	123
13	Obesity and pelvic organ prolapse	125
	<i>Chu Chin Lim</i>	
13.1	Introduction	125
13.2	Obesity as risk factor for pelvic organ prolapse	125
13.3	Weight loss and the effects upon pelvic organ prolapse	126
13.4	Prolapse surgery in the obese woman	127
13.5	Recurrence of pelvic organ prolapse	127
13.6	Conclusion	128
	Key points	129
14	Obesity and chronic pelvic pain	131
	<i>Chu Chin Lim</i>	
14.1	Introduction	131
14.2	Obesity and pain physiology	131
14.3	Genetics of obesity and pelvic pain	132
14.4	Psychological impact of obesity and chronic pain	133
14.5	Impact of obesity on assessment of chronic pelvic pain	133
14.6	Impact of obesity on treatment of women with chronic pelvic pain	134
14.7	Impact of obesity on surgical management of women with chronic pelvic pain	134
14.8	Obesity and endometriosis	135
14.9	Obesity and adenomyosis	136
14.10	Obesity and abdominal myofascial pain syndrome	136
14.11	Obesity and nongynecological causes of chronic pelvic pain	136
14.12	Conclusion	136
	Further reading	137
15	Obesity and clinical psychosomatic women's health	139
	<i>Chu Chin Lim</i>	
15.1	Introduction	139
15.2	Psychosomatic aspect of menstrual problems and obesity	139
15.2.1	Pathophysiology of psychosomatic menstrual issues	139
15.3	Psychosomatic insights into menstrual problems in the obese	139
15.4	Clinical psychosomatic approach to menstrual disorder	140
15.5	Clinical psychosomatic approach to premenstrual syndrome	140
15.6	Psychosomatic aspect of infertility and obesity	141
15.7	Psychosomatic aspect of gender violence and obesity	142
15.8	Psychosomatic aspect of severe pelvic/perineal dysfunction and obesity	142
15.9	Psychosomatic aspect of gynaecological tumours and obesity	143
15.10	Conclusions	143
	Further reading	144

16	Obesity and cancer	145
	<i>Chu Chin Lim and Tahir Mahmood</i>	
16.1	Overview	145
16.2	Epidemiological evidence for links between obesity and cancer	145
16.3	Cancers unique to or more common in women	146
16.4	Potential mechanisms for oncogenesis	146
16.5	Clinical implications for prevention and treatment of cancer in obese patients	147
16.6	Ongoing needs for research	148
16.7	Endometrial cancer	149
16.8	Breast cancer	149
16.9	Ovarian cancer	149
16.10	Cervical cancer	150
16.11	Mechanisms relating obesity to female malignancies	150
16.12	Effect of obesity on management of female malignancies	151
16.13	Oncogenetics	152
16.14	Future directions	153
	Further reading	153
17	Obesity and breast cancer	155
	<i>Chu Chin Lim</i>	
17.1	Epidemiology	155
17.2	Pathogenic mechanisms	155
17.2.1	Sex hormones	156
17.2.2	Hyperinsulinaemia	156
17.2.3	Adipokines	157
17.2.4	Chronic inflammation	157
17.2.5	Microbiome	157
17.3	Diagnosis	158
17.4	Therapy	158
17.4.1	Surgery	158
17.4.2	Radiotherapy	158
17.4.3	Chemotherapy	159
17.4.4	Endocrine	159
17.5	Prognosis	159
	Further reading	160
18	Female obesity and osteoporosis	161
	<i>Chu Chin Lim</i>	
18.1	Introduction	161
18.2	Normal bone metabolism	162
18.2.1	Interaction of various hormones	162
18.3	Epidemiology of osteoporosis and obesity	162
18.4	Relationship between fat and bone: epidemiologic and clinical observations	163

18.5	Hormonal effect of obesity and osteoporosis	164
18.5.1	Beta-cell hormones (pancreatic hormones)	164
18.6	Adipocyte hormones	164
18.6.1	Leptin	164
18.6.2	Adiponectin	165
18.6.3	Resistin	165
18.6.4	IL-6	165
18.6.5	Adipsin	165
18.7	Obesity of the bone	166
18.8	Clinical and diagnostic implication of the concept obesity of the bone	166
18.9	Treatment implications of the concept obesity of the bone	166
18.10	Bariatric surgery and bone health	167
18.11	Management after Roux-en-Y gastric bypass	167
18.12	Pragmatic approach for obese women	168
18.12.1	What should a physician advise to an obese woman?	168
18.13	Conclusion	168
	Further reading	169
19	Menopause and hormone replacement therapy	171
	<i>Chu Chin Lim</i>	
19.1	Introduction	171
19.2	Oestrogens and menopausal obesity	171
19.3	Lifestyle intervention and hormone replacement therapy	172
19.4	Healthy lifestyle	174
19.5	Progesterone	175
19.6	Emerging therapies	176
19.7	Conclusion	177
	Further reading	178
20	Intraoperative care during gynaecology surgery	179
	<i>Chu Chin Lim and Tahir Mahmood</i>	
20.1	Introduction	179
20.2	Decision-making about surgery	179
20.3	Physiological changes in obese women	180
20.4	Preoperative evaluation	181
20.5	Equipment and general considerations	181
20.6	Anaesthetic challenges	181
20.7	Thromboprophylaxis	182
20.8	Sepsis prophylaxis	182
20.9	Intraoperative challenges	182
20.9.1	Laparoscopic surgery	182
20.10	Open abdominal surgery	183
20.11	Postoperative issues	183
20.12	Conclusion	184
	Further reading	184

Section 2 Obstetrics

21	Pathological basis of effects of obesity on pregnancy outcome	187
	<i>Tahir Mahmood</i>	
21.1	Introduction	187
21.2	Classification of body mass index	187
21.2.1	Waist circumference	188
21.2.2	Visceral obesity is linked with elevated oxidative stress and systemic inflammation	189
21.3	Increased disease burden secondary to obesity	189
21.3.1	Obesity was linked in up to 20% of all cancer-related deaths	189
21.3.2	US data show that the risk of developing obesity-related cancer appears to increase progressively in successively younger birth cohorts	189
21.3.3	Gynaecology	189
21.3.4	Obstetrics	190
21.4	Other comorbidities	190
21.5	Physiological changes during pregnancy in normal weight women	190
21.6	First and second trimester of pregnancy	190
21.7	Third trimester	191
21.8	In normal weight women fat distribution	191
21.9	Amino acid metabolism in normal weight women	191
21.10	Pathological changes in obese women during pregnancy	192
21.11	There is increased mass of metabolic reactive visceral adipose tissue	192
21.12	Hyperlipidaemia	192
21.13	Low-grade chronic inflammation	193
21.14	Adiposity and pregnancy-specific insulin resistance	194
21.15	Glucose metabolism in obese women	194
21.15.1	The mechanism of the link between obesity and IR is multifactorial, and includes effects on	194
21.15.2	Ectopic fat deposition leads to	195
21.16	Amino acid metabolism in obese women	195
21.17	Visceral adiposity as modulator for proinflammatory—prothrombotic state	195
21.18	Raised serum leptin	195
21.19	InterLeukin-6	196
21.19.1	Adiponectin	196
21.20	Plasminogen activator inhibitor-1	196
21.21	TNF- α	197
21.22	Angiotensinogen	197
21.23	Ghrelin	197
21.23.1	Unhealthy adipokines are upregulated in obesity: elevated levels of the following are also noted	198

21.24	Bone health	198
21.24.1	Cardiac disease and cardiovascular alterations during obese pregnancy	199
21.25	Long-term changes in cardiac function induce	199
21.25.1	Increased risk of arterial thrombosis in obesity is due to	199
21.25.2	Increased risk of venous thromboembolism in obesity is due to	199
21.26	Smoking, obesity, and cardiovascular disease risk	200
21.27	Preeclampsia	200
21.28	Maternal obesity and in-utero programming	201
21.28.1	Animal studies have reported that	201
21.29	Human studies have shown	201
21.29.1	Epigenetics	201
21.29.2	Evidence	201
21.30	Various hypotheses of transmission of intergenerational obesity are as follows	202
21.30.1	Intergenerational obesity	202
21.30.2	Offspring of diabetic mothers had	203
21.31	Summary	204
	Further reading	204
22	Preconception care for obese women	205
	<i>Gamal Sayed and Tahir Mahmood</i>	
	Further reading	211
23	Weight optimisation strategies in pregnant obese women	213
	<i>Alasdair Hardie and Tahir Mahmood</i>	
23.1	Guidelines on maternal weight gain during pregnancy	213
23.2	Antenatal consequences of increased gestational weight gain	213
23.3	Postpartum consequences of increased gestational weight gain	214
23.4	Consequences of increased gestational weight gain for the child	214
23.5	Consequences of low gestational weight gain	214
23.6	Strategies for weight management	215
23.7	Exercise in pregnancy	216
23.8	Summary of weight optimisation in pregnancy	216
	Further reading	217
24	Early pregnancy and obesity	219
	<i>Swetha Bhaskar and Ibrahim Alsharaydeh</i>	
24.1	Management	220
24.1.1	Preconception and Early Pregnancy	220
24.1.2	Antenatal	220
	Further reading	221

25	Ultrasound scanning in early pregnancy and foetal abnormality screening in obese women	223
	<i>Smriti Prasad and Asma Khalil</i>	
25.1	Introduction	223
25.2	Ultrasound scanning in early pregnancy	223
25.2.1	Role of early pregnancy scan in obese pregnant women	223
25.2.2	First Trimester screening (nuchal translucency scan and dual marker)	224
25.2.3	Fetal abnormality screening in obese women	225
25.3	Conclusion	227
	Conflict of interests	227
	Funding source	227
	Further reading	227
26	Antenatal care for obese women	229
	<i>Gamal Sayed and Tahir Mahmood</i>	
26.1	Introduction	229
26.2	According to the WHO (2016) report	229
26.3	Antepartum care of obese women	229
26.4	Prepregnancy counselling	230
26.5	Antenatal care	230
26.5.1	Location, facilities, and personnel	230
26.6	The first antenatal visit	231
26.7	Measuring weight and height for risk stratification	231
26.8	Diet and lifestyle modifications	231
26.9	Weight gain in pregnancy	232
26.10	Overview of antenatal tests appointments and scans	234
26.11	Mode and timing of delivery	234
26.12	Planning for delivery	234
26.13	Post delivery	235
	Further reading	235
27	Management of pregnancy in elderly obese women	237
	<i>Tahir Mahmood and Gamal Sayed</i>	
27.1	Prevalence	237
27.2	Pregnancy outcomes in relation to advanced maternal age	238
27.3	Late pregnancy complications	238
27.4	Intrapartum and postpartum complications	239
27.5	Management	239
27.5.1	Prepregnancy	239
27.6	Antenatal	240
27.6.1	First trimester	240
27.6.2	Second trimester	241
27.6.3	Third trimester	241

27.6.4	Intrapartum care	241
27.6.5	Postnatal	242
	Further reading	242
28	Novel viruses and pregnancy	243
	<i>Nirmala Mary and Nithiya Palaniappan</i>	
28.1	Introduction	243
28.2	Virus and pathogenesis	243
28.3a	Ebola virus (EBV) (Filoviridae: 1976–2021)	245
28.3b	Zika virus (Flavivirus: 2015—current)	249
28.3c	MERS-CoV (2012—current)	251
28.3d	H1N1 virus (Ortho-myxovirus: 2009–2010)	252
28.3e	Coronavirus—SARS-CoV-2 (COVID-19)	254
	Further reading	257
29	Infections during pregnancy	259
	<i>Tahir Mahmood</i>	
29.1	Immunology of pregnancy	259
29.2	In nonpregnant state	259
29.3	In pregnancy	259
29.4	Effect of obesity on the immunology	260
29.5	How to interpret the screening tests when there is a suspicion of infection?	260
29.6	Urinary tract infection	261
29.7	Group B Streptococcus (<i>Streptococcus agalactiae</i>)	261
29.8	Management of positive group B streptococcus result	261
29.9	Managing women in labour with positive group B streptococcus screening	262
29.10	Genital herpes	262
29.11	Classical features of primary herpes simplex virus infection are	262
29.12	Treatment is influenced by	262
29.13	Chlamydia trachomatis	264
29.14	Chicken pox (varicella zoster virus)	264
29.15	Exposure to chicken pox in adulthood	264
29.16	The features of foetal varicella syndrome	265
29.17	Labour management and neonatal varicella	265
29.18	Rubella	265
29.19	Toxoplasmosis	265
29.20	Parvovirus B19	266
29.21	Cytomegalovirus infection	266
29.22	Malaria	267
29.23	Presentation	267
29.24	Risks during pregnancy	268
29.25	Summary	268
	Further reading	269

30	Weight management during pregnancy	271
	<i>Dominique Baker and Tahir Mahmood</i>	
30.1	Introduction	271
30.2	Weight gain guidelines	271
30.3	Risks of inappropriate weight gain	272
30.3.1	Information gap	272
30.3.2	Inadequate weight gain is another risk factor	272
30.4	Should women be weighed during antenatal period?	273
30.4.1	Practice in the United Kingdom	273
30.5	Exercise	273
30.6	Diet	273
30.7	Achieving healthy lifestyles	274
30.8	Postpartum	275
30.9	Conclusion	275
	Recommendations for further reading	275
31	Management of pregnancy in women with history of weight loss surgery	277
	<i>Omar Thanoon, Asma Gharaibeh and Tahir Mahmood</i>	
31.1	Introduction	277
31.2	Types of bariatric surgery	277
31.2.1	Complications of bariatric surgery	278
31.2.2	Complications specific to laparoscopic adjustable gastric banding	279
31.2.3	Complications specific to Roux-en-Y gastric bypass	279
31.2.4	Reproductive health after bariatric surgery	279
31.2.5	Preconception counselling	279
31.2.6	Effects of pregnancy on surgery	280
31.2.7	Effects of surgery on pregnancy	280
31.2.8	Antenatal management	280
31.2.9	Recommended investigations in pregnancy after bariatric surgery	281
31.2.10	Management of acute attendance during pregnancy	281
31.2.11	Postpartum management	281
	Further reading	282
32	Challenges of third trimester scanning in obese women	283
	<i>Smriti Prasad and Asma Khalil</i>	
32.1	Introduction	283
32.2	Why do obese pregnant women need a third trimester scan?	283
32.3	Challenges in third trimester screening	284
32.3.1	Poor visualisation of anatomic structures due to impaired acoustic window	284
32.3.2	Coassociated factors	285
32.3.3	Challenges in estimated foetal weight calculation	285

32.3.4	Ergonomics	285
32.3.5	Medicolegal implications	286
	Further reading	287
33	Screening for gestational diabetes mellitus	289
	<i>Tahir Mahmood</i>	
33.1	Prepregnancy risk factors include	289
33.2	Effect of gestational diabetes mellitus on both mother and baby	290
33.2.1	Mother	290
33.2.2	Postnatal	290
33.2.3	Foetal/neonatal	290
33.3	Long-term impact	291
33.3.1	Mother	291
33.3.2	Newborn	291
33.3.3	Screening for gestational diabetes mellitus	291
33.4	Screening methods	293
33.4.1	Oral glucose tolerance test	293
33.4.2	Glucose challenge test	293
33.4.3	Glycated haemoglobin	293
33.5	Should all pregnant women be tested for hyperglycaemia in pregnancy?	294
33.6	Should all women be tested by a 75 g oral glucose tolerance test?	294
33.7	Postpartum follow-up after gestational diabetes	294
33.8	Interventions for prevention of gestational diabetes mellitus	295
33.8.1	Interventions which work	295
33.8.2	Interventions where there is insufficient evidence	295
	Further reading	295
34	Management of obese pregnant women with pre-diabetes and type 1 and 2 diabetes mellitus	297
	<i>A.M. Egan, C. Newman and F.P. Dunne</i>	
34.1	Background	297
34.2	Treatment of gestational diabetes mellitus	298
34.3	Treatment of preexisting diabetes during pregnancy	299
34.4	Additional tips for caring for women with pregestational diabetes during pregnancy	301
34.5	Treatment of newly diagnosed, 'overt' diabetes during pregnancy	302
34.6	Monitoring foetal well-being	302
34.7	Timing and mode of delivery	303
34.8	Intrapartum control of glucose	303
34.9	Postpartum care	304
34.9.1	Mother	304
34.9.2	Infant	305
	References	305

35	Drug interactions for women with diabetes and obesity during pregnancy	307
	<i>C. Newman, F.P. Dunne and A.M. Egan</i>	
35.1	Diabetes during pregnancy	307
35.2	Obesity and pregnancy	314
	Further reading	316
36	Short- and long-term effects of gestational diabetes and foetal outcomes	317
	<i>Laura Stirrat and Tahir Mahmood</i>	
36.1	Maternal diabetes and insulin resistance	317
36.2	Short-term risks	317
36.2.1	Foetal risks	317
36.3	Short-term clinical consequences of increased foetal size include	318
36.3.1	Congenital anomalies	318
36.3.2	Preterm birth	318
36.3.3	Neonatal hypoglycaemia	318
36.3.4	Neonatal jaundice	319
36.3.5	Stillbirth	319
36.4	Long-term (foetal)	319
36.4.1	Childhood size and obesity	319
36.4.2	Impaired glucose tolerance in the offspring	320
36.4.3	Cardiometabolic risk in the offspring	320
36.5	Long-term maternal risks	320
36.5.1	Type 2 diabetes	320
36.5.2	Cardiovascular risk	321
36.5.3	Chronic kidney disease	321
36.5.4	Cancer	321
36.6	Short-term maternal risks	321
36.7	Evidence for preventing type 2 diabetes after gestational diabetes	322
36.8	Implications for the obstetrician and primary care provider	322
	Further reading	322
37	Obesity and preeclampsia	323
	<i>Caroline Brewster, Chu Chin Lim and Tahir Mahmood</i>	
37.1	Introduction	323
37.2	Definitions	323
37.3	Predisposition to preeclampsia	324
37.4	Pathophysiological basis of pregnancy induced hypertension (PIH) during pregnancy	324
37.5	The placenta	325
37.6	Risk of miscarriage	325
37.7	Chronic hypertension	325
37.8	Effect of obesity-associated PIH on pregnancy outcomes	326
37.9	Care during pregnancy	326

37.10	Place of delivery	327
37.11	Postpartum	327
37.12	Long-term implications	328
37.13	Practical consideration for obesity and pregnant women	328
37.13.1	Challenge of accurately measuring blood pressure	328
37.14	Conclusion	329
	Further reading	329
38	Venous thromboembolism in obese mother	331
	<i>Nithiya Palaniappan and Nirmala Mary</i>	
38.1	Introduction	331
38.2	Pathophysiology	331
38.3	Other contributory factors	332
38.4	Symptoms of venous thromboembolism	332
38.5	Prevention of venous thromboembolism in obese pregnant women	332
38.6	Agents for thromboprophylaxis	332
38.7	Investigation for venous thromboembolism	334
38.8	Management of venous thromboembolism in obese pregnant women	334
38.8.1	RCOG charts for dosage of low-molecular-weight heparin	335
38.9	Intrapartum care in obese pregnant women with regard to venous thromboembolism	335
38.10	Postnatal care in obese pregnant women	335
38.11	Contraception in obese women with a history of venous thromboembolism	336
38.12	Future advice in obese pregnant women with history of venous thromboembolism in index pregnancy	337
	Further reading	337
39	Induction of labour in obese pregnancies	339
	<i>Kahyee Hor</i>	
39.1	Indications of induction of labour	340
39.2	Counselling for induction of labour	341
39.3	Methods of induction of labour	343
	Further reading	344
40	Intrapartum care for obese women	347
	<i>Diogo Ayres-de-Campos and Andreia Fonseca</i>	
40.1	Introduction	347
40.2	The impact of obesity in labour	347
40.3	Labour management	348
40.4	Summary	351
	Further reading	351

41	Assisted vaginal delivery in obese women	353
	<i>Inês Martins and Diogo Ayres-de-Campos</i>	
41.1	Introduction	353
41.2	Indications	353
41.3	Prerequisites	354
41.4	Contraindications	354
41.5	Specific considerations in obese women	355
41.6	Summary	355
	Further reading	356
42	Sepsis in obese pregnant women (concise version)	357
	<i>Hannah Waite, Katrine Orr and Ailie Grzybek</i>	
42.1	Introduction	357
42.2	Epidemiology of obesity and sepsis	357
42.3	Immunology	358
42.4	Specific infections	359
42.4.1	Genital tract	359
42.4.2	Breast	360
42.4.3	Surgical site infection	360
42.4.4	Hospital acquired infections	360
42.4.5	Urinary tract infection	360
42.4.6	Pneumonia	360
42.4.7	Pharyngitis	362
42.4.8	Rare infections	362
42.5	Viral infections	362
42.5.1	Pandemics—influenza	363
42.5.2	COVID-19	363
42.6	Sepsis	364
42.7	Intrapartum care	367
42.8	Operative issues	367
42.9	Caesarean sections	367
42.10	Preoperative considerations	368
42.11	Antibiotic prophylaxis	368
42.12	Incision	369
42.13	Closure	369
42.14	Postoperative care	369
42.15	Care in wound dehiscence	369
42.15.1	Rectus sheath dehiscence	370
42.15.2	Evisceration due to dehiscence	370
42.16	Patient education	370
	References	370
43	Immediate postnatal care in obese women	375
	<i>Rabia Sherjil and Rashda Bano</i>	
43.1	Historical background	375

43.2	Implications of obesity in planning of postnatal care	375
43.3	Postpartum care plan	377
43.4	Thromboembolism (venous thrombosis)	377
43.5	Sepsis risk	378
43.6	Postpartum haemorrhage	379
43.7	Preeclampsia	380
43.8	Breast feeding initiation and maintenance	381
43.9	Care plan for other health risks	382
	Further reading	383
44	Postpartum weight management and future pregnancy planning	385
	<i>Mohamed ElMoursi</i>	
44.1	Complications of obesity	385
44.2	Complications of weight stigma	386
44.3	Outcomes of obesity and its effects on future pregnancies	386
	44.3.1 Maternal outcomes	386
	44.3.2 Foetal/neonatal outcomes	386
	44.3.3 Outcomes in childhood for children born to obese mothers	387
	44.3.4 Outcomes in adulthood being born to obese mothers	387
44.4	General postpartum management	387
	44.4.1 Management	387
	44.4.2 Thromboprophylaxis	387
	44.4.3 Postpartum contraception	388
	44.4.4 Nutrition and physical exercise	388
44.5	Weight loss management strategy	389
	44.5.1 Postpartum weight loss	389
	44.5.2 Breastfeeding and obesity	389
44.6	Obesity, weight loss, and future fertility planning	390
	44.6.1 Management overview	390
44.7	Planning for future pregnancies	391
	44.7.1 Obesity and polycystic ovarian syndrome	391
	References	395
Index		397