ANTENATAL CARE IN PREEXISTING DIABETES

- Offer immediate referral to a joint diabetes and antenatal clinic.
- Offer contact with the diabetes care team every 1–2 weeks to assess glycaemic control.
- Offer advice on where to have the birth, which should be in a hospital with advanced neonatal resuscitation skills available 24 hours a day.
- Offer information and education at each appointment.
- Offer care specifically for women with diabetes, in addition to routine antenatal care.

Diabetic ketoacidosis in pregnancy

If diabetic ketoacidosis is suspected during pregnancy, admit women immediately for HDU/ICU care, where both medical and obstetric care are available.
For women with type 1 diabetes offer ketone testing strips and advise women to test their ketone levels if they are hyperglycaemic or unwell.
Exclude diabetic ketoacidosis as a matter of urgency in women with type 1 diabetes who become unwell.

First appointment (joint diabetes and antenatal clinic)

- Take a clinical history.
- **Reviewing medications**
- Metformin may be used before and during pregnancy, as well as or instead of insulin, if the likely benefits from improved glycaemic control outweigh the potential for harm.
- Data from clinical trials and other sources do not suggest that the rapid-acting insulin analogues (aspart and lispro) adversely affect pregnancy or the health of the fetus or newborn baby.
- Evidence about the use of long-acting insulin analogues during pregnancy is limited. Isophane (NPH) insulin is the first-choice long-acting insulin during pregnancy.
- Before or as soon as pregnancy is confirmed:
    - stop oral hypoglycaemic agents, apart from metformin, and commence insulin if required
    - stop angiotensin-converting enzyme inhibitors and angiotensin-II receptor antagonists and consider alternative antihypertensives
    - stop statins.

Blood glucose targets and monitoring

- Advise women to test fasting and 2 hour postprandial blood glucose levels after every meal during pregnancy.
- Agree individualised targets for self-monitoring.
- Advise women to aim for a fasting blood glucose of between 85 and 90 mg/dl and a postprandial of 110-120 mg/dl. The presence of diabetic retinopathy should not prevent rapid optimisation of glycaemic control in women with a high HbA_{1c} in early pregnancy.
- Do not use HbA_{1c} routinely in the second and third trimesters.

Additional care for women taking insulin

- Offer concentrated oral glucose solution to all women taking insulin.
- Offer glucagon to women with type 1 diabetes.
- Offer insulin pump therapy if glycaemic control using multiple injections is not adequate and the woman experiences significant disabling hypoglycaemia.
- Advise women to test their blood glucose before going to bed at night.
- Advise on the risks of hypoglycaemia and hypoglycaemia unawareness, especially in the first trimester.
- Advise women and their partners or family members on the use of oral glucose solutions and glucagon for hypoglycaemia.

Retinal assessment for women with pre-existing diabetes

Retinal assessment should be carried out by an ophthalmologist.

Renal assessment for women with pre-existing diabetes

- Offer renal assessment at the first contact in pregnancy if it has not been performed in the past 12 months.
- Consider referral to a nephrologist if serum creatinine is abnormal (>2.2 mg/dl or there is >2+ of proteinuria)
- Consider thromboprophylaxis if proteinuria is above 5 g/day.
- Do not offer eGFR during pregnancy.

Monitoring and screening fetal development

- Offer individualised monitoring of fetal wellbeing to women at risk of intrauterine growth restriction (those with macrovascular disease or nephropathy).
- Do not offer tests of fetal wellbeing before 38 weeks, unless there is a risk of intrauterine growth restriction.
- Metformin is used in our clinical practice in the management of diabetes in pregnancy and lactation. There is strong evidence for its effectiveness and safety. Informed consent on the use of metformin in these situations should be obtained and documented.

Booking appointment

- Confirm viability of pregnancy and gestational age at 7–9 weeks.
- At the booking appointment (ideally by 10 weeks), discuss information, education and advice about how diabetes will affect pregnancy, birth and early parenting (such as breastfeeding and initial care of the baby).

Monitoring and screening fetal development

- Offer individualised monitoring of fetal wellbeing to women at risk of intrauterine growth restriction (those with macrovascular disease or nephropathy).
- Do not offer tests of fetal wellbeing before 38 weeks, unless there is a risk of intrauterine growth restriction.

Antenatal care from 16 to 28 weeks

- Offer individualised monitoring of fetal wellbeing to women at risk of intrauterine growth restriction (those with macrovascular disease or nephropathy).
- Do not offer tests of fetal wellbeing before 38 weeks, unless there is a risk of intrauterine growth restriction.

16 weeks
Offer retinal assessment at 16–20 weeks to women with pre-existing diabetes who had signs of diabetic retinopathy at the first antenatal appointment.
20 weeks
Offer four-chamber view of the fetal heart and outflow tracts at 18–20 weeks.
Offer scans that would be offered at 18–20 weeks in routine antenatal care.
25 weeks
Only offer care that would be offered at 25 weeks to nulliparous women in routine antenatal care.
28 weeks
Offer ultrasound monitoring of fetal growth and amniotic fluid volume.
Offer retinal assessment (see above) to women with pre-existing diabetes who did not have diabetic retinopathy at their first antenatal clinic visit.

Antenatal care from 32 to 41 weeks
Offer individualised monitoring of fetal wellbeing to women at risk of intrauterine growth restriction (those with macrovascular disease or nephropathy).
Do not offer tests of fetal wellbeing before 38 weeks, unless there is a risk of intrauterine growth restriction.
32 weeks
Offer ultrasound monitoring of fetal growth and amniotic fluid volume.
Offer investigations that would be offered to nulliparous women at 31 weeks in routine antenatal care.
34 weeks
Offer routine care only.
36 weeks
Offer ultrasound monitoring of fetal growth and amniotic fluid volume.
Offer information and advice about:
- timing,
- mode and management of birth
- analgesia and anaesthesia (including anaesthetic assessment for women with comorbidities, such as obesity or autonomic neuropathy)
- changes to hypoglycaemic therapy during and after birth
- initial care of the baby
- initiation of breastfeeding and the effect of breastfeeding on glycaemic control
- contraception and follow-up.

38 weeks
Offer induction of labour, or caesarean section if indicated.
Offer tests of fetal wellbeing for women waiting for spontaneous labour in women with GDM who are well controlled with diet and exercise.