

Pregnancy and type 1 diabetes

Information for patients



Leeds
Maternity Care

Congratulations on your pregnancy.

We want to support you managing your diabetes and your pregnancy. There are a number of links and attachments within this leaflet that you may find useful. Please take time to read through this leaflet and the attachments.

Monitoring

Monitoring your blood glucose levels during pregnancy is a little different in terms of methods available, timing and targets.

When to check your blood glucose levels:

- Before meals
- One hour after your meals
- Before bed

Blood glucose targets in pregnancy:

- 4.0 - 5.2mmol/l before meals
- Less than 7.8mmol/l one hour after meals

How to check your blood glucose levels:

As well as checking your blood glucose using a finger pricker and glucometer, other options available to you for the duration of your pregnancy are:

- Freestyle Libre Flash Blood Glucose Monitoring System
- Dexcom Continuous Blood Glucose (CGM) Monitoring System

Here are links to relevant websites, videos and webinars that give your more insight into monitoring your blood glucose levels during pregnancy. We will also talk you through the details at your appointment. All these videos / links work best on a platform such as Google Chrome.



Finger prick checking and glucometer - a refresher
<https://youtu.be/NUskHI7APHE>



An introduction to Freestyle Libre
<https://progress.freestylediabetes.co.uk/>



<https://abcd.care/dtn/flash-glucose-monitoring>



Using Freestyle Libre in Pregnancy
https://www.youtube.com/watch?v=Jhv_CID-c-g



Dexcom / CGM in Pregnancy
<https://abcd.care/dtn-education/diabetes-tech-in-pregnancy>



https://abcd.care/sites/abcd.care/files/site_uploads/Resources/DTN/Dexcom-Tips.pdf

Time in range known as TIR

This means the amount of time your blood glucose is in the ideal range which is 3.5 to 7.8 mmol/l during pregnancy. You will need to change the settings on CGM or flash as they are usually set to non-pregnancy targets 3.9 to 10 mmol/l

The table below summarises how much time you are aiming to be in target and the maximum amount of time you should be below / above target to give you and your baby the best start and throughout pregnancy.

Target	What does it mean
TIR 70% or more	17 hours a day in range (excellent)
Less than 4% time below range (TBR)	Less than one hour below 3.5 mmol (hypo)
Less than 1% time below range (TBR)	Less than 15 minutes below 3.0 mmol/l (hypo)
Every time you increase by 5% the time you are in range	It helps you have a healthier baby

Food choices

Below is a link to some introductory healthy eating in pregnancy to get you started. This works best on a platform such as Google Chrome.



<https://www.bda.uk.com/resourceDetail/printPdf?resource=pregnancy-diet>

Help us to keep in contact with you

- Your clinic appointments will be on a Thursday afternoon and will usually be a telephone call. We will let you know the date in advance.
- We will call you between 1.30pm – 4.30pm. Unfortunately, we are unable to give you a specific time, so please make sure you have your blood glucose readings to hand especially if you are out of the home.
- The phone calls will have a blocked caller ID, but please try and answer as this will help us enormously.
- If you need advice about your glucose levels and diabetes in between appointments, please call the Diabetes team: 0113 206 5068 (Open five days a week, Monday - Friday 8.30am - 4pm).

If you need advice relating to the pregnancy itself, please contact your Diabetes midwife

Early pregnancy (up to 16 weeks)

What happens to blood glucose and insulin sensitivity in the early stages of pregnancy?

- Blood glucose levels tend to run higher / can be more variable initially.
- You can experience more frequent hypos due to increasing insulin sensitivity and you are at an increased risk of severe hypoglycaemia.
- Hypos can happen faster in early pregnancy and your warning signs may diminish / alter so close monitoring is required. This is particularly important if you drive.
- How your body “handles” carbohydrate containing foods changes with pregnancy and as pregnancy progresses. Blood glucose swing up much higher after meals than pre-pregnancy and this seems to be particularly noticeable after breakfast.
- Aim to give mealtime insulin 20 minutes pre food in early pregnancy to help manage post meal rises.
- If you are struggling with sickness aim to give half mealtime insulin pre meal as usual and then half after your meal when you are sure it is going to stay down.
- Overnight can be up to a one third of your day and can really impact your time in range. Try to avoid having your evening meal too close to bedtime, i.e. aim to have it before 7.30pm / at least three hours before you go to bed, then only have carbohydrate free snacks if still hungry.
- Avoiding food and drinks together can help with nausea.
- More stable blood glucose can reduce sickness.
- For further information see the JDRF Pregnancy toolkit (https://nhsforthvalley.com/wp-content/uploads/2021/03/JDRF-PregnancyToolkit_21.pdf) pages 14 - 17



What happens to blood glucose and insulin requirement mid pregnancy?

Mid pregnancy (from 16 weeks)

- Appetite increases!
- Insulin resistance increases as pregnancy progresses, meaning that you need more insulin to do the same job
- The greatest increase in insulin requirements seems to happen between 24 – 32 weeks.
- You will find that the balance between your basal and bolus insulin will change as you are likely to need to more insulin with your meals. Your breakfast dose is likely to increase the most.
- Your basal insulin dose may increase by 50%, but your mealtime ratios may double, triple or even quadruple!
- Larger doses of mealtime insulin to get one hour readings on target increases your risk of hypoglycaemia around one and a half - two hours later. You can manage this by planning a 10-20g slow-release carbohydrate snack at this time and not taking any additional mealtime insulin with this.
- Your correction dose / insulin sensitivity factor will alter, so one unit to reduce blood glucose by 3mmol/l, may become 1unit to reduce blood glucose by 1mmol/l.
- You can also split meals but take all the insulin upfront. For example: a sandwich with yogurt and fruit...take all the insulin to cover the sandwich / fruit and yoghurt upfront,

eat the sandwich and then delay the yoghurt and fruit to around 90 – 120mins later, this will help manage the post meal rise at one hour.

- As pregnancy progresses digestion also slows down. Try giving your mealtime insulin anywhere from 30mins – 40mins pre meal as this should help manage post meal spikes at one hour
- For further information see the JDRF Pregnancy toolkit pages 18 - 21

What happens to blood glucose and insulin sensitivity in the later stages of pregnancy?

From 28 weeks onwards

- The balance between your mealtime insulin and basal insulin will be around 65 – 70% bolus: 35-30% basal.
- Digestion continues to slow down and so you may need to split the bolus to better match the digestive profile of your food.
- Insulin peaks approximately two hours later than in early pregnancy so you may need to give your meal time insulin up to 45 – 60mins pre meal and you can expect a rise of 1.5 – 3mmol/l one hour post meal.
- At 36 weeks – insulin requirements may plateau / reduce.
- For further information see the JDRF Pregnancy toolkit (https://nhsforthvalley.com/wp-content/uploads/2021/03/JDRF-PregnancyToolkit_21.pdf) pages 22-24



Advice on physical activity

Studies show that exercise is safe for both you and your baby during pregnancy and carries many benefits including: boosting mood and energy levels, promoting better sleep, promoting muscle tone, strength and endurance for labour, preventing excessive weight gain and improving posture and backaches and fatigue.

- Recreational exercise such as swimming or brisk walking and strength conditioning exercise is safe and beneficial
- The aim of recreational exercise is to stay fit, rather than to reach peak fitness
- If you have not exercised regularly then you should begin with no more than 15 minutes of continuous exercise, three times per week, increasing gradually to daily 30-minute sessions
- If you have exercised regularly before pregnancy, then you should be able to continue with no adverse effects.
- Important not to be sedentary, as far as possible.
- Start walking and build physical activity into daily life, for example, by taking the stairs instead of the lift, rather than sitting for long periods



https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1054538/physical-activity-for-pregnant-women.pdf

The team will be in regular contact with you to support you throughout your pregnancy but any concerns contact your named Diabetes Midwife



What did you think of your care?

Scan the QR code or visit bit.ly/nhsleedsfft

Your views matter



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