NHS
James Paget University Hospitals
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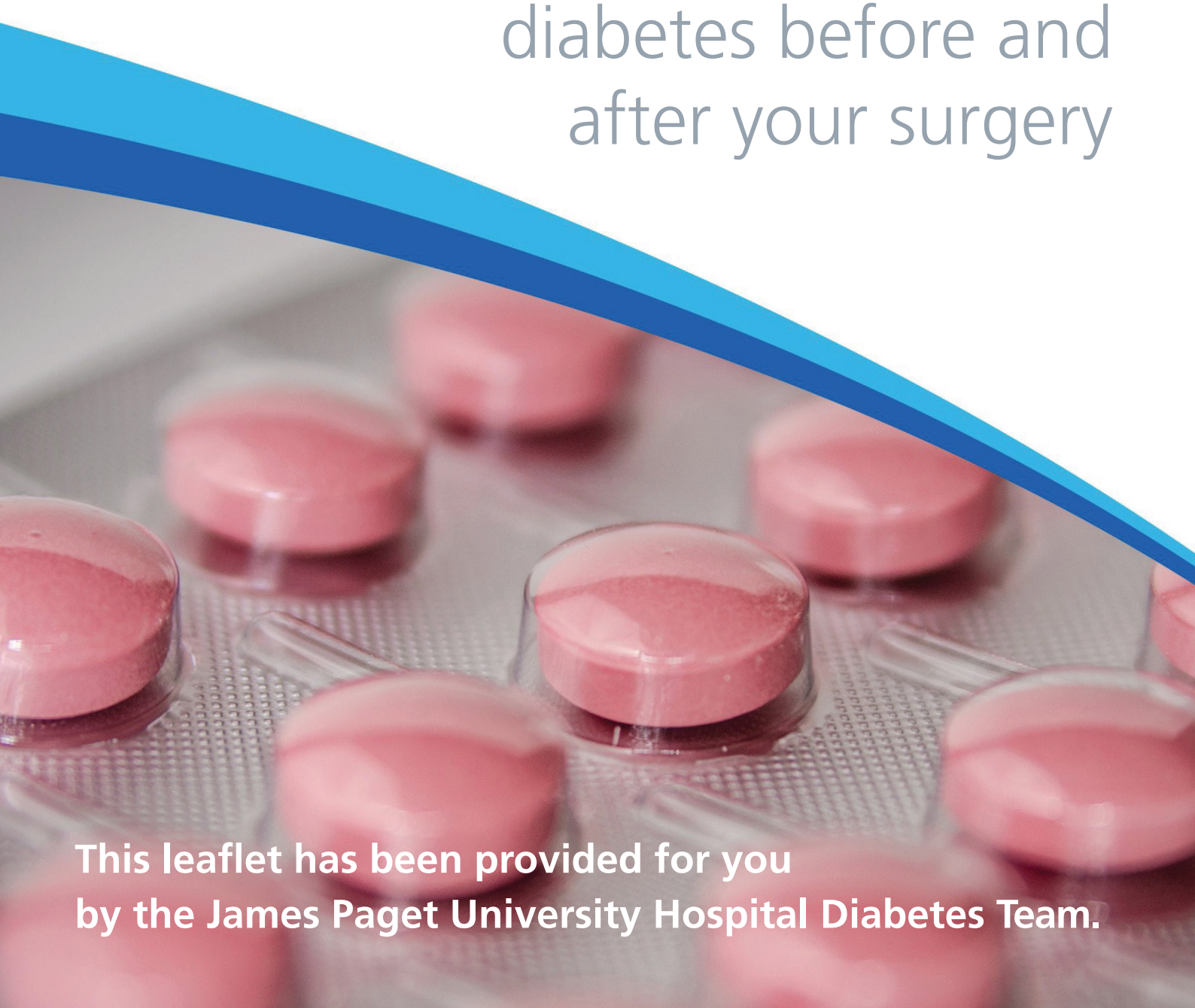
Your Surgery Diabetes Booklet

How to manage your diabetes before and after your surgery



This leaflet has been provided for you by the James Paget University Hospital Diabetes Team.

Introduction

You have been given this booklet because you have diabetes and are having an operation.

The information on these pages will help you ensure that your diabetes is managed correctly and that you are in the best possible condition for your surgery.

Diabetes control is important, especially around surgery.

It has been shown that patients whose diabetes is well controlled before their operation are less likely to have complications such as infections after surgery. Blood glucose control can be more tricky before an operation as you are required to fast (stop eating or drinking for a short period). Some types of diabetes medication may also need to be stopped before surgery.

What this booklet contains:

This booklet includes advice on what to do with your medication just before and after the operation. With proper planning, these changes should not upset your diabetes control.

If you have any difficulties understanding these instructions, please speak to a member of your local diabetes team, the nurse who provided this leaflet or your GP.

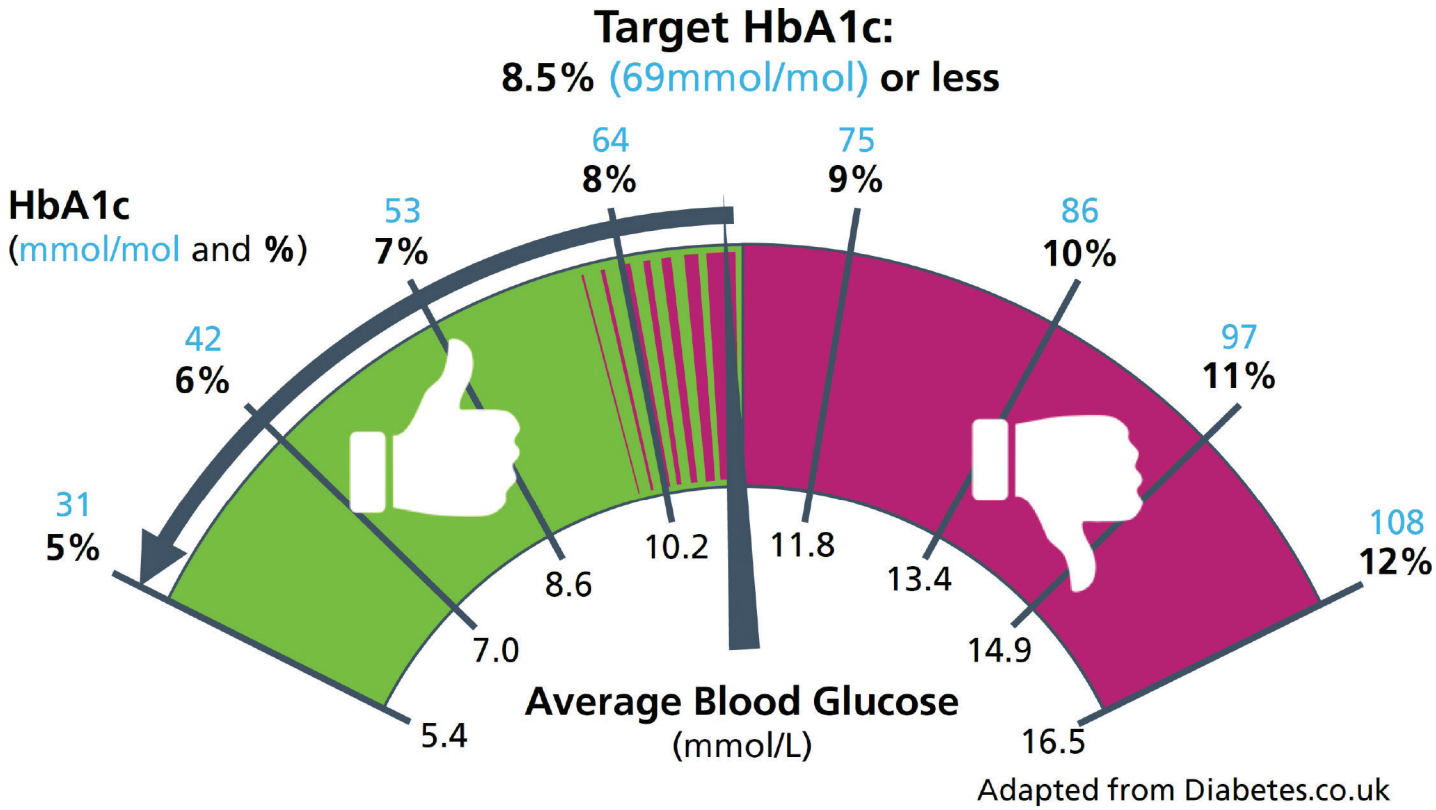
Blood glucose control

High blood glucose can increase the risk of infections and lead to less favourable outcomes following surgery. Good blood glucose control has also been shown to improve healing after surgery.

HbA1c is a blood test that gives an overall picture of your blood glucose levels over the past 3 months.

We recommend that your HbA1c should be 8.5% (69 mmol/mol) or less before your operation.

Your HbA1c will be tested and nurses will be able to advise you on the result. If it is high your operation may have to be postponed until it improves.



Adapted from Diabetes.co.uk

Your blood glucose will be checked on the day of the operation. If it is unstable, the healthcare team may aim to correct it with an insulin injection. Alternatively, your blood glucose may be managed with Intravenous Insulin (through a slim plastic tube called a cannula in your arm).

Getting Ready For Your Procedure

Fasting before surgery

On the day of your operation, you must fast (go without food or drink) for a set period of time before your surgery. This includes not chewing gum or sucking boiled sweets. It is important that you do so, as food or liquid in your stomach may make it unsafe to proceed with your operation.

If you are having a **general anaesthetic, IV sedation** or a **nerve block:**

For **morning** surgery, please **do not eat anything after midnight.** You may drink water up to 6.00 am.

For **afternoon** surgery, have a light breakfast **before 7.00 am** and do not eat anything afterwards. You may drink water up to 11.00 am.

If you are having a **local anaesthetic:**

Have a light meal (sandwich, soup, etc) 2 hours before your procedure. **Do not eat or drink** after that.

Look out for hypoglycaemia (low blood glucose)

Fasting can make you more likely to get hypoglycaemia. If you have any symptoms of hypoglycaemia such as sweating, dizziness, blurred vision or shaking please test your blood glucose if you are able to do so.

What to do?

If your blood glucose is less than 5mmol/l, you could have a drink of clear, still sugary liquid such as squash which contains sugar.

Please tell staff at the hospital that you have done this so they can confirm whether it is safe to proceed with your operation.

Please remember to bring with you to hospital:

- Glucose tablets or sugary drink
- Blood glucose testing equipment you usually use
- Diabetes medication (eg tablets, insulin) that you usually take for your diabetes
- A supply of insulin needles (if you take insulin), spare glucose monitoring sensor and insulin pump consumables (if you use these)

If your nurse has any further instructions for you, they will be written here:

Changes to your diabetes medication

If you take medication for your diabetes, you may need to change the doses before your operation.

If you are not prescribed medication for your diabetes, you do not need to make any changes unless specifically advised to do so.

Your nurse may have specific instructions for you **(see below).** Otherwise please refer to these pages for instructions on:

- Tablets or GLP-1 Injections (page 8)
- Insulin (page 9)

Specific instructions for medication changes:

What to do with your medication before surgery

Tablet or GLP-1 injections

The following table will tell you what to do with your diabetes tablets / injections. If you are taking more than one, please follow the instructions for each of them.

Name of tablets / GLP-1 Injections	On day of surgery for your morning operation	On day of surgery for your afternoon operation
Alpha glucosidase inhibitor Glucobay®/acarbose	Omit morning dose. Restart when eating and drinking normally.	Take usual morning dose if eating breakfast. Omit lunchtime dose. Restart when eating and drinking normally.
Prandial glucose regulator Prandin®/repaglinide; Starlix®/nateglinide	Omit morning dose. Restart when eating and drinking normally.	Take usual morning dose if eating breakfast and omit lunchtime dose. Restart when eating and drinking normally.
Biguanide Glucophage®/Sukkarto®/ Yaltormin®/metformin	Take as usual unless specifically advised not to. (Omit lunchtime dose if usually taken at that time).	
Metformin if procedure includes IV contrast media or eGFR <60	Do not take on the day of surgery. Omit for further 48 hours.	
Sulphonylureas Diamicron®/gliclazide; Minodiab®/glipizide; Amaryl®/glimepiride)	Omit morning dose. Omit lunchtime dose (if applicable). Restart when eating and drinking normally.	
Thialidinediones Actos®/pioglitazone Competact®/pioglitazone+ Metformin	Take usual dose.	
DPP – IV inhibitors Vipidia®/alogliptin; Januvia®/ sitagliptin; Onglyza®/saxagliptin; Trajenta®/linagliptin; Galvus®/vildagliptin Many also available as combinations with metformin	Take usual dose.	
GLP – 1 analogue Bydureon®/exenatide; Byetta®/exenatide; Ozempic®/Semaglutide Semaglutide/rybelsus Tirzepatide/mounjaro Trulicity®/dulaglutide Victoza®/liraglutide;	Take usual dose.	
SGLT-2 inhibitors Forxiga®/dapagliflozin; Invokana®/canagliflozin; Jardiance®/empagliflozin sotagliflozin	Do not take for 4 days prior to surgery (where possible). Restart once you have been eating and drinking normally for 48 hours.	

What to do with your medication before surgery

Insulin treated diabetes

On the day of your surgery, from 6 am onwards, you should **monitor your blood glucose every two hours** prior to your arrival at hospital and bring your record with you. If you are driving, you should also check your blood glucose just before starting your car and drive only if your blood glucose is more than 5 mmol / L.

The following table will tell you what to do with your insulin.
If you are taking more than one type of insulin, please follow the instructions for each. If you are having bowel surgery the instructions above may differ. Please contact your diabetes team for further support.

Name of Insulin	Day before surgery	On day of surgery for your morning operation	On day of surgery for your afternoon operation
Mixed Insulin *(usually taken twice daily)* Humalog Mix 25® Humalog Mix 50® Humulin M3® Humulin R-500® Hypurin Porcine 30/70 Mix® Novomix 30®	Take your usual dose.	Take 50% of usual morning dose. Omit lunchtime dose (if you usually take a mixed Insulin three times daily). Take your usual insulin dose with normal evening meal. If eating a half / small meal give half usual dose.	Take 50% of usual morning dose. Omit lunchtime dose (if you usually take a mixed Insulin three times daily). Take your usual insulin dose with normal evening meal. If eating a half / small meal give half usual dose.
Long-acting/ basal Abasaglar® (glargine) Humulin I® Hypurin Porcine Isophane® Insulatard® Lantus® (glargine) Levemir® (detemir) Semglee® (glargine) Toujeo® (glargine) Tresiba® (degludec)	If taken in the morning:		
	Take 80% of usual dose.	Take 80% of usual dose.	Take 80% of usual dose.
	If taken in the evening:		
	Take 80% of usual dose.	Take your usual dose.	Take your usual dose.
	If taken twice daily:		
	Take 80% of usual evening dose.	Take 80% of usual morning dose.	Take 80% of usual morning dose.
Rapid-acting/ meal-time (usually two or more injections daily) Actrapid® Admelog® Apidra® Fiasp® Humalog® Humulin S® Hypurin Porcine Neutral® Lyumjev® Novorapid® Trurapi®	Take your usual dose.	Omit morning dose of rapid acting insulin. Omit lunchtime dose if not eating and drinking normally. Take usual evening meal dose if eating and drinking normally. If eating a half / small meal give half usual dose.	Usual morning dose of rapid acting insulin with breakfast. Omit lunchtime dose. Take usual evening meal dose if eating and drinking normally. If eating a half / small meal give half usual dose.
CSII (insulin pump)	Please contact the Diabetes Team for advice		

After your operation

After your operation, you will be offered food and drink when you feel able to eat. **Once you are eating and drinking normally, you should resume taking your normal diabetes medication from that meal onwards.** The healthcare team will be able to give you further advice on this.

At home

- You should **continue taking your usual diabetes medication (tablets or insulin) as advised** by your healthcare team.
- Monitor your blood glucose levels if you usually do so or have the equipment - up to 4 times per day if possible.
- Your blood glucose levels may be higher than usual for a day or so - this is not a worry unless you are feeling unwell.

If you become unwell and have any of the following, it is important for you to seek medical advice:

- Continuous diarrhoea and vomiting and / or a high fever.
- Are UNABLE to keep food down for four hours or more.
- Become DROWSY and BREATHLESS.
- HIGH blood glucose levels with symptoms of illness (if above 15mmol / L you may need more insulin).

Contact your usual diabetes team/GP surgery. Please ensure you let them know you just had surgery.
OUTSIDE NORMAL WORKING HOURS consult your local out-of hours service or go to your local hospital's Emergency department.

Sick day rules for people with diabetes

What should I do if I am unwell after my operation?

- NEVER stop taking your insulin – illness usually increases your body's need for insulin.
- If you are vomiting, have diarrhoea or become dehydrated STOP taking metformin and SGLT2 inhibitors (dapagliflozin, canagliflozin and empagliflozin, sotagliflozin).

- TEST your blood sugars at least four times a day, if you have the equipment to do so.
- If you are unable to test your blood sugar you should inform your GP that you are unwell and ask that your blood sugar be checked.
- DRINK at least 100 ml of water / sugar free fluid every hour – at least 2.5 litres a day (unless specifically advised not to).
- EAT as normally as you can. If you cannot eat or if you have a smaller appetite than normal, replace solid food during illness with one of the following:
  - 2 cups of milk
  - 200 ml carton of fruit juice
  - 150 – 200 ml of non-diet fizzy drink
  - 1 scoop of ice cream.
- Even if you are eating less than usual, being unwell usually makes your blood glucose rise.
- Symptoms of high blood glucose include:
  - thirst
  - passing more urine than usual
  - tiredness.

Not all illnesses have this effect and in some patients rather than rising the blood glucose level may fall when they are not eating. In this circumstance patients on gliclazide / glimepiride tablets or insulin may need to reduce their dose of diabetes medication.

Extra instructions for people with Type 1 diabetes

- If you are unwell and have a high blood glucose (12 mmol / L) you should follow the 'sick day rules' – they are also available on the James Paget University Hospital diabetes webpage https://www.jpaget.nhs.uk/departments-services/departments-services-a-z/diabetes/
- The golden rule is to NEVER stop insulin even if you are not eating.
- You should test regularly to track the changes in blood sugar.
- TEST your urine or blood for KETONES every two hours.
- You will need more insulin if your urine KETONES are ++2 or +++3 (or for those testing with a blood ketone meter, the level is 1.5 mmol / L or more). In this case contact your diabetes care provider.

Follow-up of your diabetes care

You should be informed if you require further diabetes follow-up, either by your surgery or by a member of the Diabetes team. You may be asked to phone the James Paget University Hospital Diabetes Team **on 01493 453373 (answerphone) or 01493 452452 (switchboard)** to discuss your progress.

If no follow-up is required, you will need to monitor your own diabetes and continue to attend your GP surgery for your usual appointments.

Reproduced with thanks to the East Suffolk and North Essex NHS Foundation Trust.

Issued by:
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Hospital switchboard: 01493 452452

www.jpaget.nhs.uk

Your Feedback We want your visit to be as comfortable as possible - talk to the person in charge if you have any concerns. If the ward/department staff are unable to resolve it, then ask for our Patient Advice and Liaison (PALS) information. Please be assured that raising a concern will not impact on your care.

OUR VALUES

#Proud of the Paget

Collaboration	We work positively with others to achieve shared aims
Accountability	We act with professionalism and integrity, delivering what we commit to, embedding learning when things do not go to plan
Respect	We are anti-discriminatory, treating people fairly and creating a sense of belonging and pride
Empowerment	We speak out when things don't feel right, we are innovative and make changes to support continuous improvement
Support	We are compassionate, listen attentively and are kind to ourselves and each other

Before leaving please complete a Friends and Family Test feedback card.
Help us transform NHS services and to support patient choice.

IN TRAN communication for all The hospital can arrange for an interpreter or person to sign to assist you in communicating effectively with staff during your stay. Please let us know.

For a large print version of this leaflet, contact PALS 01493 453240

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Revised November 2022, January 2024
James Paget University Hospitals NHS Foundation Trust
Review Date: January 2027
DIA 8 version 3