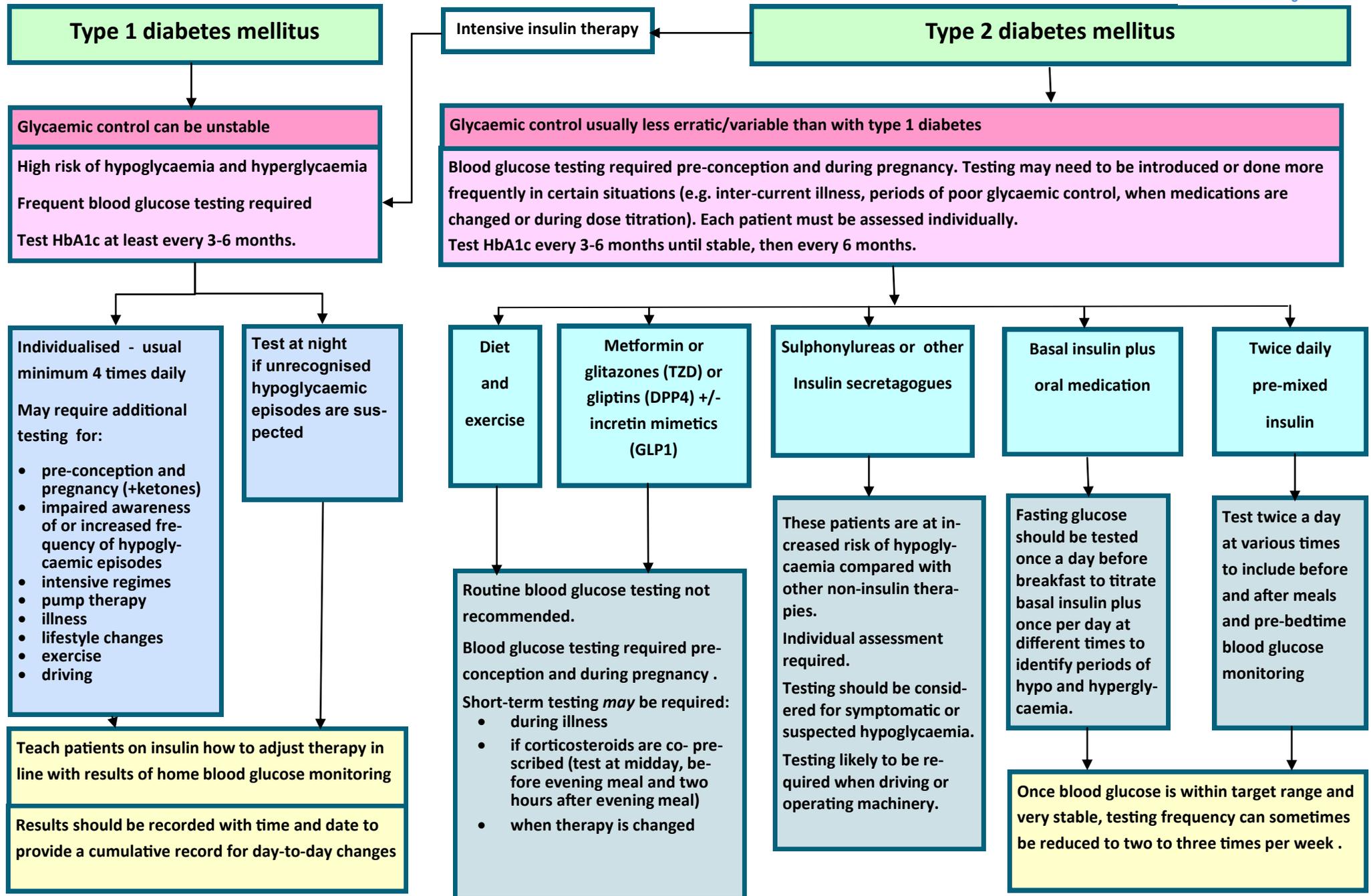


# Self Monitoring of Blood Glucose



## Guidance Notes

### Self-monitoring of Blood Glucose (SMBG)

Routine SMBG is recommended for **all adult patients** with **type 1 diabetes**, with testing at least four times per day including before each meal and at bedtime. Children & young people should be advised to test at least 5 times per day. More frequent testing (up to 10 times per day) may be needed: when there is a legal requirement (e.g. before & during driving); before, during & after pregnancy; before, during or after sport; during illness; for problematic hypoglycaemia, and; when HbA1c targets are not met. Some people may need to test more than 10 times per day because of: high-risk activities or occupations; travel; long-distance driving; impaired awareness of hypoglycaemia.

Routine SMBG is **NOT recommended** for **adults with type 2 diabetes not treated with insulin**, unless: there is **evidence of hypoglycaemic episodes** or; the person is on oral medication that may increase their **risk of hypoglycaemia while driving or operating machinery** or; the person is **pregnant**, or is **planning to become pregnant**. Short-term SMBG should be *considered*: when starting treatment with corticosteroids, and; to confirm suspected hypoglycaemia. All adults with type 2 diabetes who self-monitor blood glucose levels should have a structured assessment at least once-a-year. The following should be assessed: equipment used; self-monitoring skills; quality and frequency of testing; knowledge of how to interpret results and action to take; impact on quality of life, and; continued personal benefit.

The International Diabetes Federation recommends that: SMBG should be used only when individuals with diabetes (and/or their care-givers) and/or their healthcare providers have the knowledge, skills and willingness to incorporate SMBG monitoring and therapy adjustment into their diabetes care plan in order to attain agreed treatment goals. Unnecessary and unnecessarily frequent blood testing can impair quality of life, lead to anxiety and consume resources that could be more effectively deployed to support lifestyle change and other interventions.

**Monitoring in pregnancy:** In Pregnancy, type 1 diabetics should be prescribed Contour Next Strips for the Contour One Glucometer. The change in the meter is required as patients have typically wide ranging haematocrit in pregnancy .

**DRIVING:** The DVLA **requires** drivers of buses and lorries who use insulin or take oral medicines carrying risk of hypoglycaemia to test blood glucose levels at least twice every day (even when not driving), and to test no more than 2 hours before the start of the first journey and at least every 2 hours while driving. The DVLA **recommends** the same precautions for drivers of cars and motorbikes who use insulin. The DVLA **notes** that it is appropriate to offer SMBG at times relevant to driving to enable the detection of hypoglycaemia by drivers of cars and motorbikes who take oral medicines carrying risk of hypoglycaemia. See [DVLA guidance](#) for details.

### Blood glucose targets

Adults with type 1 diabetes should aim for 5–7 mmol/litre on waking and 4–7 mmol/litre before meals at other times of the day. Non-pregnant adults who choose to test after meals should aim for 5–9 mmol/litre at least 90 minutes after eating. Bedtime targets should be individualized, taking account of timing of last meal; related insulin dose, and; recommended fasting level on waking. Targets for children differ. Targets may need to be individualized for older adults, people with certain co-morbidities, during pregnancy and for people engaged in certain high risk activities. **NICE have not recommended targets for instantaneous blood glucose levels in type 2 diabetes.**

### HbA1c

**HbA1c is the most appropriate measure of long-term blood glucose control in both type 1 and type 2 diabetes.** Patients should be involved in decisions about their individual HbA1c target. Individual targets should take account of factors such as the person's daily activities, aspirations, likelihood of complications, comorbidities, occupation and history of hypoglycaemia. Adults with type 1 diabetes, and adults with type 2 diabetes treated with lifestyle and diet +/- a single drug not associated with hypoglycaemia, should be supported to aim for 48mmol/mol (6.5%). People with type 2 diabetes taking drugs associated with hypoglycaemia or requiring more than one drug should be supported to aim for 53mmol/mol (7.0%). Relaxed targets should be considered for people with type 2 diabetes who: are unlikely to achieve longer-term benefits; at high risk of the consequences of hypoglycaemia, or; have significant comorbidities.

### Testing Strips & Lancets Quantity Guide.

Patients with	Quantities / Packs		Quantities shown are based on typical testing routines. Individual requirements will vary & depend on recommended testing frequency. Expiry dates should be taken into account. Both strips and lancets are for single-use and equal quantities should be needed/provided.  Continuation and frequency of use should be evaluated at each diabetes review. Consider issuing as acute or automatic rather than as repeat prescriptions.
	Testing Strips-packs of 50	LANCETS – packs of 100	
Type 1 diabetes & Type 2 diabetes treated with intensive insulin therapy	2-3 packs every month	1 to 1½ packs every month	
Type 2 diabetes treated with basal or pre-mixed insulin	1 pack every month initially	1 every two months	
Type 2 diabetes at risk of hypoglycaemia due to insulin secretagogues	1 pack every three months	1 pack every six months	

**County Durham and Darlington formulary choices for blood glucose test strips, ketone test strip and pen needles**

Standard functionality only	Extra Functionality Required			Diabetic Pen Needles Please only pre-scribe 4mm length for patient comfort
Diabetic Blood Glucose testing Strips Type 2 or Type 1 patients (*For pregnant women please see guidance notes)	Meters with the inbuilt ability to measure ketones Usually only needed for Type 1 patients	Smart meters with Carb counting Only needed for Type 1 patients	Compatible with insulin pumps (Currently 4 choices of insulin pump that use different strips)	
<b>Tee2</b> (£7.75 for 50 strips)	<b>1st choice:</b> Care Sens Dual machine which uses : <i>For Ketones</i> = Keto sens strips (£9.95 for 10) <i>For Blood Glucose</i> = Care Sens Pro Strips (£9.95 for 50)	<b>1st choice:</b> Dario test strips (£14.95 per 50)	Medtronic-Contour next one meter and uses Contour Next strips (£15.00 per 50)	<b>BD Viva needle</b> (£5.36 for 90)
<b>GlucorX Nexus</b> range: Nexus, mini and voice meters (3 meters, one testing strip for all – £9.95 for 50 strips)	<b>2nd choice:</b> Gluco RX which uses: <i>For Ketones</i> = Gluco HCT (9.95 for 10 – ketones) <i>For Blood Glucose</i> = Gluco Rx (9.95 for 50).	<b>2nd choice:</b> Accucheck Aviva Expert- test strips (£15.96 per 50)	Roche-Expert meter/ Accucheck aviva test strips (£15.96 per 50)	<b>Gluco RX fine point needles</b> (£5.95 for 100)
<b>Mylife Pura</b> (£9.50 for 50 strips)				<b>BD Autosield Duo needles</b> (£30.08 for 100 pen needles)
<b>Accu-Chek Performa</b> (£9.95 for 50 strips)				<b>ONLY PRE-SCRIBE when District Nurses are administering insulin to patients.</b>

Company Details for Requesting Meters			
Name of BG Machine	Company	Telephone Number/ Helpline	Webpage or email address
<b>Tee2</b> <b>Care sens duo</b>	Spirit HealthCare	0116 2865000	cs@spirit-healthcare.co.uk
<b>GlucoRx Nexus range</b> <b>Gluco HCT</b>	GlucoRx	0800 007 5892 or 01483 755 133	www.glucorx.co.uk (need to register for log in as professional and then can order by website) orders@glucorx.co.uk
<b>Mylife Pura</b>	Ypsomed	0800 0926787	info@ypsomed.co.uk
<b>Dario</b>	Dario Health	01926 833273	info@atuk.ltd
<b>Accu-Chek Performa</b> <b>Accu-Check Aviva</b>	Roche	0800 040 7221	<a href="http://hcp.accu-chek.co.uk/data/uk/hcp-order-meters.html?execution=e2s1">http://hcp.accu-chek.co.uk/data/uk/hcp-order-meters.html?execution=e2s1</a>
<b>Contour Next One</b>	Ascensia Diabetes Care	0345 6006030	<a href="https://www.contournextone.co.uk/free-meter/">https://www.contournextone.co.uk/free-meter/</a>
<b>Freestyle Lite Meter</b>	Abbott	0800 1701177 or HCP line 0800 0321016	adchelpuk@abbott.com