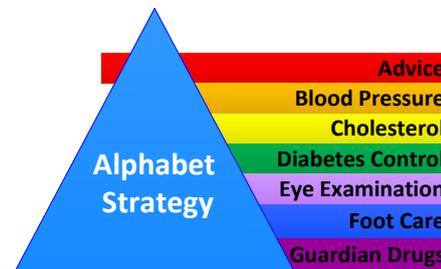




Blood Glucose Self-Monitoring Guidelines

For recommended cost-effective meters & blood glucose strips – refer to APC document click here [RD024](#)



Introduction

Blood glucose self-monitoring is indicated in most patients with insulin-treated diabetes but its value is limited unless users self-adjust their insulin dosage according to results. It is arguably of less benefit in type 2 diabetes treated with diet alone or with oral medications, where management is usually guided by HbA1c. However, some patients with type 2 diabetes find home glucose monitoring educational and empowering. Glucose monitoring should only be started when there is a clear need and purpose agreed with the user, with instructions and education in regard to appropriate testing, timing of test and how to act upon results. It is not recommended in patients who are reluctant and in whom it will have little influence on management. Patients should be encouraged to test minimally to achieve and maintain good glycaemic control.

Target Blood Glucose range: 4 – 7 mmol/l, or as individually agreed with the patient

The majority of these patients will not need to self-monitor blood glucose:

Type 2 diabetes on diet and lifestyle
Monotherapy or combinations: Metformin, Pioglitazone, DPP-4 inhibitors, SGLT2 inhibitors, GLP-1 receptor agonists

Type 2 diabetes	<p>On sulphonylureas/glinides</p> <p>Explain and offer glucose monitoring and start if users agree or spontaneously request it. Encourage monitoring if control is sub-optimal (i.e. HbA1c >58 mmol/mol (>7.5%) and especially if insulin is likely to be needed soon. Hypoglycaemia in vulnerable groups (e.g. elderly, renal impairment) may need review of medication.</p> <p><i>Recommended regime:</i> twice daily (varying times of testing) - once a week if HbA1c >58 mmol/mol (7.5%), once a fortnight if HbA1c <58 mmol/mol (<7.5%).</p>
	<p>On insulin</p> <p>Monitoring is strongly recommended and the results should be used to adjust insulin dosage regularly. Some patients may need to test up to four times a day depending on their insulin regimen.</p> <p><i>Recommended regime:</i> test four times a day (before each meal and bedtime) – twice a week if HbA1c >58mmol/mol (>7.5%), once a week if HbA1c <58 mmol/mol (<7.5%).</p>
Type 1 Diabetes	<p>Monitoring is strongly recommended and the results should be used to adjust the insulin dosage regularly. It is likely most patients may need to test up to four times a day depending on the insulin regime.</p> <p><i>Recommended regime:</i> This will depend on individual patients but up to four times a day (before meals and at bedtime).</p>
	<p>Carbohydrate counting</p> <p>These patients need to monitor blood glucose four – six times daily to adjust insulin dose at each mealtime depending on pre-meal blood glucose and carbohydrate content of food. Ketone monitoring with a blood ketone meter, particularly in women planning pregnancy and as part of sick day rules is recommended.</p>
	<p>On CSII (insulin pump) therapy</p> <p>These patients need to test four - six times daily (absolute minimum) for the reasons as above plus to prevent diabetic ketoacidosis, more frequent testing may be required.</p>
Children/ Young Adults	<p>Monitoring is strongly recommended and the results should be used to adjust insulin dose regularly.</p> <p><i>Recommended regime:</i> test as directed by paediatrician. As a minimum, test twice a day (preferably before breakfast and before tea/dinner) every day and more frequently if wide glycaemic variability/ frequent hypoglycaemia/unpredictable blood glucose levels, hypoglycaemic unawareness.</p>
Special situations (test more often)	<p>During pregnancy or planning pregnancy - For women with type 1 diabetes and some women with type 2 diabetes, frequency of monitoring may increase from 4-10 times per day. Patients with Gestational Diabetes, whether they are on insulin or not will need to check at least 4 times a day.</p> <p>During illness or during changes in therapy.</p> <p>If lifestyle changes (e.g. changes in diet or exercise), or during prolonged fasting (e.g. Ramadan, and taking sulphonylureas/insulin).</p> <p>If hypoglycaemia is more frequent and/or hypoglycaemic unawareness.</p>

Driving within the law and safety: DVLA advice to patients

- You must be able to recognise or self-treat your hypos
- If on insulin or sulphonylureas or glinides: test blood glucose within 2 hours before driving and every two hours whilst driving
- Group 2 drivers (bus/lorry) on a sulphonylurea/glinide/insulin are required by law to monitor blood glucose level at least twice daily and at times relevant to driving
- If blood glucose is ≤5 mmol/l, don't drive; take carbohydrate (e.g. couple of biscuits or a piece of fruit) before driving
- If you are having a hypo (<4 mmol/l), treat the hypo and don't drive for at least 45 minutes after recovery

Top tips for SMBG testing - assess:

- self-monitoring skills e.g. correct technique, appropriate site (side of middle, ring or little finger) hand washing, timing of test
- frequency of testing (annually)
- benefits (self interpretation of results and discussion with health professional)