Self-monitoring of blood glucose (SMBG) in adults with diabetes guidelines

Diabetes Type	Treatment Group	**Monitoring Regime** *Consider high risk groups (e.g. drivers): individual patients' clinical needs must be taken into account* *Refer to key practice points overleaf*	Approximate number of tests required
Type 2	Diet alone *or* metformin	• Initiation and dose titration *(as an educational tool to understand lifestyle interventions)* • Monitor regularly through HbA1c - *SMBG is not normally recommended as part of routine care unless clinically indicated (e.g. rapid weight loss, evidence of low blood glucose, during periods of illness or use of steroids)*	**NONE***
	Tablets and non-insulin injectables which carry a risk of inducing hypoglycaemia (see overleaf)	• Initial monitoring once or twice daily for 3 months *then* • Vary testing times during the day to identify hypoglycaemia - *More frequent monitoring may be required in the elderly, during periods of illness, poor control, or if driving***	**1 box (50 tests) every 1-3 months**
	Insulin therapy +/- oral hypoglycaemics	• Twice a day - *More frequent monitoring may be required during periods of illness, poor control, or if driving***	**1-2 boxes (50-100 tests) per month**

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Type 1	All people with Type 1 diabetes	• Recommend testing at least 4 times a day, including before each meal and before bed • Recommend testing at least 4 times a day, and up to 10 times a day if any of the following apply: - the desired target for blood glucose control (HbA1c) is not achieved - the frequency of hypoglycaemic episodes increases - there is a legal requirement to do so (such as before driving) - during periods of illness - before, during and after sport - when planning pregnancy, during pregnancy and while breastfeeding (see below) - if there is a need to know blood glucose levels more than 4 times a day for other reasons (for example, impaired awareness of hypoglycaemia, high risk activities) • Enable additional blood glucose testing (more than 10 times a day if this is necessary because of the person's lifestyle (for example, driving for a long period of time, undertaking high risk activity or occupation, travel) or if the person has impaired awareness of hypoglycaemia	**2 boxes (100 tests) per month** **At least 2 boxes per month and up to 6 boxes per month.** **According to frequency of testing instructions from consultant**

Diabetes Type	Treatment Group	**Monitoring Regime** *Consider high risk groups (e.g. drivers): individual patients' clinical needs must be taken into account* *Refer to key practice points overleaf*	**Approximate number of tests required**
Pregnancy & **Pre-conception**	All pregnant women with pre-gestational and/or gestational diabetes	**Type 1:** to test their fasting, pre-meal, 1-hour post-meal and bedtime blood glucose levels daily during pregnancy. **Type 2 diabetes or gestational diabetes and on a multiple daily insulin injection regimen:** to test their fasting, pre-meal, 1-hour post-meal and bedtime blood glucose levels daily during pregnancy. **Type 2 diabetes or gestational diabetes**: test fasting and 1-hour post-meal blood glucose levels daily during pregnancy if they are: • on diet and exercise therapy or • taking oral therapy (with or without diet and exercise therapy) or single-dose intermediate-acting or long-acting insulin	**Up to 6 boxes per month** **Up to 6 boxes per month** **Up to 3 boxes per month**
Insulin pump or **Intensive management**	Frequent testing essential in patients using pump therapy or carbohydrate counting	• Testing may be up to10 times a day on specialist advice - *A management plan should be developed and agreed with the individual, and reviewed every 3 months* -	**Between 3 and 6 boxes boxes (150-300 tests) per month**

*One box of 50 test strips may be required as part of initial patient education for those in the 'diet alone' treatment group
**Additional recommendations apply for Group 2 licence holders. See DVLA for more information: https://www.gov.uk/diabetes-driving

Key Practice points

- Individual patient's clinical needs must be taken into account
- Blood glucose monitoring should form part of a wider programme of diabetes management
- Hypoglycaemia is associated with the following medicines:
    - Sulphonylureas; GLP-1s (in combination with orals); Glinides; Gliptins
- More frequent monitoring may be required during periods of illness, instability, and for **driving requirements**
    - The DVLA requirements differ for Group 1 (car or motorcycle) and Group 2 (LGV or PCV licence) drivers.
    - More frequent testing may be required depending on journey length and type of treatment used
    - Please see DVLA for more information https://www.gov.uk/diabetes-driving
- At their annual diabetes review, individuals should be assessed by a healthcare professional on their SMBG activity. This review should incorporate:
    - Training on self monitoring skills
    - The quality, technique accuracy and frequency of testing
    - How to interpret and respond to their results
    - The impact of SMBG on quality of life
    - The continued benefit of SMBG
    - The equipment used
- All results should be recorded with time and date indicating if pre or post prandial to provide a cumulative record as a basis for changes in therapy
- Prescribers should judge whether or not it is necessary to list blood glucose strips in patient repeat medication list
- In conditions where HbA1c may be unreliable (such as haemoglobinopathy and chronic renal failure) SMBG may be the monitoring method of choice
- Patients should only obtain blood glucose monitoring equipment following discussion with their diabetes care team and/or GP
- Patients, doctors and nurses should receive appropriate education on using blood glucose meters. All blood glucose meters should be subject to regular quality control

References:

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