Who to test, when to test?

Self-monitoring of Blood Glucose (SMBG)
Guidance for Healthcare Professionals

NHS
Vale of York
Clinical Commissioning Group

NHS
York Teaching Hospital
NHS Foundation Trust

Your diabetes
Vale of York diabetes community

NHS
Scarborough and Ryedale
Clinical Commissioning Group

Principles

People should be given adequate training and education in self-monitoring techniques and they and their health professionals should be clear about what they hope to achieve by SMBG. Individuals should also be able to utilise their blood glucose results to adjust their lifestyle and if relevant, insulin doses accordingly.

Annual review is recommended to assess the continued benefit in addition to their monitoring frequency and ability to use/maintain the glucose meter.

Consider: is testing cost effective? Is the frequency appropriate?

Recommendations

- There is evidence of benefit for SMBG in those with Type 1 and Type 2 diabetes on insulin but no robust evidence that SMBG has positive clinical outcomes for those with Type 2 diabetes on oral antidiabetic agents or diet for whom SMBG may have an adverse impact on quality of life.
- Patients who do not find testing helpful should not feel they have to either start or continue testing.
- In general, blood glucose concentrations fluctuate more widely in people with Type 1 diabetes than those with Type 2 diabetes.
- Children and adolescents may need to test more frequently due to growth and development.
- Women who are pregnant, who develop gestational diabetes or who are planning a pregnancy will need much more frequent and intensive testing. This should be discussed with a Diabetes Specialist Nurse or a doctor specialising in diabetes.

Driving and DVLA guidance

People with diabetes who drive and are prescribed insulin, sulfonylureas or nateglinide/repaglinide:

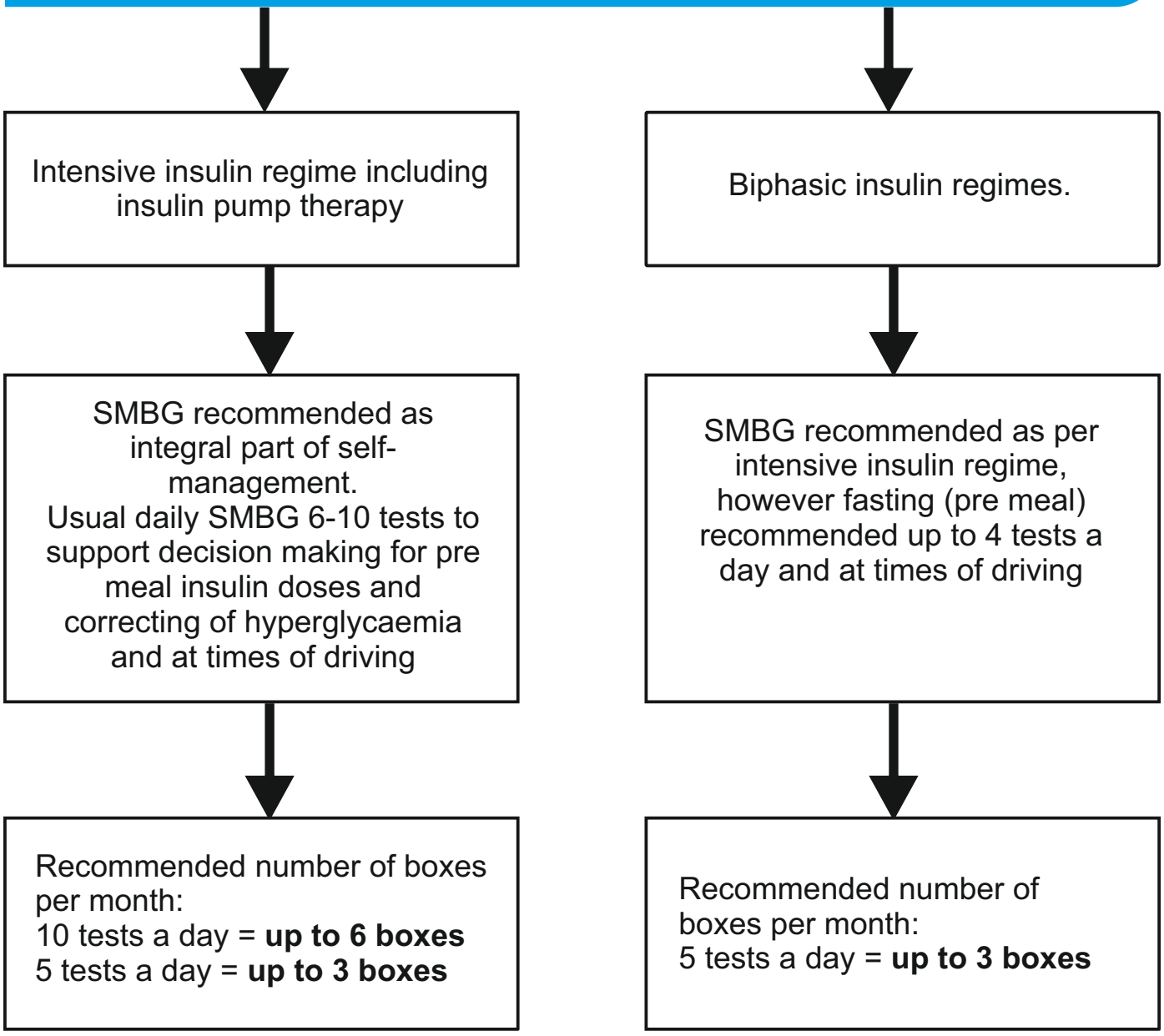
- Must be aware of hypoglycaemia: how to avoid, recognise and treat it and be under regular review.
- Those managed by tablets carrying hypoglycaemia risk should be offered SMBG at times relevant to driving to enable the detection of hypoglycaemia – see p4 and www.gov.uk/dvla/fitnesstodrive for professional advice
- **People on insulin therapy** must monitor blood glucose levels in relation to driving. They should inform the DVLA that they take insulin via www.gov.uk/diabetes-driving or phone: 0300 790 6806
  They should check blood glucose before setting out to drive and every two hours whilst travelling.
  If the blood glucose level is 5.0mmol/L or less, take a snack, and re-check as above.
  If less than 4.0mmol/L or they feel hypoglycaemic: do not drive. Following appropriate treatment and resolution, they must wait 45 minutes before starting to drive again.

- People on insulin using any type of continuous glucose monitoring must monitor capillary blood glucose levels as outlined above, in addition to CGM.
- **Severe hypoglycaemia** - requiring another person's assistance – is a major issue: please read the full guidance
- **Group 2 drivers** (bus and lorry) – see www.gov.uk/dvla/fitnesstodrive

Further recommendations

- Urine testing is not recommended
- 3-6 monthly HbA1C should be sufficient indicator of control in those who are not blood glucose monitoring.
- If SMBG is indicated but patients are unable to perform it for whatever reason, alternative arrangements through carers or district nurses will be sought.

Type 1 Diabetes – regime containing



Type 2 Diabetes – regime containing

Insulin Intensive insulin regime (Basal Bolus regime)	Insulin Daily or twice daily +/-oral hypoglycaemic agents	Sulfonylureas & Glinides (Nateglinide / Repaglinide)	Metformin, +/- Piogltazone, DPP4i, SGLT2i & GLP-1	Diet controlled only
SMBG recommended as an integral part of self-management. Usual daily SMBG up to 5 times a day pre meal and at times of driving	SMBG recommended for insulin titration. Titration is based on 1-3 days of fasting blood glucose results daily. SMBG also recommended if HbA1c raised but fasting glucose normal. Once SMBG within target range, monitoring can be performed less frequently. Consider discussion with community diabetes team if required	SMBG should only be for specific purposes such as: Ensuring safety during activities eg driving, or exercise. May be appropriate initially when used in combination with other new agents e.g. DPP4i, SGLT2i, GLP-1	SMBG not routinely recommended (unless in combination with sulfonylurea or glinides.) These agents do not normally cause hypoglycaemia	SMBG not routinely recommended
Recommended number of boxes per month: 5 tests a day= **up to 3 boxes**	Recommended number of boxes per month: 2-3 tests a day= **up to 2 boxes**	Recommended number of boxes per month: 1-2 tests a day= **1 box**		

The recommended frequency of testing may need to be increased during:

- Acute intercurrent illness (including corticosteroid treatment)
- Therapy changes e.g. oral hypoglycaemic agents are added or titrated up
- In cases of current hypoglycaemia or suspected asymptomatic hypoglycaemia.
- Lifestyle changes or women with diabetes who are planning a pregnancy or pregnant
- If the patient is undergoing intensive diabetes education e.g BITES or DAFNE
- If the patient is embarking on insulin pump therapy.