Self-monitoring of blood glucose in type 2 diabetes: limited use for a target population

Glycated haemoglobin (HbA1c) remains the primary basis for assessing blood glucose control in diabetics.

Self-monitoring of blood glucose (SMBG) can be an additional component of diabetic management, but does not replace the measurement of HbA1c. It should be used only if it is likely to lead to a modification of treatment.

Self-monitoring of blood glucose should be reserved for certain type 2 diabetic patients in specific situations

- Insulin-treated patients.
- Patients being considered for short- or medium-term insulin therapy
- Patients treated by oral glucose lowering drugs (sulfonylureas or glinides, alone or in combination with other antidiabetic drugs) when hypoglycaemic episodes are suspected.
- Patients in whom the treatment target is not achieved, particularly because of an intercurrent illness or treatment.

Self-monitoring of blood glucose should not be systematic or passive

- The measurements should be likely to achieve therapeutic results.
- SMBG should be part of an educational programme including the patient and close relatives (family members) where necessary. When prescribing the SMBG device, it is essential to explain the issues to the patient and to organise this self-monitoring with the patient, including the frequency, scheduling, blood glucose targets and treatment adjustments to be made by the patient or doctor based on the results.
- In all cases, the patient should maintain an appropriate diet and physical exercise.

Laboratory measurements are still necessary

- The measurement of glycated haemoglobin (HbA1c) in venous plasma every three months reflects average blood glucose balance. In type 2 diabetes, HbA1c ≤ 7% is a reasonable target for many patients. However, this target may be adjusted up or down according to the clinical context (patient age, time since onset of diabetes, comorbidities, etc.).
- The measurement of glucose levels in venous plasma every six months may be considered to check the quality of the capillary blood glucose measurements.
Indications in type 2 diabetes

- **Insulin therapy in progress**
  - At least 4 times daily if insulin therapy includes more than one insulin injection daily
  - 2 to 4 times daily if it includes only one insulin injection
  Blood glucose targets:
  - before meals, 70 to 120 mg/dl
  - after meals (2 hours post prandial): < 180 mg/dl.

- **Insulin therapy** scheduled in the short- or medium-term
  - 2 to 4 times daily

- **Blood glucose target not achieved by treatment**
  - Twice weekly to twice daily (max)
    - as a patient education tool to demonstrate the effect of physical exercise, diet and medical treatment.

- **Treatment with oral glucose lowering drugs** (sulfonylureas or gliptines, alone or in combination with other antidiabetic drugs)
  - Twice weekly to twice daily (max)
    - SMBG to be performed at least two days a week, at different time points, to detect hypoglycaemic episodes and adjust drug dosage if necessary.

Suggested frequency of SMBG (if such monitoring is indicated)

The blood glucose self-monitoring device and its prescription

- The prescriber of an SMBG device (consisting of a blood glucose monitor and associated reagents such as electrodes, strips or sensors) should specify:
  - the unit of measurement, mg/dl or mmol/l, required for the display on the blood glucose monitor.
    - The display should be locked on the selected unit of measurement.

- the number of blood glucose self-monitorings to be performed daily or weekly
  - and not the number of boxes to be issued, so that the pharmacist can provide the appropriate packaging.

- By a ministerial order dated 25 February 2011, coverage of blood glucose self-monitoring strips by the national health insurance scheme is limited to 200 a year, except in patients for whom insulin therapy is in progress or scheduled in the short or medium term.
- Blood glucose monitors that are covered are guaranteed for at least 4 years.
- Patients can be reimbursed for one blood glucose monitor every 4 years.
- Patients can be reimbursed for one lancing device every year.