



## Appendix 5

### Self-Monitoring of Blood Glucose (SMBG) Recommendation Tool for Health-Care Providers

#### Basic SMBG requirements (must be met)

The person with diabetes (or a family member/caregiver) must have the knowledge and skills to use a home blood glucose monitor and to record the results in an organized fashion.

The person with diabetes and/or members of the health-care team must be willing to review and act upon the SMBG results in addition to the glycated hemoglobin (A1C) results.



#### A. REGULAR SMBG is required if the person with diabetes is:

SITUATION	SMBG RECOMMENDATION
Using basal-bolus insulin injection therapy of insulin ( $\geq 4$ times per day) Using CSII (insulin pump)	SMBG $\geq 4$ times per day (see page 2 – 4 times per day – [basal-bolus])
Using insulin $< 4$ times per day	SMBG at least as often as insulin is being given (see page 2 – premixed or basal insulin only)
Pregnant (or planning a pregnancy), whether using insulin or not Hospitalized or acutely ill	SMBG individualized and may involve SMBG $\geq 4$ times per day
Starting a new medication known to cause hyperglycemia (e.g. steroids) Experiencing an illness known to cause hyperglycemia (e.g. infection)	SMBG individualized and may involve SMBG $\geq 2$ times per day



#### B. INCREASED FREQUENCY OF SMBG may be required if the person with diabetes is:

SITUATION	SMBG RECOMMENDATION
Using drugs known to cause hypoglycemia (e.g. sulfonylureas, meglitinides)	SMBG at times when symptoms of hypoglycemia occur or at times when hypoglycemia has previously occurred
Has an occupation that requires strict avoidance of hypoglycemia	SMBG as often as is required by employer
Not meeting glycaemic targets	SMBG $\geq 2$ times per day, to assist in healthy behaviour interventions and/or medication changes until such time as glycaemic targets are met
Newly diagnosed with diabetes ( $< 6$ months)	SMBG $\geq 1$ time per day (at different times of day) to learn the effects of various meals, exercise and/or medications on blood glucose
Treated with healthy behaviour interventions and noninsulin antihyperglycaemic agents and is meeting glycaemic targets	Some people with diabetes might benefit from very infrequent checking (SMBG once or twice per week) to ensure that glycaemic targets are being met between A1C tests



#### C. DAILY SMBG is NOT usually required if the person with diabetes:

Is treated only with healthy behaviour interventions and is meeting glycaemic targets

Has prediabetes

<b>Suggested SMBG Patterns for People Using Insulin</b>								
<b>Basal Insulin Only</b> – NPH or long-acting insulin analog, typically given at bedtime. <i>SMBG at least as often as insulin is being given.</i> Optional, less frequent SMBG can be done at other times of day to ensure glycemic stability throughout the day.								
	BREAKFAST		LUNCH		SUPPER		BEDTIME	NIGHT
	before	after	before	after	before	after		
Insulin							NPH/long-acting	
SMBG pattern	<b>SMBG test</b>							
Adjustment	Basal insulin ↑ if BG high ↓ if BG low							
<b>Premixed</b> – typically given pre-breakfast and pre-supper. <i>SMBG at least as often as insulin is being given.</i> SMBG QID until glycemic targets are met; SMBG BID (alternating times) is usually sufficient once glycemic targets are met.								
	BREAKFAST		LUNCH		SUPPER		BEDTIME	NIGHT
	before	after	before	after	before	after		
Insulin	pre-mixed				pre-mixed			
SMBG pattern 1: Starting	<b>SMBG test</b>		<b>SMBG test</b>		<b>SMBG test</b>		<b>SMBG test</b>	
SMBG pattern 2: Stable Alternating daily	<b>SMBG test</b>				<b>SMBG test</b>			
			<b>SMBG test</b>				<b>SMBG test</b>	
Adjustment	Pre-supper insulin ↑ if BG high ↓ if BG low		Pre-breakfast insulin ↑ if BG high ↓ if BG low		Pre-breakfast insulin ↑ if BG high ↓ if BG low		Pre-supper insulin ↑ if BG high ↓ if BG low	
<b>Basal-bolus injection therapy or CSII</b> – typically given as rapid-acting insulin (bolus) before each meal and NPH or long-acting analogue (basal) typically given at bedtime or as rapid-acting insulin with insulin pump. SMBG should be QID, pre-meal and bedtime, in order to assess previous dose and to adjust next dose. Some people with diabetes find that post-prandial checking can also be helpful.								
	BREAKFAST		LUNCH		SUPPER		BEDTIME	NIGHT
	before	after	before	after	before	after		
Insulin	rapid/ (bolus)		rapid/ (bolus)		rapid/ (bolus)		NPH/long-acting	
SMBG pattern 1: Starting or stable	<b>SMBG test</b>		<b>SMBG test</b>		<b>SMBG test</b>		<b>SMBG test</b>	
SMBG pattern 2: Stable, focus on postmeal BG	<b>SMBG test</b>	<b>SMBG test</b>		<b>SMBG test</b>		<b>SMBG test</b>		
SMBG pattern 3: Intensive management	<b>SMBG test</b>	<b>SMBG test</b>	<b>SMBG test</b>	<b>SMBG test</b>	<b>SMBG test</b>	<b>SMBG test</b>	<b>SMBG test</b>	<b>SMBG test</b>
Adjustment	Basal insulin ↑ if BG high ↓ if BG low	Pre-breakfast insulin ↑ if BG high ↓ if BG low		Pre-lunch insulin ↑ if BG high ↓ if BG low		Pre-supper insulin ↑ if BG high ↓ if BG low		Basal insulin ↓ if BG low
BG, blood glucose; CSII, continuous subcutaneous insulin infusion; SMBG, self-monitoring of blood glucose								