













Meter	Accuracy (esp. ability to detect ↓BG)	Blood (mCL) Required	Re-Apply Blood?	Comments / Extra Features	App Available	Cost /100 strip
Accu-Chek Guide 	✓✓ typically ± 0.3 mmol/L	0.6 mCL	Cannot re-apply blood	• Strip ejector. • Option for AST (palm, forearm, upper arm).	mySugr	\$89
One Touch Ultra 2 	✓ typically ± 0.6 mmol/L	1 mCL	Cannot re-apply blood	• Requires coding. • Option for AST (forearm or palm, but requires a special lancing device).	no app	\$97
One Touch Verio Flex 	✓✓ typically ± 0.3 mmol/L	0.4 mCL	Cannot re-apply blood	• Colour bar classifies glucose level.	OneTouch Reveal	\$97
One Touch Verio Reflect 	✓ typically ± 0.6 mmol/L	0.4 mCL	Cannot re-apply blood	• Colour bar / emoji classifies glucose level.	OneTouch Reveal	\$97
Contour Next 	✓✓ typically ± 0.3 mmol/L	0.6 mCL	Can re-apply blood	• Option for AST (palm).	no app	\$91
Contour Next EZ 	✓✓ typically ± 0.3 mmol/L	0.6 mCL	Can re-apply blood	• No coding: fast 5 second countdown.	no app	\$91
Contour Next One 	✓✓ typically ± 0.3 mmol/L	0.6 mCL	Can re-apply blood	• Small size. • Option for AST (palm).	Contour Diabetes	\$91
Contour Next Gen 	✓✓ typically ± 0.3 mmol/L	0.6 mCL	Can re-apply blood	• Option for AST (palm).	Contour Diabetes	\$91
Freestyle Lite 	✓ typically ± 0.6 mmol/L	0.3 mCL	Can re-apply blood	• Option for AST (upper arm, forearm, hand, fingers, thigh, or calf).	no app	\$90
GE200 	✓✓ typically ± 0.3 mmol/L	0.75 mCL	Cannot re-apply blood	• Option for AST (palm or forearm).	no app	\$69
Oracle EZ 	✓ typically ± 0.8 mmol/L	0.7 mCL	Cannot re-apply blood	• Talking audio (French & English). • Option for AST (palm, forearm, upper arm, calf, or thigh).	no app	\$90
Spirit 	✓ typically ± 0.6 mmol/L	0.5 mCL	Cannot re-apply blood	• Option for AST (palm or forearm).	no app	\$65

Clinical Pearls	
• There is no need to choose a meter with numerous features if the patient does not plan to use those features.	
• If capillary testing >6-8 times per day, a continuous system can be more affordable and convenient than capillary testing.	
• Testing has limited purpose if results are not used to adjust treatment.	
• Continuous systems are preferred in Type 1 diabetes (↑ safety, ↓ A1c).	

Table 1. Who should test? ^{1-5,7,75-79}		
Type 2 Diabetes Mellitus	Diet-controlled	No routine testing if targets met. ^{NICE} May recommend testing if: • will result in a change in therapy or behaviour/ adherence to medications, diet, physical activity e.g. walk after meal ↓PPBG) managing, confirming, or preventing hypoglycemia (e.g. before driving or exercise) / acute illness, see RxFiles: SADMANS). Test with corticosteroid tx, see RxFiles: Insulin pg 52 . If testing, capillary meters (finger prick) usually ↓ cost. Periodic continuous may be used for adjustments. ^{ADA}
	On meds other than insulin	May capillary test at least as often as taking insulin (for safety and to help adjust insulin dose). Evolving continuous systems recommendations/ evidence. ⁴ Some recommend if on any insulin ^{ADA} vs some if unable to capillary test, recurrent/ severe/ unaware of hypoglycemia, or if capillary test ≥8x/d. ^{NICE} • CGM or isCGM vs usual care/SMBG (26 RCTs, 2783 pt, f/u ~8-12wk): ↓ A1c ~0.2-3%, no difference in hypoglycemia but ↑ AEs ~1.2 (e.g. sensor insertion, skin irritation, etc) & CGM ↓ user satisfaction while isCGM ↑ user satisfaction. ^{86 Seidu 24}
	On insulin	Continuous systems preferred in T1DM (real-time CGM ↑ evidence?). ^{DC} If capillary testing, target ≥ QID.
T1DM		Usually requires regular or continuous testing to guide management. See also page 57 . Adjust "time in range" for continuous systems (see online Table 4).
Diabetes in Pregnancy		










Meter	General Notes	Sensor	Alerts	Reader	Cost
CGM= Continuous glucose monitoring	Apps available		app must be open to transmit		/30 days
Libre 2  intermittent isCGM; ≥4yr	Can falsely detect ↓BG. ⁸⁴ Readings lag ~5-15min behind capillary testing as continuous measures interstitial fluid glucose. Lack of clinical outcome evidence beyond surrogate glyemic differences in T2DM. ⁸⁶	14 day duration; on back of arm; about toonie-sized.	✓ To interpret alert, must scan sensor; range 20ft.	~\$65 reader, can also use cellphone. Should scan q8hr. ^{ADA}	\$220
Libre 3 Plus  real-time CGM; ≥2yr (Libre 3 ≥4yr ^{9/c} USA)	DI: Falsely ↑ readings if on Vitamin C >500mg/d with Libre or if on hydroxyurea with Dexcom. ⁷⁹ Dexcom G6&7 and Libre 2 approved in pregnancy. Sensor accuracy: upper arm > abdomen? ^{expert}	15 day duration; on back of arm; about nickel-sized.	✓✓ Sends real-time info to phone; range 33 ft.	~\$65 Reader; must be near cellphone at all times to transmit.	\$230
Dexcom G6  D/C soon real-time CGM; ≥2yr		10 day duration; on abdomen (≥2yr) or back of arm (≥18yr).	✓✓ Sends real-time info to phone/reader; range 20 ft.	~\$500 reader, can also use cellphone & must be near q3hr.	\$350
Dexcom G7  real-time CGM; ≥2yr		10 day duration; ^{≥18yr} 15 day FDA ²⁵ on upper arm (2-6yr buttock option).	✓✓ Sends real-time info to phone/reader; range 20ft.	~\$75 reader; can also use cellphone and must be near q24hr.	\$275

Table 2. Which meter is best for my patient?

For many, any meter will do. Each meter has its pros and cons; see left. Some meters with unique or desirable features include:

<p>Low tech & low cost</p>  <p>GE200</p> <p>~25% lower cost than most other meters; strips very easy to insert.</p>	<p>Highest rated apps in the App Store</p> <p>Accu-Chek Guide  mySugr</p> <p>One Touch Verio Flex or Verio Reflect  OneTouch Reveal</p>
<p>Tiny blood sample</p>  <p>Freestyle Lite</p> <p>Useful if e.g. calluses make drawing blood difficult.</p>	<p>Visually impaired patient</p>  <p>Oracle EZ</p> <p>English & French talking feature.</p>

Capillary meter coverage: SK Typically free with purchase of 100 strips. Sask Health: 200 strips/yr; 400/yr if at high hypoglycemia risk; 3,650/yr if on insulin (800/100d if NIHB).
 Continuous systems coverage: SK: age ≥25 years or ≥65 years & diabetes managed with insulin.^{April 2025} NIHB: any patient on insulin. USA: Medtronic, Eversense.
 If using continuous, still need access to capillary: check accuracy of continuous system, back-up e.g. device stops working.^{NICE,ADA} Discontinued: Libre 1, Medisure Empower.

Blood Glucose Meters

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A1c=glycosylated hemoglobin **AST**=Alternate Site Testing **BG**=blood glucose **CGM**=continuous glucose monitoring **d**=day **DI**=drug interaction **esp**=especially **FDA**=approved Food & Drug Admin
hr=hour(s) **isCGM**=intermittently scanned continuous glucose monitoring system **min(s)**=minute(s) **QID**=four times per day **T1DM**=type 1 diabetes mellitus **T2DM**=type 2 diabetes mellitus
yr(s)=year(s)

Online Extras:

Table 3: Blood Glucose Meter Additional Pearls	
•	When cleaning the skin prior to a capillary test, soap and water is adequate.
•	If using continuous systems, occasional capillary testing may still be required – for example, if results are rapidly changing or do not match how the patient is feeling.
•	Continuous systems are useful to detect nighttime hypoglycemia and/or the Somogyi effect (hypoglycemia at night leading to rebound high blood glucose levels in the morning).
•	Continuous systems have value in the peri-operative and post-operative environment (e.g. when deciding when to restart held medications).
•	Watch for 'alert fatigue' and 'monitoring anxiety' with continuous systems. In patients who have well managed diabetes, a continuous system can sometimes create unnecessary stress and a hyper-awareness of blood glucose values. Alert settings may also need to be changed (e.g. in older adults) to reflect new time-in-range goals.
•	For patients on an insulin pump, continuous systems allow improved monitoring. Automated insulin delivery systems are also being studied which can communicate with continuous monitoring in order to automatically adjust insulin doses. For a review of these new technologies, see Marks et al. ⁸⁵ For Sask Health insulin pump criteria (2021), see this link .
•	Rarely, the sensor of a continuous system will detach. Typically contacting the company will result in them sending a new sensor to the patient under warranty.
•	For patients concerned with privacy, the Dexcom G6 sensor can attach to the abdomen and feel more discreet than attaching to the back of the arm. Teaching video here .


Table 4. Diabetes Monitoring Targets for Continuous Systems. <small>ACE 2021</small>			
	T1DM or T2DM	Older Adults / Frailty	T1DM in Pregnancy
Time in Range	>70% between 4-10 mmol/L	>50% between 4-10 mmol/L	>70% between 3.5-7.8 mmol/L
Time Below Range	<4% below 4 mmol/L <1% below 3 mmol/L	<1% below 4 mmol/L 0% below 3 mmol/L	<4% below 3.5 mmol/L <1% below 3 mmol/L
Time Above Range	<25% above 10 mmol/L <5% above 14 mmol/L	<10% above 14 mmol/L	<25% above 10 mmol/L

Table 5. How accurate are capillary blood glucose meters?													
Below is collected accuracy data for common capillary blood glucose meters. Data collected from manufacturer instruction manuals. All blood glucose meters on the Canadian market meet ISO 15 international standards. Results are for measurements below 5.5 mmol/L; * in general meters are more accurate when measuring higher blood glucose readings. For our colour comparison chart, we gave two checks for accuracy if a meter consistently (i.e. >80% of the time) measured results within ± 0.28 mmol/L. (Note: 0.28 mmol/L was rounded to 0.3 mmol/L, and 0.56 mmol/L was rounded to 0.6 mmol/L, for the colour comparison chart).													
	Accu-Chek	OneTouch			Contour				FreeStyle	General Electric	Oracle	Spirit	MediSure
	Guide	Ultra 2	Verio Flex	Verio Reflect	Next	Next Gen	Next EZ	Next One	Lite	GE200	Oracle	Spirit	Empower
Within +/- 0.28 mmol/L	94.1%	48.8%	82%	73.7%	92.8%	83.3%	91%	90.3%	70.1%	92.2%	-	55.4%	68.7%

Within +/- 0.56 mmol/L	100%	84.5%	98%	96.8%	99.4%	99%	100%	100%	95.5%	100%	-	88.2%	96.9%
Within +/- 0.83 mmol/L	100%	100%	100%	100%	100%	100%	100%	100%	99.5%	100%	100%	98.9%	100%

*One Touch Ultra 2 was tested for accuracy below 4.2 mmol/L (rather than 5.5 mmol/L).

Discontinued:

Medisure Empower		✓ typically ± 0.6 mmol/L	0.5 µL	Cannot re-apply blood	<ul style="list-style-type: none"> • Illuminated. • Strip ejector. • Option for AST (forearm, upper arm, hand). 	no app	--
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Libre 1: a continuous system requiring intermittent scan q8hr; age ≥18yrs; 14 day duration sensor; NOT able to send alerts; same cost as Libre 2; reader available or can use cellphone to scan; finger poke required to make treatment decisions.

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