

February 2018 ~ Resource #340202

Continuous Glucose Monitoring FAQs

Continuous glucose monitoring (CGM) is the newest way to monitor glucose levels. Most CGMs check glucose about every one to five minutes, display readings, and can alert patients when glucose levels are higher or lower than preset thresholds. The *FreeStyle Libre* is a little different. It doesn't alert patients to highs and lows. Readings are only captured when patients scan for them. Currently available CGMs can show trends as glucose levels rise or fall. CGMs can display graphs showing glucose levels over specified periods of time. Most CGMs still require fingerstick glucose readings in order to make treatment decisions. Only the *Dexcom G5 Mobile* and *FreeStyle Libre* systems are currently approved to be used alone (without fingerstick glucose readings) to make treatment decisions and adjust diabetes medications.^{6-9,24} More data are needed before these can be relied upon for inpatient treatment decisions. The chart below answers common questions related to continuous glucose monitoring.

Topic/Question	Answer/Pertinent Information
What different types and options for continuous glucose monitoring are available?	Diagnostic CGM may be available at some prescriber's offices, usually an endocrinologist. It can be provided to patients on a short-term basis in order to analyze glucose trends (e.g., three days).² Examples include the <i>FreeStyle Libre Pro</i> and <i>iPro2 Professional</i>.² Personal CGM is used long-term by a patient as a part of their diabetes management.² Two different types of personal CGMs are available. • Stand-alone CGM: provides continuous glucose levels, with accessible tracking and trending. Examples are: ○ <i>Dexcom G4 Platinum:</i> compatible with <i>Animas Vibe</i> and <i>Tandem T:slim G4</i> (U.S. only) insulin pumps. ○ <i>Dexcom G5 Mobile:</i> compatible with both Apple and Android technology. ▪ See https://www.dexcom.com/faq/what-devices-and-software-are-compatible-dexcom-cgm-apps for a listing of compatible devices. ○ <i>FreeStyle Libre:</i> utilizes flash glucose monitoring (glucose readings only captured when scanned for).¹⁰ ▪ Glucose values are reported when the user scans the sensor by passing a reader close to the sensor.¹⁰ ▪ Has a built in glucose meter compatible with <i>FreeStyle Precision Neo</i> strips.^{4,25} • Combination insulin pump and CGM: integrates continuous glucose readings with insulin pump technology. Examples are: ○ <i>Animas Vibe</i> (uses <i>Dexcom 4 Platinum</i> sensors) ○ <i>Medtronic MiniMed 530G</i> (U.S. only) and <i>630G</i> (uses <i>Medtronic Enlite</i> sensors) ▪ Compatible with Bayer's <i>Contour Next Link 2.4</i> wireless meter.^{16,17} ○ <i>Medtronic MiniMed 670G</i> (U.S. only [uses <i>Medtronic Enlite</i> or <i>Guardian</i> sensors]) ○ <i>Tandem T:slim G4</i> (U.S. only [uses <i>Dexcom 4 Platinum</i> sensors])

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Topic/Question	Answer/Pertinent Information
How does continuous glucose monitoring work?	• Most continuous glucose monitoring systems consists of three basic parts to measure, record, and display glucose readings. These parts usually include a sensor (with a fine needle for insertion into the skin), transmitter, and receiver. ○ The <i>FreeStyle Libre</i> system is slightly different. Instead of the transmitter and receiver, it uses a portable reader. The reader is manually waved over the sensor to capture glucose readings.^{4,25} • Sensor: acts similar to a test strip to measure glucose values.¹ ○ Measures glucose level within interstitial fluid (fluid just below the surface of the skin).¹ ▪ Test strips measure glucose levels within blood. ▪ Interstitial fluid glucose levels may lag behind blood glucose readings by a few minutes, especially when glucose levels are changing.⁵ ○ Sends an electric signal through a wire to the transmitter (except for <i>FreeStyle Libre</i>). ○ Most sensors need to be changed every six or seven days (ten days for <i>FreeStyle Libre</i> [14 days in Canada]).^{1,4,7,25} • Transmitter: attaches to sensor base and sends glucose levels to the receiver or reader to display results.¹ ○ Transmitters must be within range of the receiver for proper functioning. Acceptable distances are: ▪ within six feet (2 meters [Canada]):^{1,29} <i>MiniMed 530G</i> (U.S. only), <i>630G</i>, and <i>670G</i> (U.S. only) ▪ within 12 feet (3.6 meters [Canada]):^{1,26} <i>Animas Vibe</i> ▪ within 20 feet (6 meters [Canada]):^{1,27,28} <i>Dexcom G4 Platinum</i>, <i>Dexcom G5 Mobile</i>, <i>Tandem T:slim</i> (U.S. only) • Receiver or Reader: displays current and stored glucose readings.^{1,4,7,25} ○ Updates in real time (receivers), or when scanned within 1.5 inches (4 cm) of sensor (<i>FreeStyle Libre</i>). ▪ Patients should scan <i>FreeStyle Libre</i> sensors at least once every eight hours.^{4,7,25} ○ Displays trends to aid in decisions about treating highs and lows.¹
Which patients are most appropriate for continuous glucose monitoring?	• Most of the data supporting the use of CGM are in patients with type 1 diabetes.¹² • U.S. endocrinology experts believe CGM should be available to <u>all patients using insulin</u> regardless of diabetes type.¹² • CGM may be appropriate for the following patients: ○ Patients at risk from hypoglycemia:¹² ▪ Athletes ▪ Elderly ▪ Patients with renal impairment ○ Patients with hypoglycemia unawareness.^{10,24} ○ Patients with severe or frequent hypoglycemia.^{10,24} ○ Patients unable to reach A1C goals because of hypoglycemia.

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Topic/Question	Answer/Pertinent Information
What are the approved ages with available continuous glucose monitors?	• <i>Dexcom G4 Platinum</i> and <i>G5 Mobile</i> are approved for patients at least two years old.^{19,20} • <i>FreeStyle Libre</i> is approved for patients at least 18 years old.^{4,25} • <i>Medtronic MiniMed 530G</i> (U.S. only) and <i>630G</i> are approved for patients at least 16 years old.^{16,17} • <i>Medtronic MiniMed 670G</i> (U.S. only) is approved for patients at least 14 year old.¹⁸
What instructions should be given to patients about glucose sensors?	• To avoid irritation, instruct patients to avoid placing sensors on areas that experience rigorous movement during exercise, under a belt, or on the waistline.^{14,15} • Scarred or tattooed areas should not be used for sensor insertion/placement. • The abdomen is the most common part of the body used for sensor placement.^{14,15,19,20} ○ The abdomen is not used for <i>FreeStyle Libre</i> sensors. Apply these on the back of the upper arm.^{4,25} ○ <i>Dexcom G5 sensors</i> can also be placed on the upper buttock for children ages 2 to 17 years old.²⁰ • For most sensors, patients need to wait two hours after sensor placement for glucose readings to be available.¹ ○ It takes 12 hours (1 hour per Canadian labeling) for the <i>FreeStyle Libre</i> to provide glucose readings.^{4,25} • Patients may have difficulty maintaining sensor adhesion. ○ Adhesives such as <i>Skin Tac</i> or <i>Mastisol</i> can be used to ensure adhesion with <i>Guardian</i> sensors.¹⁵ ○ Medical tape can be used to ensure adhesion with <i>Dexcom</i> sensor (e.g., <i>Blenderm</i>, <i>Tegaderm</i>, <i>3M</i> tape). ▪ Be sure not to tape over the transmitter to ensure proper communication to the receiver. ○ <i>FreeStyle Libre</i> sensors should not be reused if they fall off or need to be removed for any reason.⁴ ▪ New sensors should be applied on rotating sites to avoid irritation.⁴ • To remove sensors, instruct patients to gently pull off like an adhesive bandage, starting at the edge.^{4,14,15,19,20,25} ○ Most transmitters are reusable. Remind patients to remove transmitters from sensors.^{14,15,19,20} ○ Sensors should be disposed of in a container appropriate for sharps and blood exposure.^{4,14,15,19,20,25}
What calibration is needed with continuous glucose monitors?	• Most CGMs need to be calibrated at least every 12 hours using fingerstick blood glucose levels.^{1,26-29} ○ Blood glucose levels must be between 40 and 400 mg/dL (2.2 to 22.2 mmol/L) for proper calibration.^{1,27-28} ○ <i>MiniMed 530G</i> (U.S. only) should be calibrated three or four times per day. • <i>FreeStyle Libre</i> does not require fingerstick blood glucose level calibration.^{4,25}
What travel considerations are important with continuous glucose monitors?	• Sensors should not be exposed to x-ray technology. ○ It is safe for patients to go through metal detectors. However, patients should request a manual pat down or remove sensors prior to going through airport security.^{4,19,20,25} • Remind patients to adjust the time if changing time zones.⁴

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Topic/Question	Answer/Pertinent Information
How does water exposure affect continuous glucose monitoring?	- Flexibility with water exposure may be an important factor for patients to consider when selecting a CGM. - Sensors are water resistant to different depths and durations of time depending on the model. For example: <i>FreeStyle Libre</i> sensors are water resistant in up to 3 feet of water (1 meter) for up to 30 minutes.^{4,25} <i>Dexcom G4 Platinum</i> and <i>G5 Mobile</i> sensors are water resistant in up to eight feet of water (2.4 meters) for up to eight hours.
When should continuous glucose monitors NOT be used?	- CGM is not generally recommended for use due to lack of safety information in pregnant, dialysis, or critically ill patients.^{4,13,16-19,25} - Sensors should be removed prior to Computed Tomography (CT) scans, Magnetic Resonance Imaging (MRI), or X-rays.^{4,13,16-19,25}
When are fingerstick blood glucose values needed with continuous glucose monitors?	- Even with CGM, check blood glucose using a fingerstick during the following conditions:^{4,7,14-20} - During times of rapidly changing glucose (e.g., more than 2 mg/dL [0.11 mmol/L] per minute), as interstitial fluid glucose levels may not accurately reflect blood glucose levels. - If patients suspect that a continuous glucose monitor reading may be inaccurate for any reason. - To calibrate continuous glucose monitors (not required for the <i>FreeStyle Libre</i>). - To confirm hypoglycemia or impending hypoglycemia as reported by the continuous glucose monitor readings. - When patients experience symptoms that may be due to low or high blood glucose. - When patients experience symptoms that do not match continuous glucose monitor readings. - When the continuous glucose monitor readings do not indicate a trend. - Before making treatment decisions based on CGM reading (exceptions <i>FreeStyle Libre</i> and <i>Dexcom G5 Mobile</i>).^{6-9,24}
Do any medications interfere with continuous glucose monitoring? <i>Continued...</i>	- Acetaminophen may falsely raise CGM readings from <i>Dexcom G5</i> sensors.¹³ - To be on the safe side, patients should not rely on readings from the <i>Dexcom G5</i> if they have recently taken any product containing acetaminophen.¹³ - High levels of ascorbic acid (vitamin C) and salicylic acid (aspirin) can lead to inaccurate results with the <i>FreeStyle Libre</i>.⁴ - One small pilot study found some evidence that the following medications may interfere with accuracy of CGM readings with the <i>Dexcom 4G Platinum</i> sensors.³ - Acetaminophen - Albuterol - Atenolol - Lisinopril

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Topic/Question	Answer/Pertinent Information
Med interference, continued	Some evidence suggests that medications used on an inpatient basis may also interfere with accurate CGM readings (e.g., dopamine, mannitol, maltose [breakdown product from peritoneal dialysis]).²³
Considerations for continuous glucose monitoring in hospitalized patients.	- Use of CGM in hospitalized patients is still a work in progress.¹⁰ - CGM is not recommended in hospitalized patients until more safety and efficacy data are available.¹¹ - There is concern that some devices may not provide accurate readings with changes in pH, hematocrit levels, blood oxygen tension, and peripheral perfusion.²³ - Studies comparing the efficacy and clinical benefits of CGM devices vs using fingerstick blood glucose monitoring have yielded mixed results.¹¹ - Several studies have been unable to show improved glycemic control with inpatient use of CGM.²⁴ - Recent studies indicate CGM seems to improve identification of hypoglycemia in hospitalized patients.¹¹ This may be a time saver compared to checking fingerstick blood glucose values. - Check to see if your hospital has a policy for handling patients who would like to continue to use their personal CGM while in the hospital. - If use is allowed, consider requiring a waiver to ensure hospital glucose monitoring devices are used to validate glucose values before making treatment decisions. - Work with patients to properly remove and replace sensors as needed. Most CGMs have reusable transmitters. Remove transmitters from sensors to avoid accidental disposal.^{14,15,19,20} - Sensors should be disposed of in an approved sharps container.^{4,14,15,19,20,25}
What are the costs associated with continuous glucose monitoring?	- Costs for CGM equipment and supplies will vary among manufacturers. - Patients should check with their specific insurance carrier to ask about coverage. - Medicare and insurance coverage is becoming more common as newer CGMs are approved to be used to adjust diabetes medications without patients needing to get additional glucose values. - For example patients with type 1 or type 2 diabetes managed with multiple daily insulin injections and testing their blood glucose levels at least four times a day are covered for the <i>Dexcom G5 Mobile</i> or <i>FreeStyle Libre</i> systems by Medicare Part B.^{21,22} Medicaid coverage will vary by state. - In Canada, most private insurers cover the <i>FreeStyle Libre</i>.⁷

Users of this resource are cautioned to use their own professional judgment and consult any other necessary or appropriate sources prior to making clinical judgments based on the content of this document. Our editors have researched the information with input from experts, government agencies, and national organizations. Information and internet links in this article were current as of the date of publication.

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References

1. Wahowiak L. Consumer guide 2017. Continuous glucose monitors. Diabetes Forecast. <http://www.diabetesforecast.org/2017/mar-apr/images/2017-cg-cgm-infographic.gif>. (Accessed January 8, 2018).
2. Shifflett T. Continuous glucose monitoring: everything you need to know. Updated November 24, 2017. <https://www.thediabetescouncil.com/continuous-glucose-monitoring-everything-you-need-to-know/>. (Accessed January 8, 2018).
3. Basu A, Slama MQ, Nicholson WT, et al. Continuous glucose monitor interference with commonly prescribed medications: a pilot study. *J Diabetes Sci Technol* 2017;11:936-41.
4. FreeStyle Libre user manual. Updated September 2017. https://freestyleserver.com/Payloads/IFU/2017_sep/ART38553-001_rev-C-Web.pdf. (Accessed January 8, 2018).
5. Cengiz E, Tamborlane WV. A tale of two compartments: interstitial versus blood glucose monitoring. *Diabetes Technol Ther* 2009;11:S11-6.
6. Dexcom. With Health Canada approval, *Dexcom G5 Mobile* CGM system is the first medical device in North America for making daily diabetes decisions without painful fingersticks. November 14, 2016. <https://www.dexcom.com/news/health-canada-dexcom-g5-mobile-approval>. (Accessed January 9, 2018).
7. Abbott. Abbott secures Health Canada license for *FreeStyle Libre* system for people with diabetes. June 29, 2017. <http://abbott.mediaroom.com/2017-06-29-Abbott-secures-Health-Canada-license-for-FreeStyle-R-Libre-system-for-people-with-diabetes>. (Accessed January 9, 2018).
8. FDA. FDA expands indication for continuous glucose monitoring system, first to replace fingerstick testing for diabetes treatment decisions. December 20, 2016. <https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm534056.htm>. (Accessed January 9, 2018).
9. FDA. FDA approves first continuous glucose monitoring system for adults not requiring blood sample calibration. September 27, 2017. <https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm577890.htm>. (Accessed January 9, 2018).
10. Rodbard D. Continuous glucose monitoring: a review of recent studies demonstrating improved glycemic outcomes. *Diabetes Technol Ther* 2017;19:S25-37.
11. Gomez AM, Umpierrez GE. Continuous glucose monitoring in insulin-treated patients in non-ICU settings. *J Diabetes Sci Technol* 2014;8:930-6.
12. Fonseca VA, Grunberger G, Anhalt H, et al. Continuous glucose monitoring: a consensus conference of the American Association of Clinical Endocrinologists and American College of Endocrinology. *Endocr Pract* 2016;22:1008-21.
13. Dexcom. Safety information. <https://www.dexcom.com/safety-information>. (Accessed January 9, 2018).
14. *Enlite* glucose sensor user guide. March 31, 2014. https://www.medtronicdiabetes.com/sites/default/files/library/download-library/user-guides/Mp6025676-2AF1_a_pdf.pdf. (Accessed January 9, 2018).
15. *Guardian* sensor (3) user guide. March 2017. <https://www.medtronicdiabetes.com/sites/default/files/library/download-library/user-guides/Guardian%20Sensor%203%20User%20Guide.pdf>. (Accessed January 9, 2018).
16. *MiniMed 530G* system user guide. October 2015. https://www.medtronicdiabetes.com/sites/default/files/library/download-library/user-guides/Mp6025813-012_b.pdf. (Accessed January 9, 2018).
17. *MiniMed 630G* system user guide. August 2016. https://www.medtronicdiabetes.com/sites/default/files/library/download-library/user-guides/MP6026157-011_b.pdf. (Accessed January 9, 2018).
18. *MiniMed 670G* system user guide. March 2017. <https://www.medtronicdiabetes.com/sites/default/files/library/download-library/user-guides/MiniMed%20670G%20System%20User%20Guide.pdf>. (Accessed January 9, 2018).
19. *Dexcom G4 Platinum* user manual. https://www.dexcom.com/sites/dexcom.com/files/user-guides/G4-PLATINUM-with-Share-US-ifu-Adult_1.pdf. (Accessed January 9, 2018).
20. *Dexcom G5 Mobile* user manual. <https://s3-us-west-2.amazonaws.com/dexcompdf/LBL013990-REV003-G5-Mobile-User-Guide-NA-Android-US.pdf>. (Accessed January 11, 2018).
21. Dexcom. Medicare announces criteria covering *Dexcom G5 Mobile* CGM for all people with diabetes on intensive insulin therapy. March 24, 2017. <https://www.dexcom.com/news/medicare-announces-criteria-covering-dexcom-g5-mobile-cgm-for-all-people-with-diabetes-on-intensive-insulin>. (Accessed January 12, 2018).
22. *FreeStyle Libre*. Medicare guide. https://www.freestylelibre.us/sites/all/themes/freestyle_libre/pdf/FreeStyle%20Libre%20-%20Medicare%20Guide.pdf. (Accessed January 12, 2018).
23. Rice MJ, Coursin DB. Continuous measurement of glucose: facts and challenges. *Anesthesiology* 2012;116:199-204.
24. ADA. Standards of medical care in diabetes – 2018. http://care.diabetesjournals.org/content/diacare/suppl/2017/12/08/41.Supplement_1.DC1/DC_41_S1_Combined.pdf. (Accessed January 16, 2018).

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25. FreeStyle. *FreeStyle Libre*. <https://myfreestyle.ca/en/products/libre>. (Accessed January 17, 2018).
26. Animas Vibe insulin pump and CGM system. Getting you up to speed: quick reference guide. http://animas.ca/sites/default/files/assets/pdf/support/Vibe_QRG_English_web.pdf. (Accessed January 18, 2018).
27. Dexcom G4 continuous glucose monitoring (CGM) sensor and transmitter quick start guide. http://animas.ca/sites/default/files/assets/pdf/support/Vibe-CGM-QuickStartGuide_English.pdf. (Accessed January 18, 2018).
28. Dexcom G5 Mobile continuous glucose monitoring system user guide. <https://s3-us-west-2.amazonaws.com/dexcompdf/OUS+Specific+PDFs/Canada+G5+User+Guides/LBL013495+Rev+004+AW%2C+G5+Mobile+UG+ENCA+mmol+Android+Web.pdf>. (Accessed January 18, 2018).
29. Medtronic. Customer support: continuous glucose monitoring and sensors. <https://www.medtronicdiabetes.ca/customer-support/cgm-sensors>. (Accessed January 18, 2018).

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February 2018 ~ Resource #340202

Comparison of Blood Glucose Meters

—Based on U.S. product information.—

Also see our *Continuous Glucose Monitoring FAQs* for information on those devices.

Meter ^b Contact Information	Drop size (mCL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>Accu-Chek Aviva</i> Roche 800-858-8072 www.accu-chek.com	0.6	5	yes palm, forearm, upper arm	20-600	<i>Accu-Chek Aviva Plus</i> test strips Until expiration on vial	3-volt lithium CR 2032	<i>Accu-Chek Softclix</i> lancing device	Large screen. 500-test memory Customizable alarms. Pre- and post- meal markers. Able to download. 7-, 14-, 30-, and 90-day averaging. Automatic shut off.
<i>Accu-Chek Compact Plus</i> Roche 800-858-8072 www.accu-chek.com	1.5	5	yes palm, upper arm, forearm, thigh, calf	10-600	<i>Accu-Chek Compact Plus</i> (preloaded drum with 17 strips) 90 days after inserting in meter	#2 AAA	<i>Accu-Chek Softclix Plus</i> lancing device	Lancet device can be used attached or detached from the blood glucose meter. Bright display. Able to download. 500-test memory. 7-, 14-, and 30-day averaging. Backlit. Automatic shut off.
<i>Accu-Chek Guide</i> Roche 800-858-8072 www.accu-chek.com	0.6	4	yes palm, upper arm	20-600	<i>Accu-Chek Guide</i> test strips Until expiration on vial	#2 3- volt lithium CR 2032	<i>Accu-Chek Fastclix</i> lancing device	Strip port light for use at night. Spill- resistant test strip packaging. Test strip allows placement of drop anywhere along end. Wireless, automatic download to results into smartphone automatically. Strip ejector. 720-test memory. 7-, 14-, 30-, and 90-day averaging. Backlit. Automatic shut off.

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Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>Accu-Chek Nano</i> Roche 800-858-8072 www.accu-chek.com	0.6	5	yes palm	20-600	<i>Accu-Chek Smart View</i> test strips Until expiration on vial	#2 3-volt lithium CR 2032	<i>Accu-Chek Fastclix</i> lancing device	Small meter. Pre- and post-meal markers. Able to download. 500-test memory. 7-, 14-, 30-, and 90-day averaging. Backlit. Automatic shut off.
<i>Advocate Redi-Code Plus Speaking</i> Pharma Supply Inc. 888-469-3579 www.advocatemeteters.com	1	5	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Advocate Redi-Code</i> test strips 90 days after opening vial	#2 AAA	<i>Advocate Red Dot</i> lancing device (in kit option)	Large screen. Able to download. Voice prompts and results spoken. English or Spanish versions available. Automatic shut off. 400-test memory. 7-, 14-, 28-, and 60-day averaging. Pre- and post-meal markers. Six reminder alarms.
<i>Align</i> iHealth 855-816-7705 www.ihealthlabs.com	0.7	5	yes palm, upper arm, forearm, thigh, calf	20-600	<i>iHealth</i> test strips 90 days after opening vial	#2 3-volt lithium CR 1620	<i>iHealth</i> lancing device	Very small; the size of a quarter. Attaches directly to mobile device; device screen serves as display. Log meds, exercise, and diet. Displays trend graphs. Can share readings with prescriber. App tracks strip expiration and quantity remaining. Coding required.
<i>Clever Choice HD</i> Simple Diagnostics 877-342-2385 www.simplediagnostics.com	0.7	5	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Clever Choice</i> test strips Until expiration on vial	#2 AAA	Included in some kits	Large screen. Able to download. Strip ejector. 500-test memory. 7-, 14-, 21-, 28-, 60-, 90-day averaging. Backlit. Automatic shut-off.

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Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>Clever Choice Pro Plus</i> Simple Diagnostics 877-342-2385 www.simplediagnosics.com	0.7	5	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Clever Choice Pro Plus</i> test strips Until expiration on vial	#2 AAA	None	Large screen. Backlit. 500-test memory. Automatic shut off. Able to download. 7-, 14-, 21-, 28-, 60-, 90-day averaging. Strip ejection button. Four alarms.
<i>Clever Choice Voice HD</i> Simple Diagnostics 877-342-2385 www.simplediagnosics.com	0.7	5	yes palm, forearm	20-600	<i>Clever Choice</i> and <i>Clever Choice MO</i> test strips Until expiration on vial	#2 AAA	Included in some kits	Large screen. Able to download. Voice prompts and results spoken in English or Spanish. Backlit. 500-test memory. 7-, 14-, 21-, 28-, 60-, 90- day averaging. Strip ejection button.
<i>Contour</i> Ascensia 800-348-8100 www.contournext.com/	0.6	5	Yes palm, forearm	10-600	<i>Contour</i> test strips 6 months after opening vial	#2 3- volt lithium CR 2032	Included in kits	Able to download. 2 modes - basic and advanced. 480-test memory. 7- day averaging. Meal markers with post-meal test alarm that reminds user to test at selected time post-meal. Works at cooler temperatures (as low as 41°F).
<i>Contour Next</i> Ascensia 800-348-8100 www.contournext.com/	0.6	5	yes palm	20-600	<i>Contour Next</i> test strips Until expiration on vial	#2 3- volt lithium CR 2032	Included in some kits	Simple prompts. Pre- and post-meal markers. Ability to reapply blood. Able to download. 800-test memory. 7-, 14-, 30-, and 90-day averaging. 14 languages. 1 reminder alarm. Able to add notes to result. Backlit.

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Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>Contour Next EZ</i> Ascensia 800-348-8100 www.contournext.com/	0.6	5	no	20-600	<i>Contour Next</i> test strips Until expiration on vial	#2 3- volt lithium CR 2032	<i>Microlet 2</i> lancing device	Ability to reapply blood. Able to download. Meal markers with post- meal test alarm that reminds user to test at selected time post-meal. 480- test memory. 7-, 14-, and 30-day averaging. Automatic shut-off.
<i>Contour Next Link</i> Ascensia 800-348-8100 www.contournext.com/	0.6	5	yes palm	20-600	<i>Contour Next</i> test strips Until expiration on vial	Recharge- able lithium battery	<i>Microlet 2</i> lancing device	Ability to reapply blood. Wirelessly transmits results to <i>MiniMed</i> <i>Paradigm Real-Time Revel</i> insulin pump. Large display. 1,000-test memory. 7- and 14-, and 30-day day averaging. Pre- and post-meal markers.
<i>Contour Next Link 2.4</i> Ascensia 800-348-8100 www.contournext.com/	0.6	5	yes palm	20-600	<i>Contour Next</i> test strips Until expiration on vial	Recharge- able lithium battery	<i>Microlet 2</i> lancing device	Ability to reapply blood. Wirelessly transmits results to MiniMed 630G and 670G. Large display. 1,000-test memory. 7-,14-, 30-, and 90-day averaging. Pre-and post-meal markers.
<i>Contour Next One</i> Ascensia 800-348-8100 www.contournext.com/	0.6	5	yes palm	20-600	<i>Contour Next</i> test strips Until expiration on vial	#2 3- volt lithium CR 2032	<i>Microlet 2</i> included in some kits	Wireless connectivity to mobile device to log activity, carbs, med changes, activities, and meal photos. Test strip port light up to indicate if result is within, below, or above target ranges. Ability to reapply blood. Pre- and post-meal markers.

More. . .

Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>Contour Next USB</i> Ascensia 800-348-8100 www.contournext.com/	0.6	5	yes palm	20-600	<i>Contour Next</i> test strips Until expiration on vial	Recharge- able lithium battery	<i>Microlet 2</i> lancing device	Able to download. Can log carb intake and insulin doses. Pre- and post-meal markers. Works at temperatures 41°F to 113°F. 2,000- test memory. 7-, 14-, 30-, and 90-day averaging.
<i>Contour USB</i> Ascensia 800-348-8100 www.contournext.com/	0.6	5	yes palm, forearm	20-600	<i>Contour</i> test strips 6 months after opening vial	Recharge- able lithium battery	<i>Microlet 2</i> lancing device	Able to download. Pre- and post- meal markers. Works at temperatures 41°F to 113°F. 2,000-test memory. 7-, 14-, 30-day averaging.
<i>CVS Health Advanced</i> AgaMatrix 800-895-2430 www.cvs.com	0.5	6	yes palm, forearm	20-600	<i>CVS Health</i> <i>Advanced</i> test strips 90 days after opening vial	#2 3- volt lithium CR 2032	<i>Aga- Matrix</i> lancing device	Large display. 1,865-test memory. 14-, 30-, and 90-day averaging. 7 reminder alarms. Backlit.
<i>EasyGluco</i> US Diagnostics 866-216-5308 www.usdiagnostics.net	1.5	9	yes palm, forearm, thigh, calf	20-600	<i>EasyGluco</i> test strips 3 months after opening vial	#2 3- volt lithium CR 2032	Included some kits	200-test memory. 7- to 90-day averaging. Coding required.
<i>EasyMax LTC</i> Oak Tree Health 866-994-3345 www.oaktree-health.com	0.6	5	yes palm, forearm	20-600	<i>EasyMax 15</i> test strips 6 months after opening vials	#2 AAA	no	Large display. Rubber protector. Able to download. Strip ejector. 480-test memory. Automatic shut off. Backlit.

More. . .

Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>EasyMax NG (Next Generation)</i> Oak Tree Health 866-994-3345 www.oaktree-health.com	0.6	5	yes palm, forearm	20-600	<i>EasyMax 15</i> test strips 6 months after opening vials	#2 AAA	no	Able to download. Rubber protector. Strip ejector. 480-test memory. Backlit.
<i>EasyMax V</i> Oak Tree Health 866-994-3345 www.oaktree-health.com	0.6	5	yes palm, forearm	20-600	<i>EasyMax</i> test strips 90 days after opening vial	#2 AAA	no	Large display. Talking meter in English or Spanish. 480-test memory. 7-, 14-, 30-, 60-, and 90-day averaging. Automatic shut off.
<i>EasyMax V²</i> Oak Tree Health 866-994-3345 www.oaktree-health.com	0.6	5	yes palm, forearm	20-600	<i>EasyMax</i> test strips 90 days after opening vial	#2 AAA	<i>Fortis Care</i> lancing device	Smaller. Talking meter in English or Spanish. Pre- and post-meal markers. 480-test memory. 7-, 14-, 30-, 60-, and 90-day averaging. Strip illumination port. Automatic shut off.
<i>Embrace</i> Omnis Health 877-979-5454 www.omnishealth.com	0.6	6	yes palm, forearm	20-600	<i>Embrace</i> test strips 90 days after opening vial	#2 AAA	Included in kits	Talking meter in English or Spanish. Test strip port easy to feel for low-vision patients. Rubber nonskid grips. Large screen. Able to download. 300-test memory. 7-, 14-, and 30-day averaging. Three programmable alarms.
<i>Embrace Evo</i> Omnis Health 877-979-5454 www.omnishealth.com	0.8	6	yes palm, forearm	20-600	<i>Embrace Evo</i> test strips 90 days after opening vial	3-volt lithium CR 2032	Yes	Large screen. Test strip port easy to feel for low-vision patients. Able to download. 300-test memory. 7-, 14-, and 30-day averaging.

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Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>Embrace Pro</i> Omnis Health 877-979-5454 www.omnishealth.com	0.5	5	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Embrace Pro</i> or <i>Victory</i> test strips Until expiration on vial	3-volt lithium CR 2032	Included in kits	Large screen. 500-test memory. Able to download. Test strip ejector.
<i>Fifty50 Glucose Meter 2.0</i> Fifty 50 Medical 800-746-7505 www.fifty50.com	0.5	5	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Fifty50 2.0</i> test strips Until expiration on vial	#2 3- volt lithium CR 2032	None	Large screen. Rubber nonskid grips. Easy-to-grip shape. Able to download. 250-test memory. Three programmable alarms. Pre- and post- meal markers and averaging.
<i>Fifty50 Glucose Meter 2.0 Sport</i> Fifty 50 Medical 800-746-7505 www.fifty50.com	0.5	5	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Fifty50 2.0</i> test strips Until expiration on vial	#2 3- volt lithium CR 2032	None	Compact meter. Able to download. 500-test memory. Three programmable alarms. Pre- and post- meal markers. 1-, 7-, 14-, 30-, and 90-day averaging. Backlit.
<i>Fora D10</i> Fora Care 888-307-8188 www.foracare.com	0.7	7	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Fora V10/V12/D10/D20</i> test strips 90 days after opening vial	#2 AAA	None	Able to download. 450-test memory. Also measures blood pressure and pulse. Automatic shut-off.

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Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>Fora D20</i> Fora Care 888-307-8188 www.foracare.com	0.7	7	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Fora V10/V12/D10/D20</i> test strips 90 days after opening vial	#4 AA or 6 volt adapter	None	Talking meter in English or Spanish. Large screen and font. Able to download. 480-test memory. 7-, 14-, 21-, 28-, 60-, and 90-day averaging. Also measures blood pressure and heart rate. Ketone warning.
<i>Fora D40</i> Fora Care 888-307-8188 www.foracare.com	0.5	5	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Fora D40/G31</i> test strips 90 days after opening vial	#4 AA or recharge- able lithium battery or + 6 volt adapter	None	Talking meter in English and Spanish. Wireless connectivity. Software features include analysis and trends. Pre- and post-meal markers. 864-test memory. 7-, 14-, 21-, 28-, 60-, and 90-day averaging. Also measures blood pressure and heart rate. Test strip ejector. Ketone warning.
<i>Fora G30a</i> Fora Care 888-307-8188 www.foracare.com	0.5	5	Yes palm, upper arm, forearm	20-600	<i>Fora V30/G30/Premium V10</i> test strips 90 days after opening vial	3-volt lithium CR 2032	None	Able to download. Pre- and post-meal markers. 450-test memory. Test strip ejector. 7-, 14-, 21-, 28-, 60-, 90-day averaging. Four reminder alarms. Ketone warning.
<i>Fora Premium V10</i> Fora Care 888-307-8188 www.foracare.com	0.5	5	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Fora V30/G30/Premium V10</i> test strips 90 days after opening vial	#2 AAA	None	Voice prompts and results in English or Spanish. Able to download. 450-test memory. Four reminder alarms. Test strip ejector. 7-, 14-, 21-, 28-, 60-, 90-day averaging. Ketone warning.

More. . .

Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>Fora Premium V12</i> Fora Care 888-307-8188 www.foracare.com	0.7	7	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Fora V10/V12/D10/D20</i> test strips 90 days after opening vial	#2 AAA	None	Voice prompts and results spoken (English or Spanish), with repeat function. Able to download. Pre- and post-meal markers. 450-test memory. Four reminder alarms. Test strip ejector. 7-, 14-, 21-, 28-, 60-, 90-day averaging. Backlit. Ketone warning.
<i>Fora Test and Go (TN'G)</i> Fora Care 888-307-8188 www.foracare.com	0.5	5	no	20-600	<i>Fora TN'G/TN'G Voice</i> test strip 90 days after opening vial	Lithium rechargeable battery	None	Wireless connectivity to smartphone. Pre- and post-meal testing modes. 450-test memory. 7-, 14-, 21-, 28-, 60-, and 90-day averaging. Four reminder alarms. USB rechargeable. Backlit.
<i>Fora Test and Go Voice</i> Fora Care 888-307-8188 www.foracare.com	0.5	5	yes palm, upper arm, forearm	20-600	<i>Fora TN'G/TN'G Voice</i> test strip 90 days after opening vial	#2 AAA	None	Talking meter. Wireless connectivity to smartphone. Lighted test strip port. Pre- and post-meal markers. 450-test memory. 7-, 14-, 21-, 28-, 60-, and 90-day averaging. Four reminder alarms. Strip ejector. Backlit. Ketone warning. Automatic shut-off.
<i>Fora V10</i> Fora Care 888-307-8188 www.foracare.com	0.7	7	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Fora V10/V12/D10/D20</i> test strips 90 days after opening vial	#2 AAA	None	Talking meter (English and Spanish). Easy one-button operation. Able to download. 450-test memory. 7-, 14-, 21-, 28, 60-, and 90-day averaging. Ketone warning. Automatic shut off.

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Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>Fora V30a</i> Fora Care 888-307-8188 www.foracare.com	0.5	5	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Fora V30/G30/ Premium V10</i> test strips 90 days after opening vial	#2 AAA	None	Voice prompts and results spoken in English. Able to download. Pre- and post-meal markers. 450-test memory. Four reminder alarms. Test strip ejector. 7-, 14-, 21-, 28-, 60-, 90-day averaging. Ketone warning.
<i>FreeStyle Freedom Lite</i> Abbott 888-522-5226 www.myfreestyle.com	0.3	5	yes palm, upper arm	20-500	<i>FreeStyle Lite</i> test strips Until expiration on vial	3-volt lithium CR 2032	<i>FreeStyle Lancing Device II</i>	Large display. Easy to hold. Able to download. 400-test memory. 7-, 14-, 30-day averaging. Four reminder alarms. Able to reapply blood to test strip for up to 60 seconds. Accurate at temperatures 40°F to 104°F. Automatic shut-off.
<i>FreeStyle InsuLinx</i> Abbott 888-522-5226 www.myfreestyle.com	0.3	5	no	20-500	<i>FreeStyle InsuLinx</i> test strips Until expiration on vial	#2 replace- able 3- volt lithium CR 2032	<i>FreeStyle Lancing Device II</i>	Touchscreen. Designed for insulin users. Electronic logbook to track glucose, insulin doses. Able to download. Lighted strip port. 165-day memory. Pre- and post-meal markers. Reminder alarms. Able to reapply blood to test strip for up to 60 seconds. Accurate at temperatures 40°F to 104°F. Backlit. Automatic shut-off.

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Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>FreeStyle Lite</i> Abbott 888-522-5226 www.myfreestyle.com	0.3	5	yes palm, upper arm	20-500	<i>FreeStyle Lite</i> test strips Until expiration on vial	3-volt lithium CR 2032	<i>FreeStyle Lancing Device II</i>	Able to download. Lighted strip port. 400-test memory. 7-, 14-, and 30-day averaging. Four programmable alarms. Able to reapply blood to test strip for up to 60 seconds. Accurate at temperatures 40°F to 104°F. Backlit. Automatic shut-off.
<i>FreeStyle Precision Neo</i> Abbott 888-522-5226 www.myfreestyle.com	0.6	5	no	20-500	<i>FreeStyle Precision Neo</i> test strips Until expiration on vial	#2 3- volt lithium CR 2032	<i>FreeStyle Lancing device II</i>	Large e-Ink screen. 1000-event memory. OTC, individually wrapped test strips. Able to download, or upload to cloud. Automatic shut-off.
<i>Genesis Health Technologies (GHT)</i> Genesis Health Technologies 888-263-0003 www.genesishealthtechnologies.com	0.7	5	no	20-600	GHT blood test strips Until expiration on vial	Recharge- able battery	Included in starter kit	Automatically sends results to patient's online account, which can be shared with caregivers. Can log nutrition information. Transmits values through Verizon Wireless. 450-test memory. Color screen. Able to send text message alert to mobile phone.
<i>Glucocard 01</i> Arkray 800-818-8877 www.arkrayusa.com	0.3	7	yes palm	20-600	<i>Glucocard 01 Sensor Plus</i> test strips 3 months after opening vial	3-volt lithium CR 2032	Included in some kits	Able to download. 360-test memory. 14- or 30-day averaging. Not covered by insurance companies.

More. . .

Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>Glucocard Expression</i> Arkray 800-818-8877 www.arkrayusa.com	0.8	6	yes palm, forearm	20-600	<i>Glucocard Expression</i> test strips 3 months after opening vial	#2 AAA	28-gauge general purpose lancet included in the full kit	Voice prompts and results spoken (English or Spanish). Able to download. Oversized picture icons. Large buttons. 300-test memory. 7-, 14-, and 30-day averaging. Three reminder alarms.
<i>Glucocard Shine</i> Arkray 800-818-8877 www.arkrayusa.com	0.5	5	yes palm, forearm, thigh, calf	20-600	<i>Glucocard Shine</i> test strips Until expiration on vial	#2 3- volt lithium CR 2032	May come with a lancet	Small meter with large display. Able to download. 500-test memory. Expired test strip indicator. Post- meal markers. 1-, 7-, 14-, 30-, 90-day averaging. Backlit.
<i>Glucocard Shine XL</i> Arkray 800-818-8877 www.arkrayusa.com	0.5	5	yes palm, forearm, thigh, calf	20-600	<i>Glucocard Shine</i> test strips Until expiration on vial.	#2 3- volt lithium CR 2032	Yes	Large display. Easy to hold. Able to download. 250-test memory. 1-, 7-, 14-, 30-, 90-day averaging. Backlit.
<i>Glucocard Vital</i> Arkray 800-818-8877 www.arkrayusa.com	0.5	7	yes palm	20-600	<i>Glucocard Vital</i> test strips 3 months after opening vial	3-volt lithium CR 2032	28-gauge general purpose lancet included in the full kit	Able to download. 250-test memory. 14- and 30-day averaging.

More. . .

Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>Infinity</i> US Diagnostics 866-216-5308 www.usdiagnostics.net	0.5	5	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Infinity</i> test strips 3 months after opening vial	#2 3- volt lithium CR 2032	Included in starter kit	Able to download. 365-test memory. 7- to 90-day averaging. Test strip ejector. Five reminder alarms.
<i>Jazz Wireless 2</i> AgaMatrix 866-906-4197 www.agamatrix.com	0.5	5	no	20-600	<i>Jazz</i> test strips 90 days after opening vial	#2 3- volt lithium CR 2032	<i>Aga- Matrix</i> lancing device	Small meter. Wireless, automatic download to smartphone. Can track glucose, insulin dose, carb intake, and weight. Can share data with caregivers.
<i>My GlucoHealth Wireless</i> Entra Health 877-458-2646 https://entrahealth.com/	0.3	3	yes palm, upper arm, forearm, thigh, calf	10-600	<i>My GlucoHealth</i> test strips 3 months after opening vial	#2 AAA	<i>My Gluco- Health</i> lancing device	Upload results to the MyGlucoHealth portal via UCB or Bluetooth. Smartphone app available. Results can be shared with caregivers. 250- test memory. Five reminder alarms. Test strip ejector. Automatic shut- off.
<i>NovaMax Link</i> Nova 800-681-7390 www.novacares.com	0.3	5	yes palm, forearm	20-600	<i>NovaMax</i> test strips 3 months after opening vial	3-volt lithium CR 2450	<i>Nova Sureflex</i> lancing device included in kit	Wirelessly communicates with <i>Paradigm</i> Model 512, 712, or higher insulin infusion pumps. 400-test memory. 1-, 7-, 14-, and 30-day averaging. Automatic shut-off.

More. . .

Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>NovaMax Plus</i> Nova 800-681-7390 www.novacares.com	0.3 (glu) 0.8 (ket)	5 (glu) 10 (ket)	yes (glu only) palm, forearm	20-600	<i>NovaMax Glucose</i> test strips: 6 months after opening vial <i>NovaMax Plus</i> <i>Ketone</i> test strips: Until expiration date on vial	3-volt lithium CR 2450	<i>Nova</i> <i>Sureflex</i> lancing device included in starter kit	Able to download. 400-test memory. 1-, 7-, 14-, and 30-day averaging. Able to measure ketones with a different strip. Ketone warning when glucose 250 mg/dL or higher.
<i>One Drop</i> AgaMatrix 800-437-1474 onedrop.today	0.5	5	no	20-600	<i>One Drop</i> test strips 180 days after first opening vial	#2 3- volt lithium CR 2032	<i>One drop</i> lancing device	Wireless automatic download to mobile device. Track glucose, meds, food, exercise. Set goals and track progress. Can share data with caregivers. Automatic shut-off. Optional test strip subscription and access to diabetes educator.
<i>OneTouch Ultra2</i> LifeScan 800-227-8862 www.onetouch.com	1	5	yes palm, forearm	20-600	<i>OneTouch Ultra</i> <i>Blue</i> test strips or compatible third- party test strips (<i>UniStrip1</i> , <i>GenStrip50</i>) 6 months after opening vial (see labeling for third- party strips)	#2 3- volt lithium CR 2032	<i>OneTouch</i> <i>Delica</i> lancing device	Large screen. Able to download. 500-test memory. Meter can be set for English or Spanish. Before- and after-meal averages for 7-, 14-, and 30-days. Accurate at 43°F to 111°F. Automatic shut-off. Backlit. Coding required.

More. . .

Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>OneTouch UltraMini</i> LifeScan 800-227-8862 www.onetouch.com	1	5	yes palm, forearm	20-600	<i>OneTouch Ultra Blue</i> test strips or compatible third-party test strips (<i>UniStrip1</i> , <i>GenStrip50</i>) 6 months after opening vial (see labeling for third-party strips)	3-volt lithium CR 2032	<i>OneTouch Delica</i> lancing device	Small meter. Available with or without a data port. 500-test memory. Accurate at 43°F to 111°F. Automatic shut-off. Coding required.
<i>OneTouch Verio</i> LifeScan 800-227-8862 www.onetouch.com	0.4	5	no	20-600	<i>One Touch Verio</i> test strips 6 months after opening	#2 AAA	<i>One Touch Delica</i> lancing device	Three color indicator range to tell user if result is low, in range, or high. Side-fill test strip. Able to download. 500-test memory. 7-, 14-, 30-, 90-day averaging. Backlit.
<i>One Touch Verio Flex</i> LifeScan 800-227-8862 www.onetouch.com	0.4	5	no	20-600	<i>One Touch Verio</i> test strips 6 months after opening	3-volt lithium CR 2032	<i>OneTouch Delica</i> lancing device	Small meter with large display. 500-test memory. Three color indicator range to tell user if result is low, in range, or high. Side-fill test strip. Downloads wirelessly via using USB port.
<i>OneTouch Verio IQ</i> LifeScan 800-227-8862 www.onetouch.com	0.4	5	no	20-600	<i>OneTouch Verio</i> test strips 6 months after opening vial	Rechargeable battery	<i>OneTouch Delica</i> lancing device	Color-coded messages alert user to repeated highs or lows. Side-fill test strip. Large color screen. Pre- and post-meal markers. Lighted test strip port. 750-test memory. 7-, 14-, 30-, and 90-day averaging.

More. . .

Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>Presto</i> AgaMatrix 866-906-4197 www.agamatrix.com	0.5	6	yes palm, forearm	20-600	<i>Presto</i> test strips	#2 3- volt lithium CR 2032	None	Able to download to PC. App for mobile devices. Can track glucose, insulin dose, carb intake, and weight. Can share data with caregivers. 300-test memory. 14-, 30-, and 90-day averaging and trend graphs. Rubber grips. Six reminder alarms. Backlit.
<i>Prodigy Autocode</i> Prodigy Diabetes Care 800-243-2636 www.prodigymeter.com	0.7	7	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Prodigy No Coding</i> test strips 90 days after opening vial	#2 AAA	<i>Prodigy</i> lancing device included in some kits	Voice prompts and results spoken (English, Spanish, French, or Arabic). Able to download. 450-test memory. 7-, 14-, 21-, 28-day averaging.
<i>Prodigy Pocket</i> Prodigy Diabetes Care 800-243-2636 www.prodigymeter.com	0.7	7	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Prodigy No Coding</i> test strips 90 days after opening vial	3-volt lithium CR 2032	<i>Prodigy</i> lancing device included in some kits	Small. Able to download. 120-test memory. 7-, 14-, and 28-day averaging. Available in several colors.
<i>Prodigy Voice</i> Prodigy Diabetes Care 800-243-2636 www.prodigymeter.com	0.7	7	yes palm, upper arm, forearm, thigh, calf	20-600	<i>Prodigy No Coding</i> test strips 90 days after opening vial	#2 AAA	<i>Prodigy</i> lancing device included in some kits	Voice meter talks user through setup, testing, and memory recall. Able to download. 450-test memory. 7-, 14-, 21-, 30-, 60-, and 90-day averaging. Repeat button replays last message spoken. Tactile features allow user to locate buttons. Automatic shut-off.

More. . .

Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>ReliOn Confirm</i> Walmart 800-631-0076 www.relion.com Available at Walmart only.	0.3	7	yes palm	20-600	<i>ReliOn Confirm/Micro</i> or <i>Confirm/</i> <i>Micro Plus</i> test strips 3 months after opening vial	3-volt lithium CR 2032	<i>ReliOn</i> lancing device	Thin meter. 360-test memory. 14- and 30-day averaging. Able to download. Two colors. Automatic shut-off.
<i>ReliOn Micro</i> Walmart 800-631-0076 www.relion.com Available at Walmart only.	0.3	7	yes palm	20-600	<i>ReliOn Confirm/</i> <i>Micro</i> or <i>ReliOn</i> <i>Confirm/Micro</i> <i>Plus</i> test strips 3 months after opening vial	3-volt lithium CR 2032	<i>ReliOn</i> lancing device	50-test memory. 7-, 14-, and 30-day averaging. Able to download. Pre- and post-meal markers. Automatic shut-off.
<i>ReliOn Prime</i> Walmart 800-631-0076 www.relion.com Available at Walmart only.	0.5	7	yes palm	20-600	<i>ReliOn Prime</i> test strips 3 months after opening vial	3-volt lithium CR 2032	None	Able to download. 250-test memory. 14- and 30-day averaging. Able to download. Automatic shut-off.
<i>Rightest GM100</i> Bionime 888-481-8485 www.bionimeusa.com	1.4	8	yes palm, forearm	20-600	<i>Rightest GM100</i> test strips Until expiration on vial	3-volt lithium CR 2032	Some kits include a <i>GD 500</i> lancing device	Small meter. Large, molded test strips. Large screen. One-button operation. 150-test memory. 7-, 14-, 30-, and 90-day averaging. Automatic shut-off. Backlit. Color skins available.

More. . .

Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>Rightest GM300</i> Bionime 888-481-8485 www.bionimeusa.com	1.4	8	yes palm, forearm	20-600	<i>Rightest GM300</i> test strips Until expiration on vial	#2 AAA	Some kits include a <i>GD 500</i> lancing device	Able to download. Large, molded test strips. Large screen. 300-test memory. 7-, 14-, and 30-day averaging. Automatic shut-off. Backlit. Color skins available. Coding required.
<i>Rightest GM550</i> Bionime 888-481-8485 www.bionimeusa.com	1	5	yes forearm, thigh	20-600	<i>Rightest GM550</i> test strips Until expiration on vial	#2 3- volt lithium CR 2032	Some kits include a <i>GD 500</i> lancing device	Able to download. Large, molded test strips. Large screen. 500-test memory. 7-, 14-, 30-, and 90-day averaging. Backlit. Color skins available.
<i>Sidekick</i> Trividia Health 800-803-6025 www.trividiahealth.com	1	10	yes forearm	20-600	<i>Sidekick</i> test strips (provided with meter) 120 days after opening vial.	Not replace- able	May include lancet	Disposable, portable meter. 50-test memory. Automatic shut-off. Available at Walmart under the <i>ReliOn</i> name.
<i>Smart Gluco-Monitoring System</i> iHealth 855-816-7705 www.ihealthlabs.com	0.7	5	yes palm, upper arm, forearm, thigh, calf	20-600	<i>iHealth</i> test strips 90 days after opening vial	Recharge- able lithium battery	<i>iHealth</i> lancing device	Wireless connection to smartphone. Logs food and exercise. Color-coded summaries show how results fit within patient-specific goals. Share cloud data with caregivers. Test strip ejector. Coding required.

More. . .

Meter ^b Contact Information	Drop size (mCL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>Telcare BGM</i> Biotelemetry, Inc. 888-666-4530 www.telcare.com	0.8	5	yes palm	19-600	<i>Telcare</i> test strips 180 days after opening vial	Recharge- able battery	<i>Telecare</i> lancing device	Wirelessly sends results to cloud (Mytelecare). Able to view results on smartphone. 7-, 14-, 30-, 90-day averaging.
<i>TRUE Metrix</i> Trividia Health 800-803-6025 www.trividiahealth.com	0.5	4	yes forearm	20-600	<i>TRUE Metrix</i> test strip 4 months after opening vial	3-volt lithium CR 2032	May be included in some kits	Large display. Event tags for pre- /post-meal, exercise, illness, meds. Able to download. 500-test memory. 7-, 14-, 30-day averaging. Test strip ejector. Four reminder alarms. Automatic shut-off.
<i>TRUE Metrix Air</i> Trividia Health 800-803-6025 www.trividiahealth.com	0.5	4	yes forearm	20-600	<i>TRUE Metrix</i> test strip 4 months after opening vial	3-volt lithium CR 2032	May be included in some kits	Large display. Event tags for pre- /post-meal, exercise, illness, meds. Wireless connectivity to mobile device. 1000-test memory. 7-, 14-, 30-, 60-, 90-day averaging. Test strip ejector. Four reminder alarms. Automatic shut-off.
<i>TRUE Metrix Go</i> Trividia Health 800-803-6025 www.trividiahealth.com	0.5	4	no	20-600	<i>TRUE Metrix</i> test strip 4 months after opening vial	3-volt lithium CR 2032	Includes mini lancing device	Portable. Attaches to test strip vial and fits into a “koozie” that also holds mini lancing device. Able to download. 500-test memory. 7-, 14-, 30-day averaging. Automatic shut- off.

More. . .

Meter ^b Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing? ^a	Range (mg/dL)	Strip and Strip expiration	Battery	Lancing Device (packaged with meter)	Features
<i>TRUE Track</i> Trividia Health 800-803-6025 www.trividiahealth.com	1	10	yes forearm	20-600	<i>TRUE Track</i> test strip 4 months after opening vial	3-volt lithium CR 2032	May be included in some kits.	Large display. Basic meter. 365-test memory. 14- and 30-day morning averages. Automatic shut-off. Coding required.

- a. Alternate site testing should not be used during times when blood glucose is changing rapidly.¹
- b. High altitude, temperature extremes, and high humidity cause unpredictable effects on glucose results. Check the meter manual and test strip package insert for more information.¹

Users of this resource are cautioned to use their own professional judgment and consult any other necessary or appropriate sources prior to making clinical judgments based on the content of this document. Our editors have researched the information with input from experts, government agencies, and national organizations. Information and internet links in this article were current as of the date of publication.

More. . .

Project Leader in preparation of this clinical resource (340202): Melanie Cupp, Pharm.D., BCPS

References

1. FDA. Blood glucose monitoring devices. Last updated December 22, 2016. <https://www.fda.gov/medicaldevices/productsandmedicalprocedures/invitrodiagnostics/glucosetestingdevices/default.htm>. (Accessed January 16, 2018).

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February 2018 ~ Resource #340202

Lancets and Lancing Devices

(Products available in the U.S.)

Lancets

Lancet	Manufacturer	Features
<i>Accu-Chek Fastclix Lancet Drum</i>	Roche 800-858-8072 www.accu-chek.com	30G. A preloaded drum of six lancets.
<i>Accu-Chek Softclix Lancets</i>	Roche 800-858-8072 www.accu-chek.com	28G. For use with the <i>Accu-Chek Softclix</i> lancet devices.
<i>Accu-Chek SoftTouch Lancets</i>	Roche 800-858-8072 www.accu-chek.com	28 G. Fits most lancet devices.
<i>AgaMatrix Lancets</i>	AgaMatrix 866-906-4197 www.agamatrix.com	33 G. Consider for use with meters that require a small sample (e.g., 0.5 mL).
<i>Advocate Twist Top Lancets</i>	Pharma Supply 888-469-3579 www.advocatemeteters.com	30G. Fits most lancet devices.
<i>Advocate Pull Top Lancets</i>	Pharma Supply 888-469-3579 www.advocatemeteters.com	30G. Fits most lancet devices.
<i>BD Ultra-Fine II Lancets</i>	Becton, Dickinson and Company 201-847-6800 www.bd.com	30G. Fits most lancet devices.
<i>BD Ultra-Fine 33 G Lancets</i>	Becton, Dickinson and Company 201-847-6800 www.bd.com	33G. Fits most lancet devices.

More . . .

Lancet	Manufacturer	Features
<i>Comfort Thins Lancets</i>	Stat Medical Devices 305-945-0011 www.statmedicaldevices.com	28G, 29G, 30G, 33G (twist-off and pull-off). Fits most lancing devices.
<i>EZ-Lets Lancets</i>	AmbiMedInc 831-475-1765 www.ambimedinc.com	21G, 26G, 28G, 30G. Fits most lancet devices.
<i>FreeStyle Lancets</i>	Abbott 888-522-5226 www.myfreestyle.com	28G. For use with <i>Freestyle Lancing Device</i> and <i>Freestyle Lancing Device II</i> .
<i>Microlet Lancets</i>	Ascensia 800-348-8100 www.contournext.com/	28 G. A variety of colors. Silicone coating for comfortable testing. For use with <i>Microlet 2</i> and <i>Microlet Next</i> lancing devices.
<i>MyGlucoHealth Sofilance Lancets</i>	Entra Health 877-458-2646 https://entrahealth.com/	30G.
<i>Nova Sureflex Lancets</i>	Nova 800-681-7390 www.novacares.com	33G. Designed for use with <i>Nova Sureflex Lancing</i> device.
<i>OneTouch Delica Lancets</i>	LifeScan 800-227-8862 www.onetouch.com	30 G and 33G. Designed for use with <i>One Touch Delica</i> lancing device.
<i>OneTouch UltraSoft Lancets</i>	LifeScan 800-227-8862 www.onetouch.com	28G. Protective cap snaps over needle for disposal. Compatible with <i>One Touch Penlet Plus Adjustable Blood Sampler</i> .
<i>Pharmacist Choice Ultra Thin Lancets</i>	Simple Diagnostics 877-342-2385 www.simplediagnosics.com	28 G (pull top), 30, 31, 33 G (twist top). Fits most lancing devices.
<i>Prodigy Twist Top Lancets</i>	Prodigy Diabetes Care. 800-243-2636 www.prodigymeter.com	28G. Fits most lancing devices.
<i>Relion Lancets</i>	Wal-Mart 855-776-0662 www.walmart.com	30 G (<i>Ultra-Thin</i>), 33 G (<i>Micro-Thin</i>). Fits most lancing devices.

More. . .

Lancet	Manufacturer	Features
<i>True Plus Lancets</i>	Trividia Health 800-803-6025 www.trividiahealth.com	26, 28, 30, 31, 33G. Fits most lancing devices.
<i>Unilet ComforTouch Alternate Site Lancets</i>	Owen Mumford 770-977-2226 www.owenmumford.com	26G. Fits most lancing devices.
<i>Unilet ComforTouch Super Thin Lancets</i>	Owen Mumford 770-977-2226 www.owenmumford.com	30G. For use with most lancing devices.
<i>Unilet ComforTouch Thin Lancets</i>	Owen Mumford 770-977-2226 www.owenmumford.com	23G. Fits most lancing devices.
<i>Unilet ComforTouch Ultra Thin Lancets</i>	Owen Mumford 770-977-2226 www.owenmumford.com	28G. Fits most lancing devices.
<i>Unilet Micro-Thin Lancets</i>	Owen Mumford 770-977-2226 www.owenmumford.com	33G. Fits most lancing devices.
<i>Unilet Super-Thin Lancets</i>	Owen Mumford 770-977-2226 www.owenmumford.com	30G. Fits most lancing devices.
<i>Unilet Ultra-Thin Lancets</i>	Owen Mumford 770-977-2226 www.owenmumford.com	28G. Fits most lancing devices.
<i>US Diagnostics Lancets</i>	US Diagnostics 866-216-5308 www.usdiagnostics.net	30G. Fits most lancing devices.

—Continue to the next section for a list of Lancing Devices—

More. . .

Lancing Devices

Device	Manufacturer	Features
<i>Accu-Chek FastClix</i> Lancet Device	Roche 800-858-8072 www.accu-chek.com	Eleven depth settings. Uses the <i>FastClix</i> preloaded drum of six lancets. Lancet counter shows the number of remaining lancets. Alternate site testing requires gray cap, available through customer service.
<i>Accu-Chek Softclix</i> Lancet Device	Roche 800-858-8072 www.accu-chek.com	Eleven depth settings. Linear track design minimizes painful side-to-side motion. Uses <i>Accu-Chek Softclix</i> lancets. Includes clear cap for alternate site testing.
<i>Accu-Chek Softclix Plus</i> Lancet Device	Roche 800-858-8072 www.accu-chek.com	Attaches to <i>Accu-Chek Compact Plus</i> meter. Eleven depth settings. Uses <i>Accu-Chek Softclix</i> lancets. Includes clear cap for alternate site testing.
<i>AgaMatrix</i> Lancing Device	AgaMatrix 866-906-4197 www.agamatrix.com	Eight depth settings. Uses standard round-barrel lancets.
<i>Advocate Red Dot</i> Lancing Device	Pharma Supply Inc. 888-469-3579 www.advocatemeteters.com	Safety switch. Six depth settings. Able to perform alternate site testing. Compatible with all <i>Advocate</i> lancets.
<i>Auto-Lancet Mini</i> Lancing Device	AmbiMedInc 831-475-1765 www.ambimedinc.com	Adjustable-tip. Five depth settings. Not for alternate site testing unless used with <i>EZ-Vac</i> . Works with most lancets.
<i>Autolet Advanced</i> Lancing Device	Owen Mumford 770-977-2226 www.owenmumford.com	Nine depth settings. Raised pressure points on end of device help prevent pain messages from being received by brain. Works with most lancets.
<i>Fora</i> Lancing Device	Fora Care 888-307-8188 www.foracare.com	Five depth settings. Clear cap for alternate site testing. Safety lancet ejector.
<i>FreeStyle</i> Lancing Device II	Abbott 888-522-5226 www.myfreestyle.com	Adjustable depth settings. Gentle lancet release.
<i>Genteel</i> Lancing Device	Genteel 844-436-8335 www.mygenteel.com	Uses vacuum, vibration, and depth control to draw blood drop while avoiding nerves.
<i>GD500</i> Lancing device	Bionime 888-481-8485 www.bionimeusa.com	Seven depth settings. Safety switch. Lancet ejector. Compatible with most lancets. Allows alternate site testing (palm, forearm).

More. . .

Device	Manufacturer	Features
<i>Microlet Next</i> Lancing Device	Ascensia 800-348-8100 www.contournext.com/	Locking end-cap and lancet ejector helps prevent accidental lancing with no need to place fingers near lancet. Five depth settings. Uses <i>Microlet</i> lancets.
<i>Microlet 2</i> Lancing Device	Ascensia 800-348-8100 www.contournext.com/	Easy to grip. Large buttons. Adjustable depth setting. Requires clear end cap for alternate site testing (not included). Works with most lancets.
<i>MyGlucoHealth</i> Lancing Device	Entra Health 877-458-2646 https://entrahealth.com/	Adjustable depth setting.
<i>Nova Sureflex</i> Lancing Device	Nova 800-681-7390 www.novacares.com	Five penetration depth settings and a force adjustment feature. Includes clear alternate site end cap for testing on the forearm and palm.
<i>OneTouch Delica</i> Lancing Device	LifeScan 800-227-8862 www.onetouch.com	Seven depth settings. Uses <i>One Touch Delica</i> lancets. Less vibration for smoother lancing. Ejector.
<i>Prodigy</i> Lancing Device	Prodigy Diabetes Care 800-243-2636 www.prodigymeter.com	Five depth settings. For use with twist top lancets.
<i>ReliaMed Adjustable</i> Lancing Device	Cardinal Health 800-860-8027 www.inmed.com	Six depth settings. Works with most lancets. Includes clear cap for alternate site testing.
<i>ReliOn</i> Lancing Device	Wal-Mart 855-776-0662 www.walmart.com	Five depth settings. Works with most lancets. Includes clear cap for alternate site testing.
<i>Simple Diagnostics</i> Lancing Device	Simple Diagnostics 877-342-2385 www.simplediagnosics.com	Five depth settings. Use with any universal lancets. Alternate site testing.
<i>STAT Lite</i> Lancing Device	Stat Medical Devices 305-945-0011 www.statmedicaldevices.com	Small (less than 3.5 inches). Five depth settings. Alternate site testing cap. Works with most lancets.
<i>STAT Trio</i> Lancing Device	Stat Medical Devices 305-945-0011 www.statmedicaldevices.com	Five depth settings. Alternate site testing cap. Works with most lancets.

More. . .

Device	Manufacturer	Features
STAT Ultimate Lancing Device	Stat Medical Devices 305-945-0011 www.statmedicaldevices.com	Small (less than 3.5 inches). Eight depth settings. Alternate site testing cap. Works with most lancets.
TRUEdraw Lancing Device	Trividia Health 800-803-6025 www.trividiahealth.com	Works with most lancets. Barrel pulls off for lancet disposal.
US Diagnostics Lancing Device	US Diagnostics 866-216-5308 www.usdiagnostics.net	Small, pen-like. Five depth settings. Works with most lancets. Alternate site testing.

- G=gauge
- Information in chart is current as of January 2018.
- Chart may not be all-inclusive.

Users of this resource are cautioned to use their own professional judgment and consult any other necessary or appropriate sources prior to making clinical judgments based on the content of this document. Our editors have researched the information with input from experts, government agencies, and national organizations. Information and internet links in this article were current as of the date of publication.

More. . .

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