

Blood Glucose Meters

—Based on U.S. product information—

Meter	Contact Information	Drop size (mCL)	Test time (sec)	Alternate site testing?*	Range (mg/dL)	Strip and Strip expiration	Coding needed?	Battery	Features
<i>Accu-Chek Active</i>	Roche 800-858-8072 www.accu-chek.com	1	5	yes	10-600	<i>Accu-Chek Active</i> test strips Until expiration on vial	yes	3-volt lithium CR 2032	Able to download. 200-test memory. 7- and 14-day averaging.
<i>Accu-Chek Advantage</i> Monitor no longer being manufactured. Strips still available.	Roche 800-858-8072 www.accu-chek.com	4	26	no	10-600	<i>Accu-Chek Comfort Curve</i> test strips Until expiration on vial	yes	3-volt lithium CR 2032	Able to download. 480-test memory and 7-, 14- and 30-day averaging. Second blood application to strip within 15 seconds allowed. Rubber grips for handling ease.
<i>Accu-Chek Aviva</i>	Roche 800-858-8072 www.accu-chek.com	0.6	5	yes	10-600	<i>Accu-Chek Aviva</i> test strips Until expiration on vial	yes	3-volt lithium CR 2032	Able to download. 500-test memory. 7-, 14-, and 30-day averaging. Rubber grips for handling ease.
<i>Accu-Chek Compact</i> Monitor no longer being manufactured. Strips still available.	Roche 800-858-8072 www.accu-chek.com	1.5	8	yes	10-600	<i>Accu-Chek Compact System</i> (preloaded drum with 17 strips) 90 days after inserting in meter	no	#2 AAA	Able to download. 100-test memory with 7-day averaging. Second blood application to strip within 15 seconds allowed.

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<i>Accu-Chek Compact Plus</i>	Roche 800-858-8072 www.accu-chek.com	1.5	5	yes	10-600	<i>Accu-Chek Compact System</i> (preloaded drum with 17 strips) 90 days after inserting in meter	no	#2 AAA	Able to download. 500-test memory with 7-, 14-, and 30-day averaging. Lancet device can be used attached or detached from the blood glucose meter.
<i>Accu-Chek Complete</i> Monitor no longer being manufactured. Strips still available.	Roche Roche 800-858-8072 www.accu-chek.com	4	26	no	10-600	<i>Accu-Chek Comfort Curve</i> test strips Until expiration on vial	yes	#2 AAA	Able to download. 1,000-test memory. Able to store information on blood sugar, insulin doses, carbohydrates, exercise, event markers, ketones, and HbA1c results. Second blood application to strip within 15 seconds allowed.
<i>Accu-Chek Voicemate</i> Monitor no longer being manufactured. Strips still available.	Roche 800-858-8072 www.accu-chek.com	4	26	no	10-600	<i>Accu-Chek Comfort Curve</i> test strips Until expiration on vial	yes	9-volt and #2 3-volt lithium CR 2450	Voice prompts guide visually impaired. 100-test memory. Insulin vial reader. Second blood application to strip within 15 seconds allowed.
<i>Advance Intuition</i>	Arkray 800-818-8877 www.arkrayusa.com	3	10	no	30-550	<i>Advance Intuition</i> test strips 90 days after opening	yes	3-volt lithium CR 2032	10-test memory. Large, easy-to-read display. Large test strips.

Meter	Contact Information	Drop size (mcL)	Test time (sec)	Alternate site testing?*	Range (mg/dL)	Strip and Strip expiration	Coding needed?	Battery	Features
<i>Advance Micro-draw</i> Monitor no longer being manufactured. Strips still available.	Arkray 800-818-8877 www.arkrayusa.com	1.5	15	yes	20-600	<i>Advance Micro-draw</i> test strips 90 days after opening vial	yes	3-volt lithium CR 2032	Formerly known as <i>Advance</i> . Able to download. 250-test memory. 14- and 30-day averaging. Approved for finger and palm testing.
<i>Advocate Meter</i>	Diabetic Supply of Suncoast 866-373-2824 www.dsosi.com	0.7	7	yes	20-600	<i>Advocate</i> test strips 90 days after opening vial	yes	#2 AAA	Voice prompts and results spoken-English or Spanish versions available. Able to download. 450-test memory. 7-, 14-, 21-, 28-, 60-, and 90-day averaging. Ketone warning when glucose more than 240 mg/dL.
<i>Advocate Duo Meter</i>	Diabetic Supply of Suncoast 866-373-2824 www.dsosi.com	0.7	7	yes	20-600	<i>Advocate</i> test strips 90 days after opening vial	yes	#2 AAA	Also measures blood pressure. Voice prompts and results spoken-English or Spanish versions available. Able to download. 450-test memory. 7-, 14-, 21-, 28-, 60-, and 90-day averaging. Ketone warning when glucose more than 240 mg/dL.

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<i>Advocate Redi-Code</i>	Diabetic Supply of Suncoast 866-373-2824 www.dsosi.com	0.7	7	yes	20-600	<i>Advocate Redi-Code</i> test strips 90 days after opening vial	no	#2 AAA	Voice prompts and results spoken-English or Spanish versions available. Able to download. 450-test memory. 7-, 14-, 21-, 28-, 60-, and 90-day averaging. Ketone warning when glucose more than 240 mg/dL.
<i>Ascensia Breeze</i> Monitor no longer being manufactured. Strips still available.	Bayer 800-348-8100 www.bayerdiabetes.com	2.5-3.5	30	yes	20-600	<i>Autodisc</i> strip disk (10 strip disk) Until expiration on box	no	3-volt lithium CR 2032	Able to download. 100-test memory.
<i>Ascensia Breeze 2</i>	Bayer 800-348-8100 www.bayerdiabetes.com	1	5	yes	20-600	<i>Autodisc</i> strip disk (10 strip disk) <i>Breeze 2</i> strip disk (10 test strip disk) Until expiration on box	no	3-volt lithium CR 2032	Able to download. 420-test memory. 1-, 7-, 14-, and 30-day averaging. If using <i>Autodisc</i> strip, test time 30 seconds.

More . . .

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<i>Ascensia Contour</i>	Bayer 800-348-8100 www.bayerdiabetes.com	0.6	5	yes	10-600	<i>Ascensia Contour</i> test strips 6 months after opening vial	no	#2 3-volt lithium CR 2032	Available in different colors. Able to download. 2 modes- basic and advanced. 480-test memory. 7, 14, 30-day averaging. Meal markers with post meal test reminder alarm that remind user to test 2 ½ hours after a meal is marked.
<i>Ascensia Elite</i> Monitor no longer being manufactured. Strips still available.	Bayer 800-348-8100 www.bayerdiabetes.com	2	30	yes	20-600	<i>Ascensia Elite</i> test strips Until expiration on foil pouch	yes	#2 3-volt lithium CR 2032	Basic meter. No buttons. 20-test memory. Easy to use.
<i>Ascensia Elite XL</i> Monitor no longer being manufactured. Strips still available.	Bayer 800-348-8100 www.bayerdiabetes.com	2	30	yes	20-600	<i>Ascensia Elite</i> test strips Until expiration on foil pouch	yes	#2 3-volt lithium CR 2032	Basic meter. No buttons. 120-test memory.
<i>BD Logic</i> Monitor no longer being manufactured. Strips still available.	Nova 800-681-7428 www.novacares.com	0.3	5	no	20-600	<i>BD Test</i> strips or <i>NovaMax</i> test strips 90 days after opening vial	yes	3-volt lithium CR 2450	Able to download. 250-test memory. 7-, 14-day averaging.

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<i>Clever Check AutoCode</i>	Simple Diagnostics 877-342-2385 www.simplifiediagnostics.com	0.7	7	yes	20-600	<i>Clever Check Auto-Code</i> test strips 90 days after opening vial	no	3-volt lithium CR 2032	450-test memory. 7-, 14-, 21-, 28-, 60-, and 90-day averaging. Ketone warning when glucose more than 240 mg/dL.
<i>Clever Check AutoCode Voice</i>	Simple Diagnostics 877-342-2385 www.simplifiediagnostics.com	0.7	7	yes	20-600	<i>Clever Check Auto-Code Voice</i> test strips 90 days after opening vial	no	#2 AAA	450-test memory. 7-, 14-, 21-, 28-, 60-, and 90-day averaging. Voice prompts and results spoken-English or Spanish on same meter. Ketone warning when glucose more than 240 mg/dL.
<i>Clever Check AutoCode Blood Glucose plus Blood Pressure Monitor</i>	Simple Diagnostics 877-342-2385 www.simplifiediagnostics.com	0.7	7	yes	20-600	<i>Clever Check Auto-Code</i> test strips 90 days after opening vial	no	#2 AAA	Able to download. 352-test memory. 7-, 14-, 21-, 28-, 60-, and 90-day averaging. Ketone warning when glucose more than 240 mg/dL.
<i>CoZmonitor</i>	Smiths Medical 800-826-9703 www.cozmore.com	0.3	7	yes	20-500	<i>FreeStyle</i> test strips Until expiration on vial	yes	3-volt lithium CR 2032	Monitor attaches to <i>Deltec Cozmo</i> insulin pump.
<i>Eclipse</i>	Infopia USA 877-936-2363 www.infopiausa.com	0.1	5	yes	10-600	<i>Eclipse</i> test strip 3 months after opening	yes	#2 3-volt lithium CR 2032	Able to download. 365-test memory. Three customizable ways to average reading. Five programmable alarms.

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<i>Element</i>	Infopia USA 877-936-2363 www.infopiausa.com	0.3	3	yes	10-600	<i>Element</i> test strip 3 months after opening	no	#2 3-volt lithium CR 2032	Able to download. 365-test memory. Five programmable alarms. Test strip ejector.
<i>Evolution</i>	Infopia USA 877-936-2363 www.infopiausa.com	0.3	3	yes	10-600	<i>Evolution</i> test strip 3 months after opening	no	#2 3-volt lithium CR 2032	Able to download. 365-test memory. Five programmable alarms. Test-strip ejector.
<i>FreeStyle Flash</i> Monitor no longer being manufactured. Strips still available.	Abbott Diabetes Care 888-522-5226 www.abbottdiabetescare.com	0.3	7	yes	20-500	<i>FreeStyle</i> test strips Until expiration on vial	yes	#2 3-volt lithium CR 2032	Able to download. 250-test memory. 14-day averaging. Second blood application to strip within 1 minute allowed. Four optional programmable reminder alarms.
<i>FreeStyle Freedom</i>	Abbott Diabetes Care 888-522-5226 www.abbottdiabetescare.com	0.3	5	yes	20-500	<i>FreeStyle</i> test strips Until expiration on vial	yes	3-volt lithium CR 2032	Able to download. 250-test memory. 14-day averaging. Second blood application to strip within 1 minute allowed. Four optional programmable reminder alarms.
<i>FreeStyle Freedom Lite</i>	Abbott Diabetes Care 888-522-5226 www.abbottdiabetescare.com	0.3	5	yes	20-500	<i>FreeStyle Lite</i> test strips Until expiration on vial	No	3-volt lithium CR 2032	Able to download. 400-test memory. 7-, 14-, 30-day averaging. Second blood application to strip within 1 minute allowed. Four optional programmable reminder alarms.

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<i>FreeStyle Lite</i>	Abbott Diabetes Care 888-522-5226 www.abbottdiabetescare.com	0.3	5	yes	20-500	<i>FreeStyle Lite</i> test strips Until expiration on vial	no	3-volt lithium CR 2032	Able to download. 400-test memory. 7-, 14- and 30-day averaging. Second blood application to strip within 1 minute allowed. Four optional programmable reminder alarms.
<i>Glucocard X</i>	Arkray 800-818-8877 www.arkrayusa.com	0.3	5	yes	10-600	<i>Glucocard X Sensor</i> test strips 6 months after opening vial	no	3-volt lithium CR 2032	Able to download. 360-test memory. 14-, 30-, averaging. Second blood application to strip within 10 seconds allowed.
<i>Glucocard 01</i>	Arkray 800-818-8877 www.arkrayusa.com	0.3	7	yes	10-600	<i>Glucocard 01 Sensor</i> test strips 6 months after opening vial	no	3-volt lithium CR 2032	Able to download. 360-test memory. 14-, 30-, averaging. Second blood application to strip within 10 seconds allowed. Not covered by any insurance companies.
<i>GlucoCom</i>	CardioCom LLC 800-678-1446 www.glucocom.com	0.7	7	yes	20-600	<i>GlucoCom</i> test strips 90 days after opening vial	no	3-volt lithium CR 2032	Available through physicians, mail order, or distributors. Able to download. 450-test memory. 7-, 14-, 21- 28- 60-, and 90-day averaging. Allows telemonitoring using the AutoLink Blood Glucose Telemonitoring device.

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<i>GlucoLab</i>	Infopia USA 888-446-3246 www.infopiausa.com	0.1	5	yes	10-600	<i>Element</i> test strip 3 months after opening vial	yes	3-volt lithium CR 2032	Able to download. 365-test memory. Seven to 99 day averaging. Five programmable alarms.
<i>NovaMax</i>	Nova 800-681-7428 www.novacares.com	0.3	5	yes	20-600	<i>NovaMax</i> test strips 90 days after opening vial	no	3-volt lithium CR 2450	Able to download. 400-test memory. 1-, 7, 14-, 30-day averaging. Ribbed rubber grips. Compatible with <i>Paradigm Insulin Pump</i> .
<i>One Touch II Monitor no longer being manufactured. Strips still available.</i>	LifeScan 800-227-8862 www.lifescan.com	10	45	no	0-600	<i>One Touch Basic</i> test strips 4 months after opening vial	yes	size J (6 V)	Results are not plasma calibrated and therefore may be ~12% lower than plasma values. 250-test memory. Able to display in 9 languages.
<i>OneTouch Basic Monitor no longer being manufactured. Strips still available.</i>	LifeScan 800-227-8862 www.lifescan.com	10	45	no	0-600	<i>OneTouch</i> strips 4 months after opening vial	yes	#2 AAA	Results are not plasma calibrated and therefore may be ~12% lower than plasma values. 75-test memory. Large display. Newer versions have a data port.
<i>OneTouch InDuo Monitor no longer being manufactured. Strips still available.</i>	LifeScan 800-227-8862 www.lifescan.com	1	5	yes	20-600	<i>OneTouch Ultra</i> strips 3 months after opening vial	yes	3-volt lithium CR 2032	Combination blood glucose meter and insulin pen. Able to download. 150-test memory. 14- and 30-day averaging. Use with <i>Novo PenFill 3 mL</i> insulin.

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<i>OneTouch Profile</i>	LifeScan 800-227-8862 www.lifescan.com	1	45	yes	0-600	<i>OneTouch Basic</i> test strips 4 months after opening vial	yes	#2 AAA	Meter and strips available through mail order only. Able to download. 350-test memory. 7-, 14- and 30-day averaging. Able to display in 19 languages.
<i>OneTouch Select</i>	LifeScan 800-227-8862 www.lifescan.com	1	5	yes	20-600	<i>OneTouch Select</i> strips 3 months after opening vial	yes	3-volt lithium CR 2032	Meter and strips available through mail order only. Able to download. 350-test memory. 7-, 14- and 30-day averaging.
<i>OneTouch SureStep</i> Monitor no longer being manufactured. Strips still available.	LifeScan 800-227-8862 www.lifescan.com	10	30	no	0-500	<i>One Touch SureStep</i> test strips 4 months after opening vial	yes	#2 AAA	Able to download. Large display. 150-test memory. 14- and 30-day averaging.
<i>OneTouch Ultra</i>	LifeScan 800-227-8862 www.lifescan.com	1	5	yes	20-600	<i>OneTouch Ultra</i> test strips 3 months after opening vial	yes	3-volt lithium CR 2032	Able to download. 150-test memory. Ketone warning when glucose more than 240 mg/dL.
<i>OneTouch Ultra2</i>	LifeScan 800-227-8862 www.lifescan.com	1	5	yes	20-600	<i>OneTouch Ultra</i> test strips 3 months after opening vial	yes	#2 3-volt lithium CR 2032	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.

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<i>OneTouch Ultra Link</i>	LifeScan 800-227-8862 www.lifescan.com	1	5	yes	20-600	<i>OneTouch Ultra</i> test strips 3 months after opening vial	yes	#2 AAA	Able to download. 500-test memory. 7-, 14-, 30-day averaging. Meter can be set for English or Spanish. Wirelessly sends results to compatible Medtronic diabetes devices.
<i>OneTouch UltraMini</i>	LifeScan 800-227-8862 www.lifescan.com	1	5	yes	20-600	<i>OneTouch Ultra</i> test strips 3 months after opening vial	yes	3-volt lithium CR 2032	Available with or without a data port. 500-test memory.
<i>OneTouch UltraSmart</i>	LifeScan 800-227-8862 www.lifescan.com	1	5	yes	20-600	<i>OneTouch Ultra</i> test strips 3 months after opening vial	yes	#2 AAA	Able to download. 3000+-test memory. 7-, 14-, 30-, 60-, and 90-day averaging. Meter and electronic logbook combined. Creates charts and graphs.
<i>PocketChem EZ</i>	Arkray 800-818-8877 www.arkrayusa.com	1	10	yes	20-600	<i>Pocket Chem EZ</i> test strips 90 days after opening vial	yes	3-volt lithium CR 2032	Able to download. 250-test memory. 14- and 30-day averaging. Second blood application to strip within 10 seconds allowed.

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<i>Precision Xtra</i>	Abbott Diabetes Care 888-522-5226 www.abbottdiabetescare.com	0.6 (glucose) 1.5 (ketone)	5 (glu) 10 (ket)	yes	20-600	<i>Precision Xtra Glucose</i> test strips <i>Precision Xtra Ketone</i> test strips Use expiration on foil pouch	yes	3-volt lithium CR 2032	Able to download. 450-test memory, average blood glucose results for the last 7-, 14-, and 30-days. Able to test ketones with different strip. Second blood application to strip within 5 seconds allowed.
<i>Prestige IQ</i>	Home Diagnostics 800-342-7226 www.homediagnostics.com	4	10-50	yes	25-600	<i>Prestige Smart System</i> test strips Use until expiration on vial	yes	AAA	Able to download. 365-test memory. 14- and 30-day averaging. Reports results as whole blood or plasma readings. Internet uploading capability to allow patients to track, graph test results.
<i>Prodigy Advance</i> Monitor no longer being manufactured. Strips still available.	Diagnostic Devices, Inc. 800-366-5901 www.prodigymeter.com	0.6	6	yes	20-600	<i>Prodigy</i> strip (Same as <i>Prodigy Audio</i> and <i>Duo</i>) 3 months after opening vial	yes	#2 AAA	Able to download. 450-test memory. 7-, 14-, 21-, 28-, 60-, 90-day averaging.
<i>Prodigy Autocode</i>	Diagnostic Devices, Inc. 1-800-366-5901 www.prodigymeter.com	0.6	6	yes	20-600	<i>Prodigy Autocode</i> strip 3 months after opening vial	no	#2 AAA	Able to download. 450-test memory. 7-, 14-, 21-, 28-, 60-, 90-day averaging. Audio prompts guide user through using the meter and results.

More . . .

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<i>Prodigy Audio</i>	Diagnostic Devices, Inc. 1-800-366-5901 www.prodigy meter.com	0.6	6	yes	20-600	<i>Prodigy</i> strip (same as <i>Prodigy Duo</i> and <i>Advance</i>) 3 months after opening vial	yes	#2 AAA	Able to download. 450-test memory. 7-, 14-, 21-, 28-, 60-, 90-day averaging. Audio prompts guide user through using the meter and results.
<i>Prodigy Duo Monitor no longer being manufactured. Strips still available.</i>	Diagnostic Devices, Inc. 1-800-366-5901 www.prodigy meter.com	0.6	6	yes	20-600	<i>Prodigy</i> test strip (Same as <i>Prodigy Audio</i> and <i>Advance</i>) 3 months after opening vial	yes	#2 AAA	Able to download. 450-test memory. 7-, 14-, 21-, 28-, 60-, 90-day averaging. Audio prompts guide user through using the meter and results. Able to monitor blood pressure on same device.
<i>Prodigy Eject</i>	Diagnostic Devices, Inc. 1-800-366-5901 www.prodigy meter.com	0.6	6	yes	20-600	<i>Prodigy Eject</i> test strips 3 months after opening vial	yes	3-volt lithium CR 2032	Able to download. 450-test memory. 7-, 14-, 21-, 28-, 60-, 90-day averaging. Meter ejects test strip.
<i>Prodigy Voice</i>	Diagnostic Devices, Inc. 800-366-5901 www.prodigy meter.com	0.6	6	yes	20-600	<i>Prodigy Voice</i> test strip 3 months after opening vial	no	#2 AAA	Able to download. 450-test memory. 7-, 14-, 21-, 28-, 60-, 90-day averaging. Complete audio prompts guide user through time, date, meter settings, using the meter and results. Tactile features allow user to locate buttons. Meter ejects strip.

More . . .



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<i>ReliOn Microdraw</i>	Wal-Mart 800-992-3612 www.relion.com Available at Wal-Mart or Sam's Club only.	0.3	7	yes	20-600	<i>ReliOn</i> micro test strip Until expiration on foil pouch	no	3-volt lithium CR 2032	Able to download. Less expensive test strips (approx. \$22/50 strips). Test strips individually wrapped. 50-test memory. 7-, 14-, and 30-day averaging.
<i>ReliOn Ultima</i>	Wal-Mart 800-992-3612 www.relion.com Available at Wal-Mart or Sam's Club only.	0.6	5	yes	20-600	<i>ReliOn Ultima</i> test strip Until expiration date on foil pouch	yes	3-volt lithium CR 2032	Able to download. Less expensive test strips (approx. \$20/50 strips). Test strips individually wrapped. 450 tests memory. 7-, 14-, and 30-day averaging.
<i>Sidekick</i>	Home Diagnostics 800-803-6025 www.homediagnostics.com	1	5	yes	20-600	Preloaded strip 4 months after opening	no	Not applicable. Disposable meter.	Disposable meter built into vial cap. Contains 50 strips. 50-test memory.
<i>TrackEASE Smart System Monitor no longer being manufactured. Strips still available.</i>	Home Diagnostics 800-803-6025 www.homediagnostics.com	1	10	yes	20-600	<i>TrueRead</i> test strips 4 months after opening vial	yes	3-volt lithium CR 2032	365-test memory.
<i>True2Go</i>	Home Diagnostics 800-803-6025 www.homediagnostics.com	0.5	4	yes	20-600	<i>TrueTest</i> test strip vial 3 months after opening	no	3-volt lithium CR 2032	99-test memory. Strip release button.

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<i>TrueResults</i>	Home Diagnostics 800-803-6025 www.homediagnostics.com	0.5	4	yes	20-600	<i>TrueTest</i> test strip 3 months after opening vial	no	3-volt lithium CR 2032	500-test memory. 7-, 14-, 30-day averaging. Four programmable alarms. Strip release button. Ketone warning when glucose more than 240 mg/dL.
<i>TrueRead System</i>	Home Diagnostics 800-803-6025 www.homediagnostics.com	1	10	yes	20-600	<i>TrueRead</i> test strips 4 months after opening vial	yes	3-volt lithium CR 2032	200-test memory. Only available through mail service, independent pharmacies, healthcare distributors, durable medical and home medical equipment providers.
<i>TrueTrack System</i>	Home Diagnostics 800-803-6025 www.homediagnostics.com	1	10	yes	20-600	<i>TrueTrack System</i> test strips 4 months after opening vial	yes	3-volt lithium CR 2032	Able to download. 14- and 30-day averaging. 365-test memory.
<i>Wave Sense Keynote</i>	AgaMatrix, Inc. 866-906-4197 www.wavesense.info	0.5	6	yes	20-600	<i>WaveSense</i> test strips 3 months after opening vial	yes	#2 3-volt lithium CR 2032	Able to download. 300-test memory. 14-, 30-, and 90-day averaging. On-screen graphing. Rubber grips. Six programmable reminder alarms. Also sold as <i>Liberty</i> blood glucose monitor. Inexpensive strips (\$19.99/50 strips).

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<i>Wave Sense Jazz</i>	AgaMatrix, Inc. 866-906-4197 www.wavesense.info	0.5	6	yes	20-600	<i>WaveSense</i> test strips 3 months after opening vial	no	#2 3-volt lithium CR 2032	Able to download. 1865-test memory. 14-, 30-, and 90-day averaging. Rubber grips. Seven programmable reminder alarms. Wireless data transfer.
<i>Wave Sense Presto</i>	AgaMatrix, Inc. 866-906-4197 www.wavesense.info	0.5	6	yes	20-600	<i>Wave Sense Presto</i> test strips 3 months after opening vial	no	#2 3-volt lithium CR 2032	Able to download. 300-test memory. 14-, 30-, and 90-day averaging. Rubber grips. On screen graphing. Six programmable reminder alarms.

Chart is current as of March 2009.

*Alternate site testing indicates meter is approved for alternate site testing. However, approved sites of testing vary (i.e., palm versus forearm), depending on meter.

- All monitors are plasma-calibrated and report results in terms of plasma value, except where noted.
- Accuracy of test results may be affected by high altitudes (i.e., greater than 8,000 to 10,000 feet), high humidity (i.e., greater than 85% to 90%) and extremes of temperatures (i.e., less than 30-50°F or greater than 100-104°F).

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Selecting a Blood Glucose Meter

Self-monitoring of blood glucose (SMBG) has become an important part of diabetes care. A number of recent studies have demonstrated that good control of blood glucose leads to a reduction in morbidity and mortality.

The goal of SMBG is to document blood glucose levels at as many time points as possible to enable a more constant glucose level by a more precise therapeutic regimen.¹ SMBG can help patients with diabetes by:^{1,2}

- Controlling glucose values at a prescribed range
- Aiding in the recognition of hypoglycemia or hyperglycemia
- Allowing patients with diabetes to make choices in diet, physical activity, insulin, and other agents
- Allowing patients to see the effects of diet, physical activity, insulin, and other agents

Since the first glucose meters in 1971, glucose meters have become more and more sophisticated. Currently, there are 11 companies who market 35 different meters. The worldwide market for blood glucose meters and supplies is several billions of dollars per year and is expected to grow.²

In selecting a blood glucose meter, there are a variety of characteristics that should be evaluated including:

- Ease of use; number of steps required
- Amount of blood required
- Testing time; speed
- Size and weight of meter
- Measurement range
- Display size
- Meter cleaning requirements
- When and how to calibrate
- Whole blood versus plasma glucose concentration results
- Memory/ability to download
- Ability to average glucose values
- Cost of meter
- Cost of strips
- Cost/ease of replacement of batteries
- Ability to use alternate site testing
- Effect of altitude

- Customer support (i.e., availability of owner's manuals in languages other than English)

The chart above compares many of these characteristics among the currently available meters. A few of these characteristics are discussed below.

Whole Blood versus Plasma Glucose

When patients go to a lab to have a glucose concentration measured, the results are the glucose level in the plasma. However, a number of the older meters report the results of glucose in whole blood. Whole blood glucose concentrations are approximately 10% to 15% lower than plasma glucose concentrations. Other meters are "user selectable" meaning that the patients can select whether they want the reading to be a whole blood reading or "plasma calibrated." Many of the newer meters are "plasma calibrated" only so that although the meter measures the concentration in whole blood, the glucose value displayed reflects the plasma concentration of glucose and should be equivalent to the value that a lab would report.²

Test Strips

While the cost of the actual meter is often minimal or free, the cost of test strips can be prohibitive. Individual meters have specific test strips designed for that particular meter. Third-party or "generic glucose reagent strips" are strips that are marketed as a less expensive version of the brand name strips. While they may work on the meters listed on the package, it is important to confirm that they are appropriate. Manufacturers sometimes change their strips (by altering the chemicals on the strips) and these changes are not incorporated by the generic manufacturer. Patients should contact the manufacturer of their meter to assure that the strips they are using are compatible.²

In selecting a meter, the cost of strips should be considered. Bottles of 50 strips can cost between approximately \$20 to almost \$50.³

Alternate site testing

Recently, newer meters and strips that require much less blood (0.3 to 3 mcL) have been

More . . .

introduced. These allow for blood glucose testing at alternate sites, or testing from areas other than the fingertips. These areas have fewer nerve endings and are therefore less painful. Suggested alternate sites, depending on the specific blood glucose meter, include forearm, upper arm, palm, thigh, or abdomen.²

However, alternate site testing has some limitations. While the correlation between fingerstick and alternate site testing is acceptable when the blood glucose is relatively stable, alternate site testing results may not be accurate when the blood glucose is rapidly changing (i.e., within two hours of a meal, insulin, or exercise). Additionally, there is concern that alternate site testing may not detect hypoglycemia in a timely manner. These inadequacies are due to the fact that the rate of blood flow in the fingers is faster than that in the thigh, arm, abdomen, and palm. Due to these physiologic differences in circulation between the fingertips and other test sites, there can be a lag in glucose values in these sites during periods of rapid glucose changes.²

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Project Leader in preparation of this Detail-Document: Neeta Bahal O'Mara, Pharm.D., BCPS

References

1. Benjamin EM. Self-monitoring of blood glucose: the basics. *Clin Diabetes* 2002;20:45-47.
2. Food and Drug Administration. Glucose meters and diabetes Management. <http://www.fda.gov/Diabetes/glucose.html>. (Accessed March 11, 2009).
3. Children with Diabetes. Price of test strips. http://www.childrenwithdiabetes.com/d_0i_001.htm. (Accessed March 11, 2009).

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3120 West March Lane, P.O. Box 8190, Stockton, CA 95208 ~ TEL (209) 472-2240 ~ FAX (209) 472-2249
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