MQ 2016-2 Comparison of glucometers using whole blood

Note:
The instrument comparison is structured as a survey. This is a sample test, not a complete evaluation.

Introduction

Glucose self-testing devices are intended for patient's analysis of fresh capillary blood. Some of the devices are also suitable for the analysis of anticoagulated venous whole blood. Hemocue, StatStrip and AccuChek Inform 2 are intended exclusively for professional use.

As part of our inter-laboratory comparisons (surveys) for external quality control, plasma-based control samples (sample K1: Clinical Chemistry) are sent to our participating laboratories. Because of the occurring matrix effects, an individual target value for each glucose meter must be determined. Unfortunately, these target values do not compare well, since the properties of plasma are different than those of fresh capillary blood.

To nevertheless provide our participants with a target value that can be compared between instruments, we conduct additional comparative measurements with fresh blood in our laboratory.

Approach

The manufacturers provide equipment and test strips. All devices were tested using the manufacturer's control solutions and passed.
We used heparin venous blood from the same donor for both samples. Sample A was used as is. In sample B, the glucose concentration was increased by addition of a 1 mol/l glucose solution. Both samples were taken approx. one hour prior to the measurements.

Additional readings

The oxygen content of both samples was monitored using iSTAT from Axonlab.
The glucose was measured with the iSTAT, using a Glucoseoxidase (GOD) electrode.
For measuring the samples with Cobas 8000, we used the plasma after centrifugation of the sample. The Cobas 8000 Glucose-reagent works according to the hexokinase method.
The measurements with iSTAT and Cobas 8000 are traceable to NIST 965 standard solution for glucose in plasma.

	Sample A	Sample B
Glucose, Cobas 8000	4.80 mmol/L	8.70 mmol/L
Glucose, iSTAT	4.70 mmol/L	8.67 mmol/L
Group 1	4.60 mmol/L	8.23 mmol/L
Group 2	4.70 mmol/L	8.53 mmol/L
Mean	5.0 kPa	5.7 kPa
PO_2, iSTAT (normal: 11.1-14.4 kPa)	4.80 mmol/L	8.70 mmol/L

Control samples

The manufacturer's control solutions were measured ten times.

MQ survey specimen K1 (2016-2)

The plasma sample for the current survey was measured with instruments that were available to participants of the survey.

Manufacturer information

Not all devices are certified for analysis of venous blood. Please consult the list at the end of this report.
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Precision
To stay within the QUALAB tolerance range of 10%, the % CV for glucose concentration may not exceed 5%, and is ideally lower than 3.3%.

20 from 21 devices achieved CV values below 5%
9 devices achieved the 3.3% limit with specimen A, and 18 units with specimen B.

You can find the expected CV% - values according to the manufacturers in Table 6, in the columns "precision". Sample A corresponds to the concentration 2, Sample B corresponds to the concentration 3. With the higher concentration in Sample B, 13 from 21 instruments reached the specifications of the manufacturer where as in Sample A, 12 from 21 instruments reached the specifications.

Accuracy
To check the accuracy we used the following criteria:

- 3 measurements with iSTAT (GOx Elektrode)
- 3 measurements with Roche Cobas 8000 (Hexokinase)
- Mean of all devices where measuring venous blood is part of their intended use (group 1).

We distinguish two groups of instruments:
- Group 1 is approved for the analysis of venous blood according to the manufacturer's specifications
- Group 2 may be used with fresh capillary blood only..

Ideal deviations are <4%.
In the group 1, for the lower concentration 7 out of 12 instruments and for the higher concentration 7 out of 12 instruments achieved a deviation of less than 4%.

In Group 2, we did not assess the accuracy of measurements with venous blood.

In addition, we compared the devices using fresh capillary blood. Green marked are the deviations (Dev%) of the measured values <10% of the mean value. With reference to ISO15197:2013, all values were within the limits.

	Gluc	Gluc	Gluc
Accu-Chek Mobile	6.2	6.2	5.7
GlucoCard Xmini plus	5.9	6.3	5.8
GlucoMen LX Plus	6.4	6.7	6.6
GlucoMen Ready	5.6	5.5	5.5
Glucomen areo	5.9	5.7	5.9
mylife Pura	5.7	5.6	5.3
Healthpro-X1	6.4	6.2	6
BG-Star	5.9	6.1	5.9
mean value	5.8	5.8	5.6

Table 1: Comparision of glucometers of group 3 with fresh capillary blood

Total error
Results within the QUALAB tolerance of ± 10% around the target value were highlighted in green.

For blood glucose monitoring systems that are used by patients themselves, the ISO 15197:2013 standard applies as of May 2013. New is that 95% of the test results must be within the ± 15% range. For glucose concentrations below <5:55 mmol/l an absolute tolerance of ± 0.83 mmol/l must be observed.

In Specimen A, this tolerance was 3.87 to 5.53 mmol/l, in Specimen B the tolerance was 7.25 to 9.81 mmol/l. All instruments conformed to the ISO 15197:2013 requirements.

With the measured values of Group 2 with fresh capillary blood, all instruments meet the ISO-requirements.

Zürich, 8.7.2016

Dr. R. Fried

Group 1	1	2	3	4	5	6	7	8	9	10	mean	Bias	VK%
Hemocue 201+	4.5	4.5	4.3	4.5	4.6	4.7	4.7	4.5	4.4	4.3	4.5	-4.25%	3.14
Hemocue 201RT	5.1	4.9	4.7	4.7	4.9	4.8	4.7	5.1	4.8	4.5	4.8	2.56%	3.89
StatStrip Express	4.6	4.6	4.5	4.3	4.6	4.4	4.5	4.6	4.6	4.3	4.5	-4.25%	2.77
Accu-Chek Inform 2	4.6	4.4	4.6	4.5	4.4	4.6	4.4	4.5	4.5	4.5	4.5	-4.25%	1.81
Accu-Chek Aviva	4.7	4.7	4.6	4.6	4.6	4.6	4.6	4.3	4.6	4.6	4.59	-2.33%	2.40
Contour next one	4.7	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.4	4.5	4.58	-2.55%	2.26
FreeStyle Precision	4.9	5	4.8	4.7	4.7	4.8	4.9	4.8	4.7	4.5	4.78	1.71%	2.93
Freestyle Freedom Lite	4.7	4.7	4.4	4.7	4.6	4.6	4.6	4.6	4.7	4.6	4.62	-1.70%	1.99
OneTouch Verio IQ	4.8	5.1	4.9	4.9	4.8	4.7	4.8	4.9	5	4.9	4.88	3.84%	2.33
mylife Unio	4.6	4.7	4.3	4.3	3.9	4.4	4.1	4.2	4.3	4.2	4.3	-8.51%	5.37
FORA GD40a	4.7	4.8	4.7	4.8	4.6	4.2	4.8	4.7	4.7	4.7	4.67	-0.63%	3.78
FORA GD50	4.5	4.5	4.4	4.5	4.3	4.6	4.5	4.3	4.5	4.4	4.45	-5.31%	2.18
Group 2 (venous blood not approved)													
Accu-Chek Mobile	5.3	5.2	5.3	4.9	5.2	5	5.2	5.2	4.9	5			3.03
GlucoCard Xmini plus	4.7	4.8	4.5	4.6	4.4	4.5	4.7	4.9	4.9	4.8			3.74
GlucoMen LX Plus	6	5.9	5.9	5.7	5.8	5.8	5.9	5.6	5.8	5.7	Accuracy		3.17
GlucoMen Ready	5.4	5.1	5.3	5.3	5.2	5.1	5	4.9	4.6	4.5	see		2.45
Glucomen areo	5.1	5.2	5.1	5.1	5.1	4.9	4.9	4.9	5.1	4.9	Table 1		2.77
mylife Pura	5.4	5.6	5.6	5.4	5.4	5.3	5.4	5.5	5.4	5.5			1.78
Healthpro-X1	6.3	6	6.3	6.3	6.5	6.5	6.5	6.5	6.3	6.6			2.74
BGStar	5.3	5.2	5.3	5.3	5.1	5.4	5	5.1	5	5.3			2.72
Gluceofine	6.2	5.9	5.8	6.2	6.2	6.4	5.9	5.6	6	5.9			3.96

Table 2: Sample A wholeblood, normal, postprandial. *All Glucose values are in mmol/l, alle instruments are plasma calibrated. Values of group 1 within the Qualab-tolerance of 10% are green colored.*
Target value: 4.70 mmol/l, mean USZ (Cobas 8000): 4.80 mmol/ll, mean iSTAT 4.70 mmol/l (PO2 = 5.0 kPa), Hematocrit: 0.39 l/l

Group 1	1	2	3	4	5	6	7	8	9	10	mean	Bias	VK%
Hemocue 201+	8.2	8.3	8.3	8.4	8.4	8.9	8.6	8.0	8.4	8.3	8.4	-1.77%	2.86
Hemocue 201RT	8.0	8.4	8.0	8.2	8.0	8.0	8.0	7.9	8.3	7.9	8.1	-5.41%	2.11
StatStrip Express	8	7.9	8.2	8.3	8.1	8	7.9	8	8.3	7.8	8.05	-5.64%	2.13
Accu-Chek Inform 2	8.1	7.9	8	8	8.2	8.3	8.1	8.1	8.1	7.9	8.07	-5.41%	1.55
Accu-Chek Aviva	8.3	8.4	8.2	8.4	8.5	8.3	8	8.2	8.2	8	8.25	-3.30%	2.00
Contour next one	8.2	8.7	8.1	8.5	8.2	8.5	8	8.3	8.4	7.9	8.28	-2.95%	3.00
FreeStyle Precision	8.6	8.6	8.8	8.6	8.6	8.3	8.3	8.7	8.3	8.4	8.52	-0.13%	2.13
Freestyle Freedom Lite	9	8.7	8.4	8.6	9	9	8.9	8.5	8.8	8.6	8.75	2.56%	2.54
OneTouch Verio IQ	8.3	8.4	8.5	8.6	8.5	8.5	8.8	8.4	8.4	8.3	8.47	-0.72%	1.76
mylife Unio	7.7	7.7	7.7	7.8	7.7	7.7	7.7	7.6	7.7	7.2	7.65	-10.33%	2.16
FORA GD40a	8.4	8.2	8.4	8.3	8.2	8.5	8.5	8.2	8.3	8.2	8.32	-2.48%	1.48
FORA GD50	8.1	8.2	7.6	8.1	8.1	8	7.9	7.7	7.8	7.7	7.92	-7.17%	2.65
Group 2 (venous blood not approved)													
Accu-Chek Mobile	9.2	8.9	9.5	8.9	8.9	9.1	9	8.9	9.3	8.8			2.46
GlucoCard Xmini plus	9.1	9.1	8.7	9.4	9.1	8.2	8.5	8.6	8.3	8.6			4.51
GlucoMen LX Plus	9.4	9	9.3	8.9	9.4	9.3	9.5	9.3	8.9	9.3		Accuracy	3.42
GlucoMen Ready	7.8	8.2	8.3	8.3	8.5	8.6	8.7	8.6	8.5	8.7		see	1.71
Glucomen areo	8.9	8.4	8.9	8.6	8.3	8.7	8.6	8.5	8.4	8.6		Table 1	2.11
mylife Pura	8.9	8.8	8.8	8.9	8.6	8.7	8.7	8.7	8.7	8.6			1.23
HealthproX1	9.5	9.7	9.8	9.4	9.3	9.3	9.7	9.7	9.6	9.6			1.86
BGSTAR	9.2	9.1	8.8	8.9	9	8.8	9.2	9.2	8.9	9.2			1.89
Gluceofine	9.5	9.9	9.9	9.5	9	8.8	9.2	9.2	8.9	9.2			4.13

Table 3: Sample B, venous whole blood, normal with additional glucose.
Target value: 8.53 mmol/l, mean USZ (Cobas 8000): 8.70 mmol/ll, mean iSTAT 8.67 mmol/l (PO$_2$ = 5.7 kPa), hematocrit: 0.39l/l

	low	high	target	1	2	3	4	5	6	7	8	9	10	mean	Bias	CV%
Hemocue 201+	6.0	7.4	6.7	6.6	6.6	6.7	6.6	6.6	6.8	6.9	6.4	6.6	6.6	6.64	-0.90	2.03
Hemocue 201+	10.0	12.2	11.10	10.7	10.9	10.6	10.6	11.1	10.9	10.9	10.9	10.7	10.8	10.81	-2.61	1.48
Hemocue 201RT	5.6	6.8	6.2	5.9	5.9	6	6.1	6.2	6.1	6.1	5.9	6.1	6	6.03	-2.74	1.76
Hemocue 201RT	9.7	11.9	10.8	10	10.1	10.1	10.1	10	10.2	10	10	10.2	10.3	10.10	-6.48	1.04
StatStrip Express	3.0	3.6	3.3	3.1	3.1	3.1	2.9	3	3.2	3.1	3	2.9	2.9	3.03	-8.18	3.50
StatStrip Express	5.5	6.7	6.1	5.6	5.6	5.5	5.6	5.4	5.6	5.3	5.6	5.6	5.7	5.55	-9.02	2.12
StatStrip Express	14.5	17.7	16.1	14.3	14.5	14.7	14.9	14.8	14.3	14.4	14.5	14.6	14.8	14.58	-9.44	1.47
AccuChek Inform 2	2.3	2.8	2.5	2.4	2.4	2.4	2.5	2.4	2.6	2.5	2.6	2.6	2.5	2.49	-0.40	3.52
AccuChek Inform 2	15.3	18.8	17.05	17	16.5	17	16.8	16.8	16.9	16.4	17	16.8	16.6	16.78	-1.58	1.28
Accu-Chek Aviva	2.3	2.8	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.6	2.5	2.44	-2.40	2.87
Accu-Chek Aviva	14.9	18.3	16.6	16.9	17.1	17.1	17.1	16.9	17.1	16.6	16.8	16.7	16.3	16.86	1.57	1.59
Accu-Chek Mobile	3.2	3.9	3.5	2.9	3.6	3.4	3.1	2.5	2.4	3.7	2.9	3.7	3.8	3.20	-8.57	16.07
Accu-Chek Mobile	8.8	10.8	9.8	9.2	11.7	10.4	10.3	9.9	9.9	10.1	10.1	9.6	9.7	10.09	2.96	6.60
Contour next one	6.2	7.6	6.9	6.8	6.9	6.9	7.1	7	6.7	7	6.9	6.9	6.9	6.91	0.14	1.59
Freestyle Freedom Lite	2.3	2.8	2.5	2.7	2.7	2.7	2.6	2.7	2.7	2.7	2.7	2.7	2.6	2.68	7.20	1.57
Freestyle Freedom Lite	15.5	19.0	17.25	17.7	17.4	17.6	17.1	17.5	17.4	17.6	17.1	17.3	17.4	17.41	0.93	1.16
FreeStyle Precision	2.3	2.8	2.5	2.1	2.2	2	1.9	2.1	2.1	2.1	2.3	2.3	2.2	2.13	-14.80	5.88
FreeStyle Precision	4.8	5.9	5.35	5.4	5.2	4.8	4.8	4.9	4.4	4.9	5.6	4.9	4.3	4.92	-8.04	8.18
FreeStyle Precision	14.5	17.7	16.1	15.8	14.2	16.2	15	16.1	15.4	15.6	14.9	15.6	15.8	15.46	-3.98	3.94
OneTouch Verio IQ	6.3	7.7	7	7.2	7	6.9	6.9	6.9	7.1	7	7	6.9	6.9	6.98	-0.29	1.48
GlucoCard Xmini plus	5.0	6.2	5.6	5.2	5.1	5	4.9	5	5.2	5.4	5.2	5.2	5.1	5.13	-8.39	2.76
GlucoCard Xmini plus	10.2	12.4	11.3	11.2	10.6	10.9	11	10	10.2	10.8	10.3	9.8	10.1	10.49	-7.17	4.53

Table 4a: Control solution of manufacturer

	low	high	target	1	2	3	4	5	6	7	8	9	10	mean	Bias	CV%
GlucoMen LX Plus	5.8	7.1	6.45	6.8	6.7	6.9	6.8	6.9	7	7.1	6.9	6.8	7	6.89	6.82	1.74
	14.7	19.8	17.15	16.9	16.5	17	16.8	17.4	17.3	17	17.9	17.4	17.1	17.13	-0.12	2.27
PuraX	4.7	5.7	5.2	6.1	5.8	5.8	5.7	5.8	5.2	5.3	5.3	5.5	5.2	5.57	7.12	5.62
Unio	5.5	6.7	6.1	5.8	5.8	5.8	5.8	5.9	5.6	5.7	5.7	5.6	5.8	5.75	-5.74	1.69
	12.6	15.5	14.05	15.4	15.4	15.2	15.2	15.3	15.1	15.1	14.9	14.9	14.8	15.13	7.69	1.40
GlucoMen areo	5.5	6.7	6.1	6.4	6.1	6.4	6.3	6.6	6.1	6.4	6.3	6.4	6.4	6.34	3.93	2.37
	10.9	13.3	12.1	12.2	11.8	12.3	12.3	12.3	12.1	12.7	12	11.6	11.9	12.12	0.17	2.57
FORA GD40a	7.2	8.9	8.05	7.2	7.6	7.5	7.5	7.5	7.6	7.4	7.2	7.1	7.2	7.38	-8.32	2.54
FORA GD50	7.3	9.0	8.05	7.6	7.6	7.6	7.5	7.6	7.7	7.7	7.6	7.5	7.6	7.60	-5.59	0.88
Healthpro-X1	4.7	5.8	5.25	6.2	6	5.9	5.7	5.8	5.5	5.7	5.7	5.8	5.7	5.80	10.48	3.35
BGStar	6.3	7.6	6.95	7	7.7	7.3	7.7	7.5	7.3	7.6	7.1	7.4	7.5	7.41	6.62	3.21
Gluceofine	4.3	5.3	4.8	5.2	5.4	5.3	5.1	5.3	4.9	4.9	4.9	5	5	5.10	6.25	3.70
	12.0	14.6	13.3	13	13.5	13	14	13.4	13.6	13.5	14	14.3	13.5	13.58	2.11	3.10
GlucoMen Ready	7.1	8.6	7.85	8.4	8.3	8.3	8.4	8.3	8.5	8.5	8.3	8.2	8.3	8.35	6.37	1.16
	12.5	15.2	13.85	14.5	14.2	14.7	14.8	14.3	14.7	14.2	14.6	14.7	15.2	14.59	5.34	2.11

Table 4b: Control solution of manufacturer

	target	1	2	3	4	5	6	7	8	9	10	mean	CV%	Bias %
Hemocue 201+	12.7	12.8	13.1	13	12.9	13	13.2	13	13.5	13	13.1	13.09	1.44	3.05
Hemocue 201RT	12.3	12.1	12	12.3	12.4	12.3	12.1	12.5	12.4	12.6	12.4	12.38	1.20	0.61
Nova Statstrip	*	9.2	9.2	9.6	9.4	9.4	8.7	9.4	9.2	8.9	9	9.20	3.34	
AccuChek Inform 2	12.1	11.9	11.9	12	11.8	12	12	12.1	12	12	12	11.99	0.70	-0.93
AccuChek Aviva	12	12.4	12	12	12	12	12.2	12.3	12	12.1	12	12.08	0.96	0.62
Contour next one	11.1	10.7	10.6	10.8	10.6	10.8	10.8	10.5	10.5	10.7	10.5	10.65	1.33	-4.05
FreeStyle Precision	12.3	11.8	11.4	11.2	11.9	11.8	11.5	11.7	12.1	11.4	12	11.70	2.66	-4.88
FreeStyle Lite	11.7	12.6	11.9	12.4	12.7	12.3	12.8	12.3	12.3	12.6	12.5	12.49	1.57	6.73
OneTouch Verio IQ	11.3	11.3	11	11	11	10.7	10.9	10.9	10.8	11.1	11	10.93	1.17	-3.32
mylife Unio	12.2	12.2	12.4	12.4	12.6	12.2	12.3	12.1	12.3	12.4	12	12.29	1.53	0.72
FORA GD40a	*	10	9.7	9.8	9.6	10.1	9.6	9.7	9.7	9.7	9.6	9.73	1.61	
FORA GD50	*	15.9	16.3	15.8	15.7	16	15.4	16	15.6	15.8	15.5	15.73	1.30	
AccuChek Mobile	10.6	11.5	11.3	10.7	10.8	10.9	10.9	10.8	10.4	10.9	11.3	10.84	2.16	2.24
GlucoCard Xmini plus	17.1	16.1	14.7	14.9	16.6	15.2	14.6	15.3	15.2	14.1	14.6	15.06	4.60	-11.92
GlucoMen Ready	*	16.2	15.9	15.8	16.1	19.8	19.3	19.2	19.3	18.3	18.8	18.33	7.81	
GlucoMen areo	*	13.6	14.2	14.1	14.1	13.9	14.1	13.7	13.6	13.4	13.7	13.83	1.92	
mylife Pura	13.9	14.5	14.4	14.4	14.5	14.4	14.7	14.6	14.4	14.6	14.2	14.48	1.02	4.14
Healthpro XI	20.2	20.8	21.2	20.4	20.8	29.7	20.6	20	21	20.8	20.3	21.70	14.00	7.43
BGSTAR	*	15.8	15.1	16.9	16.3	15.3	14.7	15.9	15.9	15.5	15.2	15.71	4.11	

Table 5: Survey Sample MQ 2016-2 K1 (Plasma-sample). *The target value for the hexokinase method on Cobas instruments was 11.2 mmol/l.*
None of the listed instruments is approved for the analysis of plasma glucose. The systems respond quite differently to plasma, depending on the type of electrode and hematocrit compensation. Therefore, a separate target value is calculated in the survey for each system..

* Not enough participants at the MQ-surveys for this instrument. It was not possible to calculate a consensus value as target.

Instrument	Company	Samp.	Ac	Enzyme	Meas	Cal.	Hc%	Precision				
								1	2	3	4	5
Hemocue 201+	Hemocue	KVAN	HEF	GDH-NAD	AF	ID-GCMS			3.5	2.6	1.9	1.6
Hemocue 201RT	Hemocue	KVAN	HEF	GDH-NAD	AF	ID-GCMS		2.4		1.3		1.3
StatStrip Express	Menarini	KVAN	H	GOx	A	YSI	20-65	3.6		2.8		2.9
Accu-Chek Inform 2	Roche	KVAN	HEF	mGDH-PQQ	A	HK	10-65	4.0	4.1	3.3	3.3	3.2
Accu-Chek Aviva	Roche	KVAN	HE	mGDH-PQQ	A	HK	20-70	3.6	3.3	3.3	3.4	3.4
Contour next one	Ascensia	KVN	H	GDH-FAD	A	YSI	0-70	1.8	1.9	1.3	1.2	1.7
Freestyle Precision	Abbott	KVAN	HE	GDH-NAD	A	YSI	30-60		4	3	2.7	3.2
Freestyle Freedom Lite	Abbott	KV	H	GDH	C	YSI	15-65	3.3	2.4	2.2	2.3	2.4
OneTouch Verio IQ	Lifescan	KV	HEC	FAD-GDH	A	YSI	20-60	2.2	2.0	1.9	1.9	1.9
mylife Unio	Ypsomed	KV	HE	GDH-FAD	A	HK	10-70	3.8	1.8	1.7	1.6	1.7
FORA GD40a	FORA	KV	H	GDH-FAD	A	YSI	0-70	8.4	3.4	3.1	4.3	2.4
FORA GD50	FORA	KV	H	GDH-FAD	A	YSI	20-60	4.6	3.9	3.4	2.9	2.9
Accu-Chek Mobile	Roche	K		mGDH-PQQ	RF	HK	25-55	6.5	2.6	2.4	2.0	1.9
GlucoCard Xmini plus	Axonlab	K		GDH	A	YSI	30-52	2.8	2.8	2.9	3.0	2.6
GlucoMen LX Plus	Menarini	K	H	GOx	A	YSI	25-60	2.6	3.6	1.9	1.7	3.0
GlucoMen Ready	Menarini	K		GOx	A	YSI	20-60	5.5	3.3	3.4	3.4	3.2
GlucoMen areo	Menarini	K		GOx	A	YSI	10-70	3.5	2.4	2.3	2.3	1.7
mylife Pura	Ypsomed	K		GOx	A	HK	30-60	1.8	1.1	1.1	1.7	1.7
DynaValeo Liso	dynamicare	K		GOx	A	YSI	35-55	4.7	3.2	3.3	2.4	2.1
Healthpro-X1	Axapharm	K	E	GOx	A	HK	20-60	3.6	2.9	2.5	3.2	2.5
BGSTAR	Sanofi	K		GOx	A	YSI	20-60	4.3	3.6	3.4	3.1	3.8
Gluceofine	Belonga	K		GOx	A	HK	20-60	4.0	2.8	2.2	2.8	2.7

Table 6: Manufacturer informations on the instruments
Sample: K=capillary blood, V=venous blood, A=arteriel blood, N=neonatal blood
Anticoagulans (Ac): H=Heparin, E=EDTA, C=Citrate, F=Fluoride
Enzyme: GDH=Glukosedehydrogenase, GOx=Glukoseoxidase
Method: A=Amperometry, C=Coulometry, RF=Reflection-photometry, AF=Absorption-photometry
Calibration: HK=wet chemistry, with Hexokinase-Method, YSI=instrument with Glucoseoxidase-Electrode
HK: Hämatocrit-range
Precision after ISO15197 (concentrations: 1: 1.7-2.8 mmol/L; 2: 2.9-6.1 mmol/L; 3: 6.2-8.3 mmol/L; 4: 8.4-13.9 mmol/L; 5: 14.0-22.2 mmol/L)
Alle data in table 5 are from the package inserts of the teststrips or from additional documents of the manufactures.
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