KING'S College LONDON

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SMBG time for renaissance

Dr Pratik Choudhary

Senior Lecturer and Consultant in Diabetes

A physician looking at a container of urine, using his senses of sight, touch, hearing, smell and taste to make a diagnosis.

HOME MONITORING OF BLOOD-GLUCOSE

Method for Improving Diabetic Control

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C. LOWY

Department of Medicine, St. Thomas's Hospital Medical School, London SE1 7EH

Summary 64 diabetic patients measured their own blood-glucose concentration with 'Dextrostix' (Ames) and an 'Eyetone' (Ames) meter. The records made at home by 53 of these patients have shown that this led to a significant improvement in blood-glucose control. A majority (64%) were able to maintain "good" control (80% of blood-glucose recordings equal to or less than 10 mmol/l for periods as long as 478 days). This hitherto unobtainable degree of control of blood-glucose was achieved mostly with conventional insulin regimens of twice-daily 'Actrapid' (Novo Laboratories Ltd.) and 'Leo-Retard' (Leo Laboratories Ltd.). Adjustments of insulin dosage and type were found to be much easier and more predictable than with urine-glucose analysis. No significant complications were encountered. Hypoglycæmic episodes were less frequent. 70% of patients preferred blood-tests to urine tests and 92% would like to buy their own meter "if the price was right." The results suggest that self-monitoring of blood-glucose by diabetics makes possible, for the first time, the achievement of near normoglycæmia. This may reduce the incidence of long-term diabetic complications.

Inventé et fabriqué par Arkray pour la société Ames.

Diabetes Care. 1980 Jan-Feb;3(1):100-7.

Home monitoring of blood glucose: new approach to management of insulin-dependent diabetic patients in Great Britain.

Sönksen PH, Judd S, Lowy C.

Abstract

The history of home monitoring of blood glucose by diabetic patients at St. Thomas' Hospital in London is reviewed. Initial successful experience with pregnant diabetic patients was extended to cover those with retinopathy and, subsequently, to all insulin-treated patients. Experience showed overwhelming preference by patients for blood glucose monitoring over urine tests and demonstrated improvement in blood glucose control. Experience in children 13 and older was equally (if not more) enthusiastic as in adults. Self-monitoring revealed many elementary mistakes in insulin therapy, which, when corrected, led to marked improvement in diabetic control with reduced frequency and severity of hypoglycemic attacks. Initial studies were made with Dextrostix and Eyetone. The need for a simple patient-oriented blood glucose machine was identified, and Glucochek was designed to meet it. Evaluation of Glucochek was satisfactory, and it was well liked by patients. It seems likely that blood glucose monitoring will replace urine tests in the majority of diabetic patients.

Testing

- Reasons to test
  - To aid decision making
  - For education
  - To reassure
  - For the physician

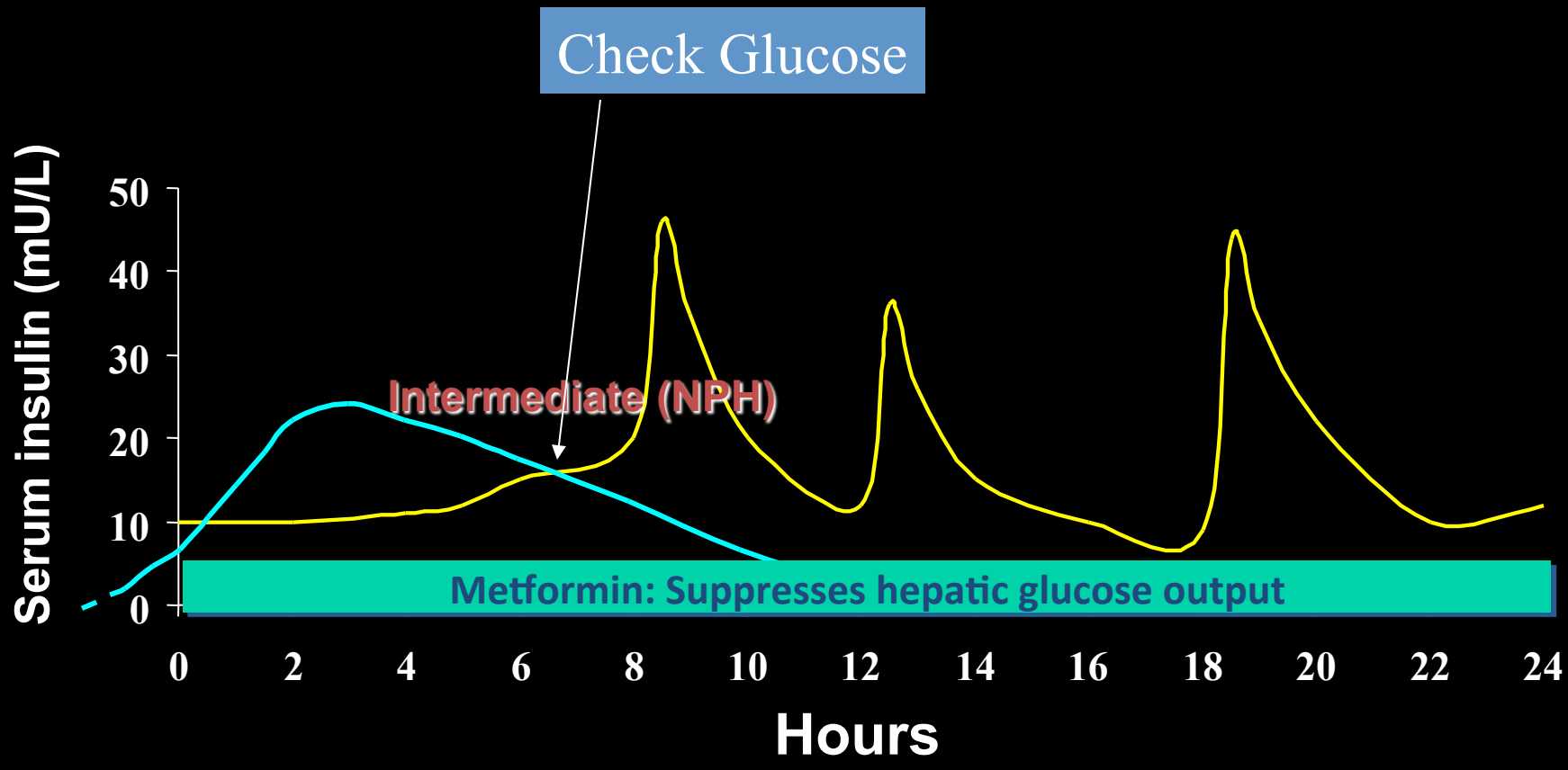
- Every injection given without knowledge of
  - BG [to allow correction]
  - CHO [to allow appropriate dosing]

–is wrong

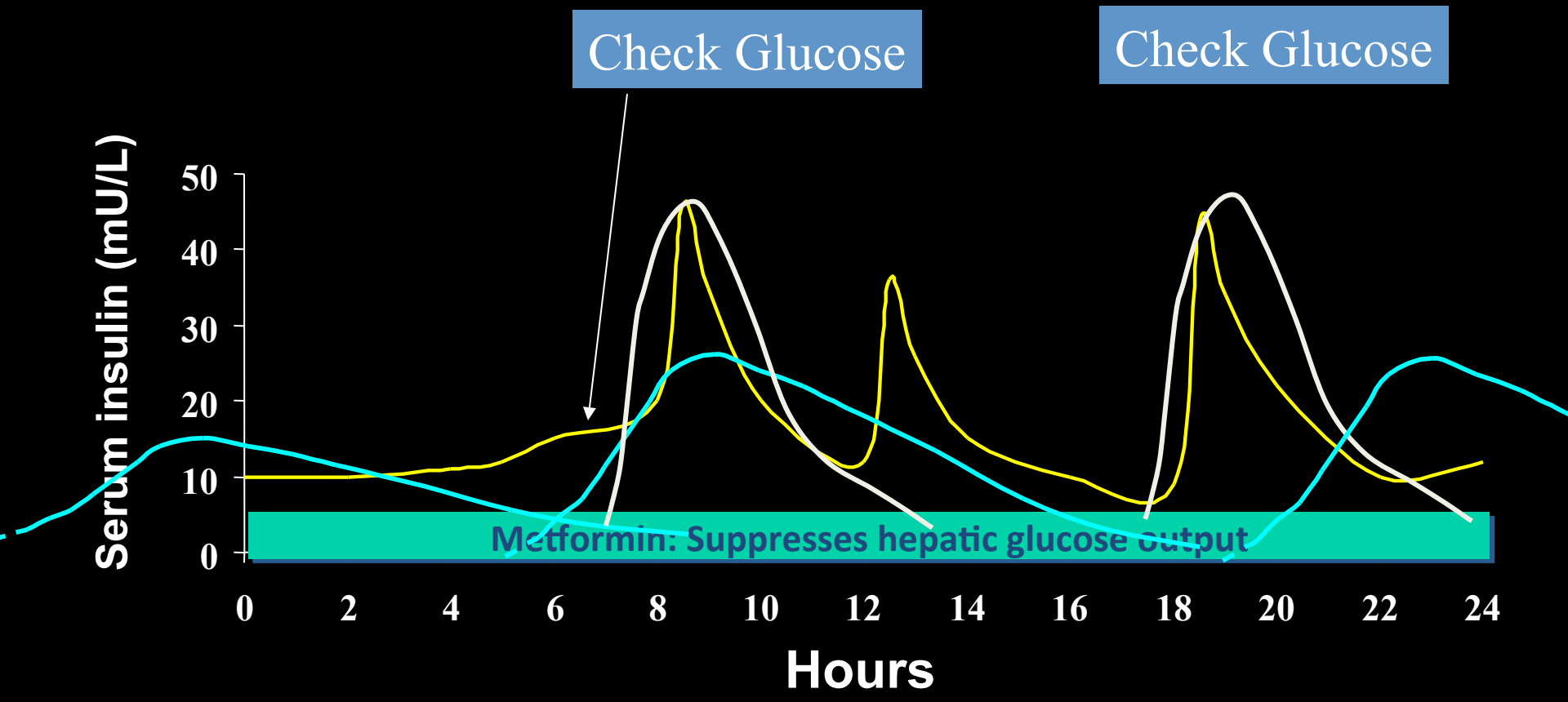
Systems

- Frequency of testing
  - Proportional to number of injections
- Basal alone — Fasting
- BD mix — pre-inj
- Or — Diagonal
- MDI — 4 point
- Or — 7 point

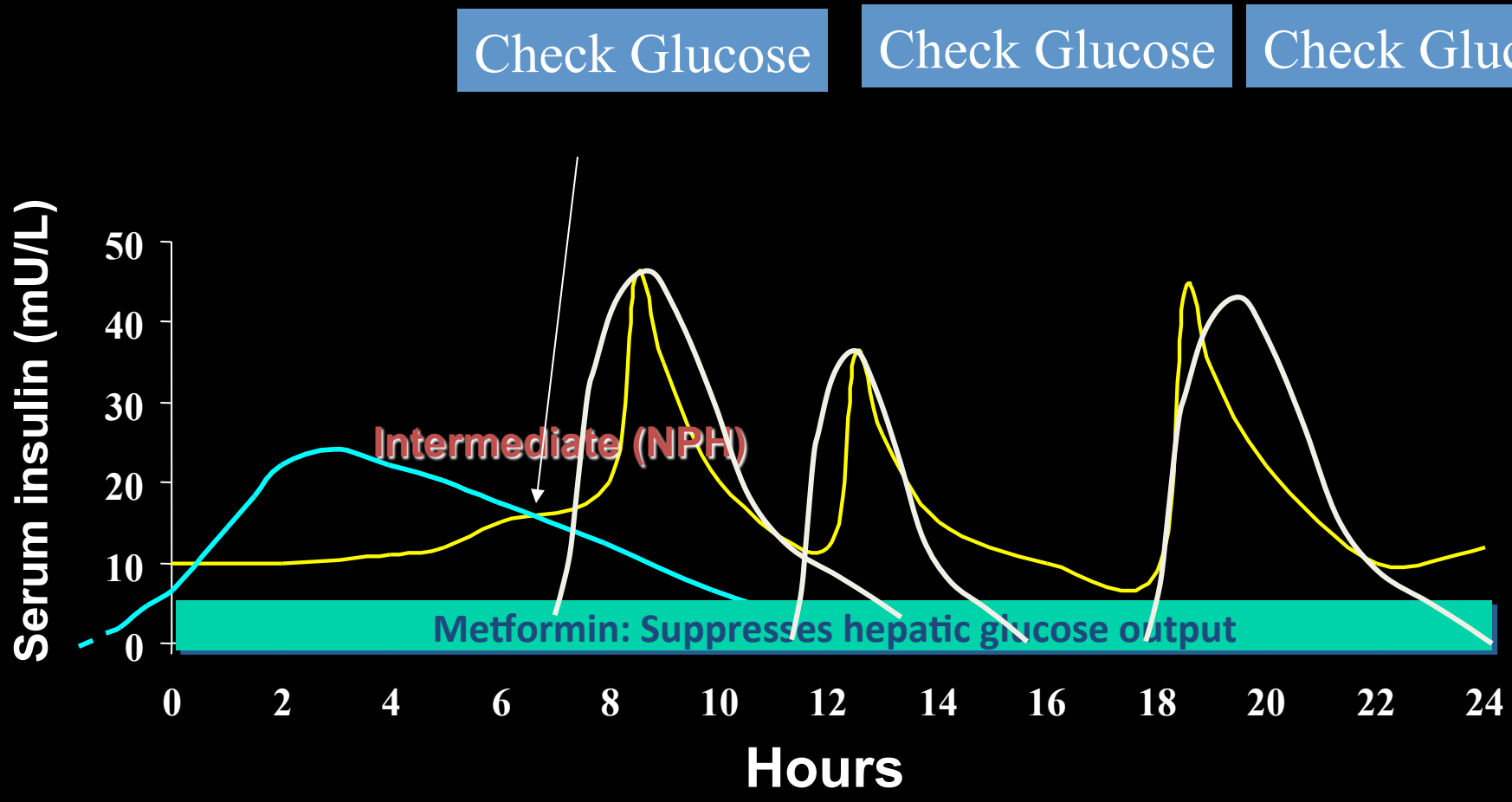
Starting insulin - bedtime insulin



Starting insulin - bedtime insulin



Starting insulin - bedtime insulin



HOW SHOULD WE ADJUST INSULIN ACCORDING TO SMBG

Comparison of Bedtime Insulin Regimens in Patients with Type 2 Diabetes Mellitus

A Randomized, Controlled Trial

Hannele Yki-Järvinen, MD; Leena Ryysy, MD; Kati Nikkilä, MD; Timo Tulokas, MD; Raimo Vanamo, MD; and Marjatta Heikkilä, RN

Ann Intern Med. 1999;130(5):389-396.

NPH + Metformin

NPH + Glibenclamide

NPH + Glibenclamide + metformin

NPH + NPH

Dose adjustment algorithm

- Start dose = FBG in mmol/l

- If FBG > 8 mmol/l on 3 days – incrase by 4 units
- If FBG i> 6 mmol/l ion 3 consecutive days – increase by 2 units

- Target FBG <6mmol/l

Titration algorithms

APOLLO TRIAL

- BG on 2 consecutive days:

< 5.5 - = target

5.6 – 6.7 → add 2 units / day

6.7 – 7.8 → Add 4 units / day

7.8 - < 8.9 → + 6 units / day

>8.9 = add 8 units

Levemir study

- Average of 3 SMBG

- <6.0 - no change
- 6.1 – 10.0 +2 units
- 10.1 – 15.0 + 4 units
- > 15 units + 6 units
- Any readings
  - 3.1- 4.0 units -2 units
  - < 3.0 mmol/l – 4 units

The Treat-to-Target Trial

Randomized addition of glargine or human NPH insulin to oral therapy of type 2 diabetic patients

MATTHEW C. RIDDLE, MD[1]
JULIO ROSENSTOCK, MD[2]
JOHN GERICH, MD[3]

ON BEHALF OF THE INSULIN GLARGINE 4002 STUDY INVESTIGATORS*

Type 2 diabetes is a progressive disorder of β-cell dysfunction. Patients using oral therapy for it seldom achieve and maintain the recommended

Table 1—*Forced weekly insulin titration schedule*

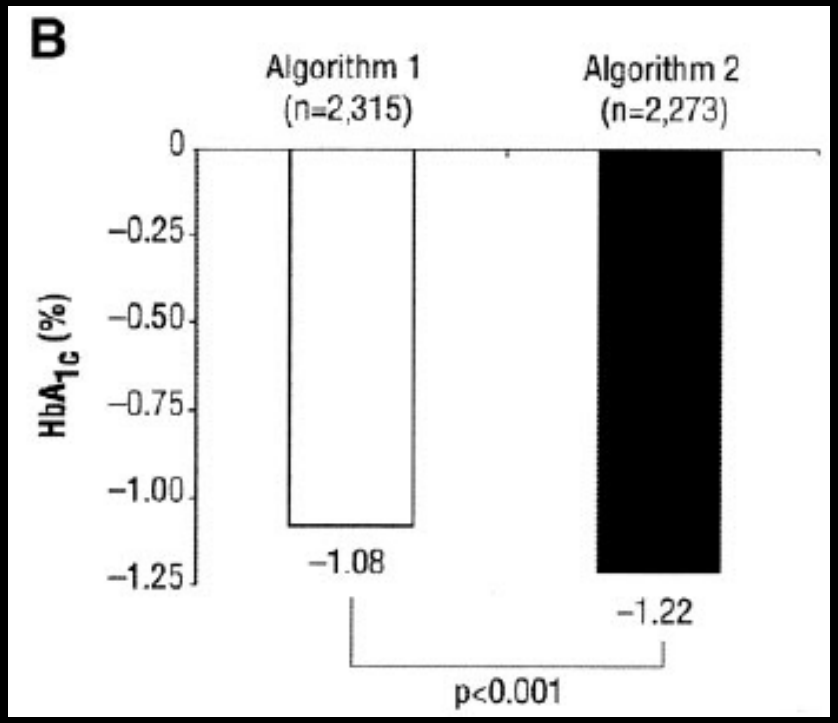
Start with 10 IU/day bedtime basal insulin and adjust weekly	
Mean of self-monitored FPG values from preceding 2 days	Increase of insulin dosage (IU/day)
≥180 mg/dl (10 mmol/l)	8
140–180 mg/dl (7.8–10.0 mmol/l)	6
120–140 mg/dl (6.7–7.8 mmol/l)	4
100–120 mg/dl (5.6–6.7 mmol/l)	2

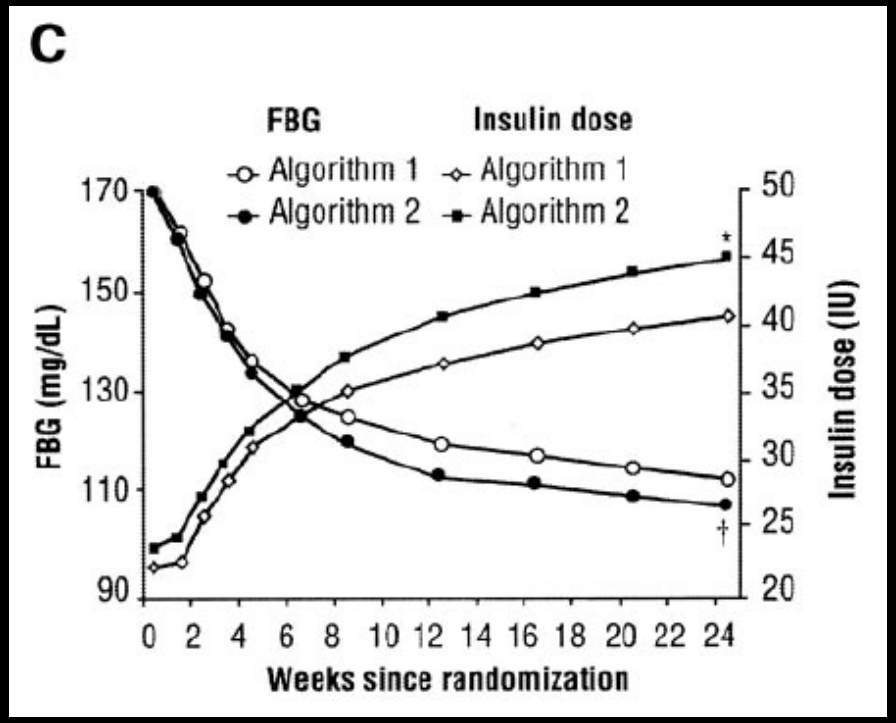
At LANTUS study

- Mean FBG past 3 days
- 5.5 – 6.7 → 0-2 unit change
- 6.7 – 7.8 → + 2 units
- 7.8 – 10.0 → + 4 units
- > 10.1 → 6 – 8 units

- Algorithm 1 – titration at every visit – managed by physician
- Algorithm 2 → self-titration every 3 days.

At Lantus study results

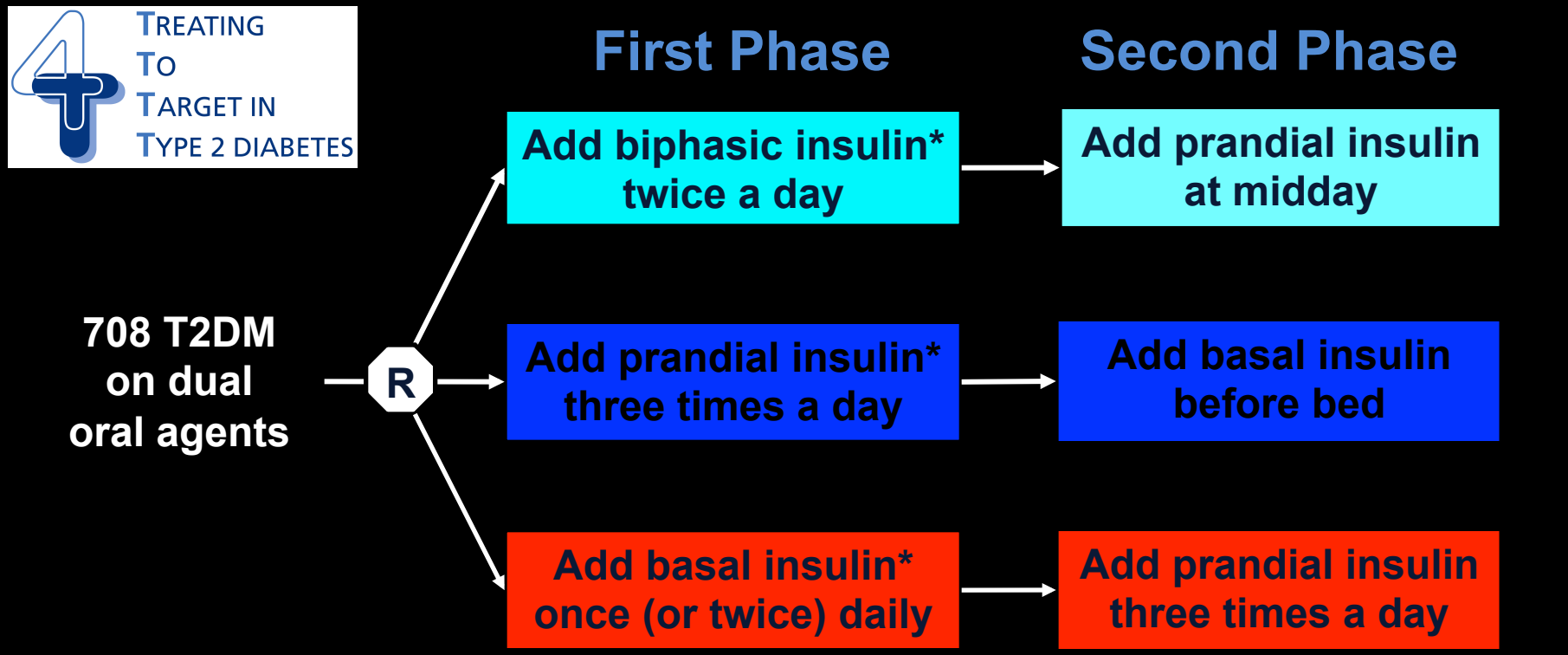




Algorithm 1 – physician led
Algorithm 2 – patient led

Transition to a Complex Insulin Regimen

From one year onwards, if HbA_{1c} levels were >6.5%, sulfonylurea therapy was stopped and a second type of insulin was added



* *Intensify to a complex insulin regimen in year one if unacceptable hyperglycaemia*

Starting Doses for Second Type of Insulin

Biphasic group

- Add midday prandial insulin
  - 10% of current total daily biphasic insulin dose (limited to 4-6 units)

Prandial group

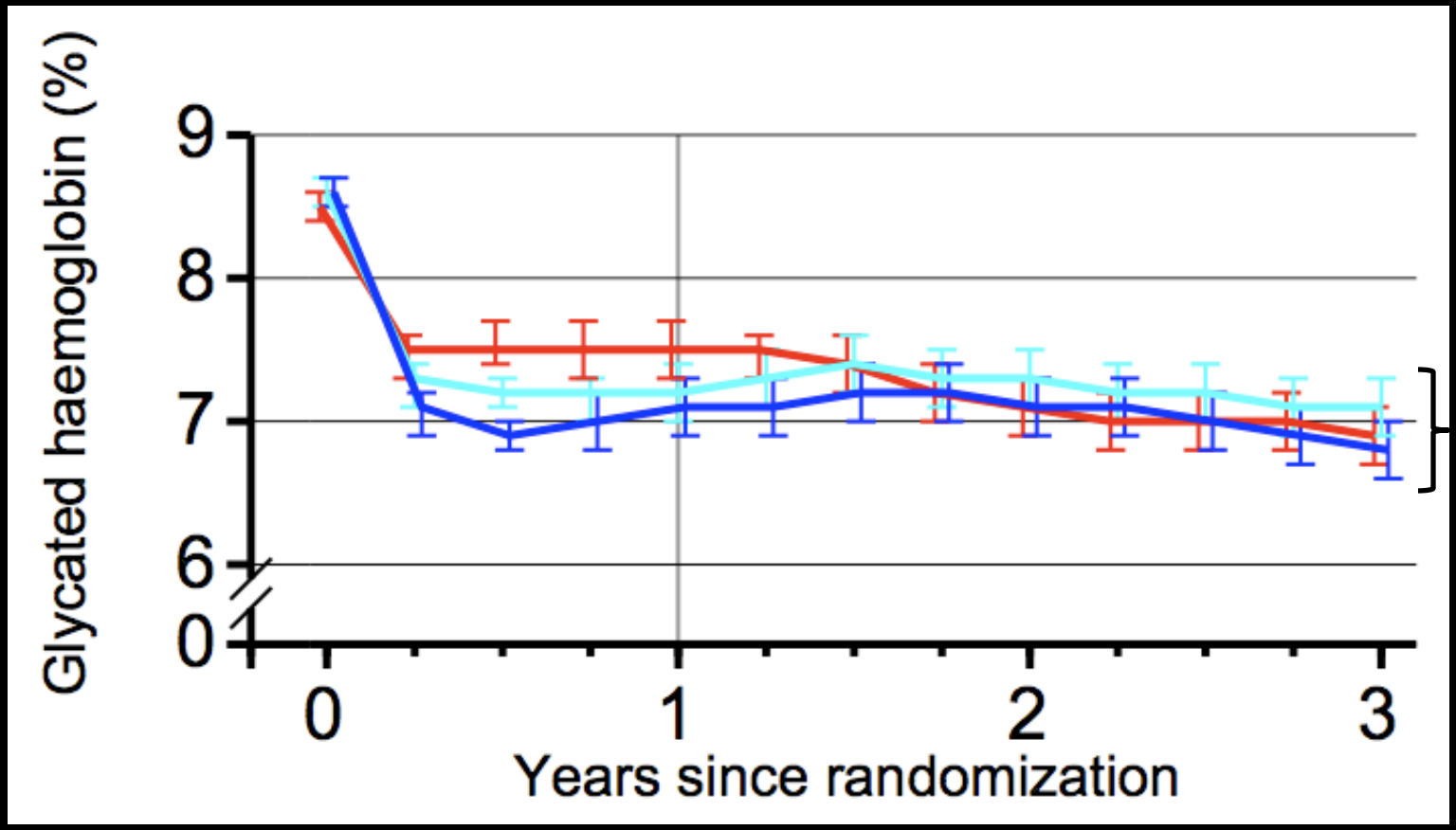
- Add basal insulin at bedtime
  - 10 units

Basal group

- Add prandial insulin at breakfast, lunch and dinner
  - 10% of current total daily basal insulin dose at each time point (limited to 4-6 units)

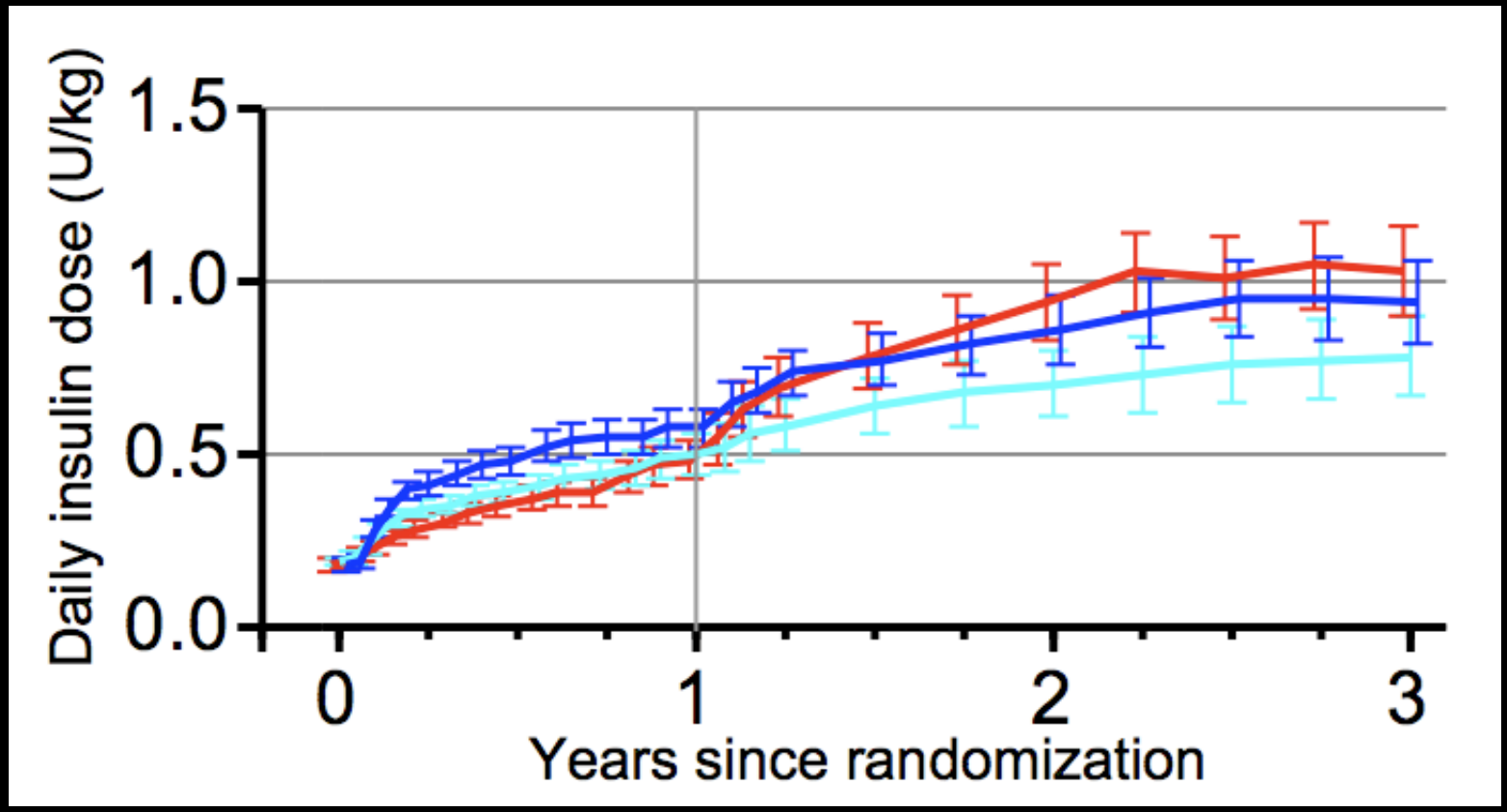
HbA_{1c} Values Over 3 Years

Median±95% confidence interval

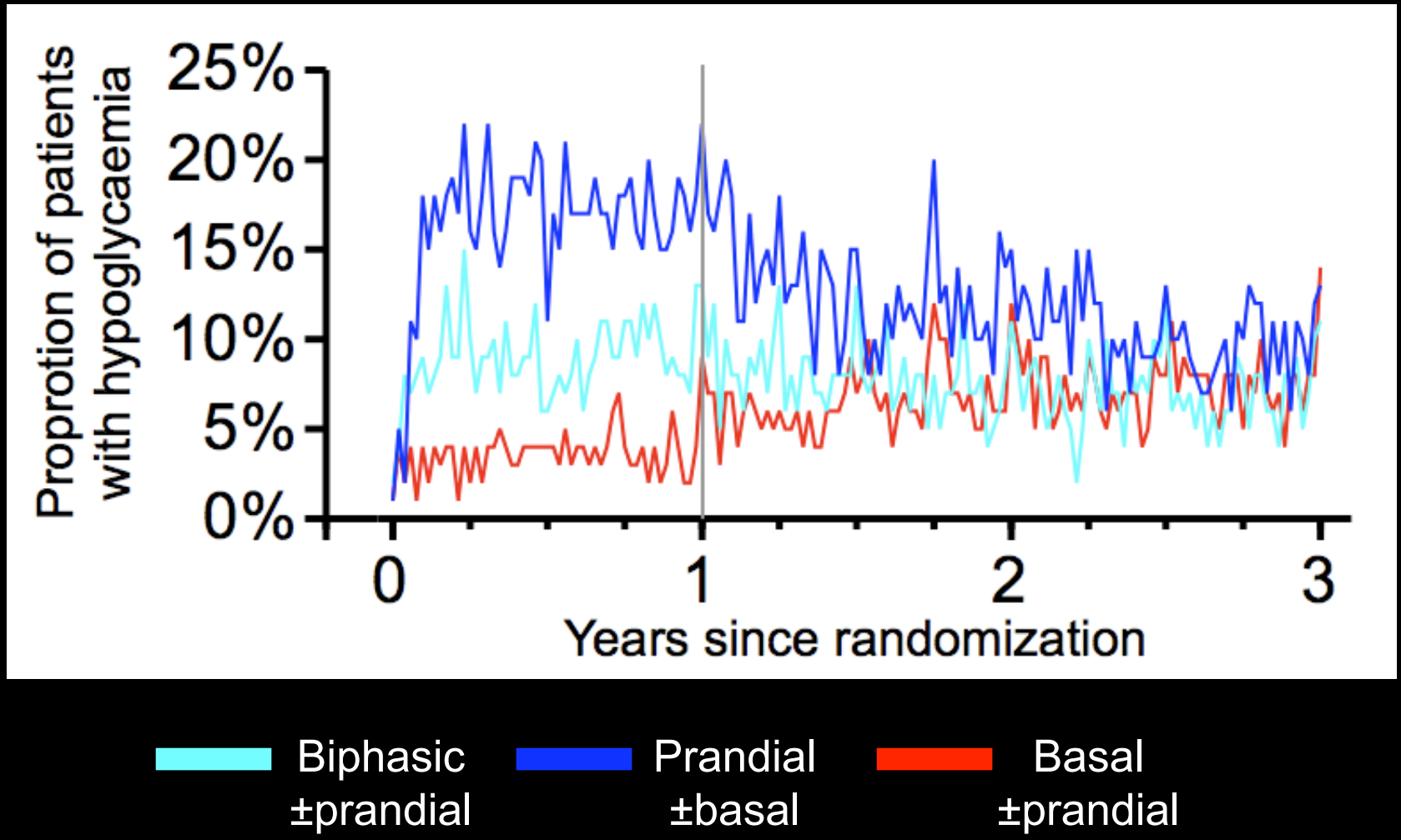


Insulin Doses Over 3 Years

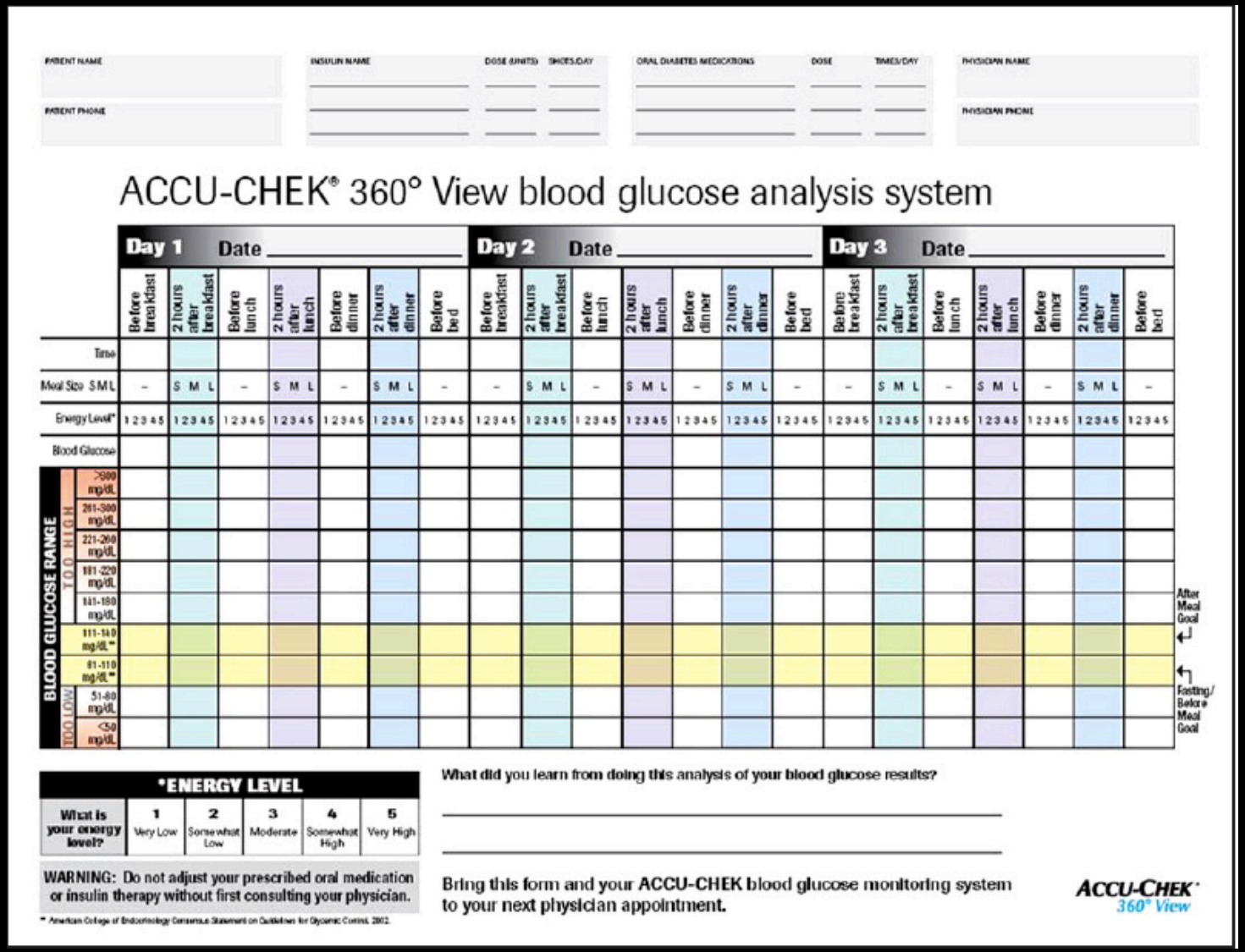
Median±95% confidence interval



Grade 2 or 3 Hypoglycaemia Over 3 Years



Structured testing



PATIENT NAME | PATIENT PHONE | INSULIN NAME | DOSE (UNITS) | SHOTS/DAY | ORAL DIABETES MEDICATIONS | DOSE | TIMES/DAY | PHYSICIAN NAME | PHYSICIAN PHONE

ACCU-CHEK® 360° View blood glucose analysis system

	Day 1 Date							Day 2 Date							Day 3 Date						
	Before breakfast	2 hours after breakfast	Before lunch	2 hours after lunch	Before dinner	2 hours after dinner	Before bed	Before breakfast	2 hours after breakfast	Before lunch	2 hours after lunch	Before dinner	2 hours after dinner	Before bed	Before breakfast	2 hours after breakfast	Before lunch	2 hours after lunch	Before dinner	2 hours after dinner	Before bed
Time																					
Meal Size S M L	–	S M L	–	S M L	–	S M L	–	–	S M L	–	S M L	–	S M L	–	–	S M L	–	S M L	–	S M L	–
Energy Level*	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Blood Glucose																					
BLOOD GLUCOSE RANGE TOO HIGH >300 mg/dL																					
261-300 mg/dL																					
221-260 mg/dL																					
181-220 mg/dL																					
141-180 mg/dL																					
111-140 mg/dL**																					
81-110 mg/dL**																					
TOO LOW 51-80 mg/dL																					
<50 mg/dL																					

After Meal Goal

Fasting/ Before Meal Goal

*ENERGY LEVEL					
What is your energy level?	1 Very Low	2 Somewhat Low	3 Moderate	4 Somewhat High	5 Very High

WARNING: Do not adjust your prescribed oral medication or insulin therapy without first consulting your physician.

** American College of Endocrinology Consensus Statement on Guidelines for Glycemic Control, 2002.

What did you learn from doing this analysis of your blood glucose results?

Bring this form and your ACCU-CHEK blood glucose monitoring system to your next physician appointment.

ACCU-CHEK® 360° View

Self-monitoring of blood glucose in patients with type 2 diabetes mellitus who are not using insulin (Review)

Malanda UL, Welschen LMC, Riphagen II, Dekker JM, Nijpels G, Bot SDM

THE COCHRANE COLLABORATION®

This is a reprint of a Cochrane review, prepared and maintained by The Cochrane Collaboration and published in *The Cochrane Library* 2012, Issue 1

http://www.thecochranelibrary.com

WILEY

EFFEC OF SMBG ON NON-INSULTIN TREATED T2

Figure 4. Forest plot of comparison: 1 SMBG (self-monitoring of blood glucose) vs control (6 months follow-up), outcome: 1.1 HbA1c [%].

Study or Subgroup	SMBG Mean [%]	SMBG SD [%]	SMBG Total	Control Mean [%]	Control SD [%]	Control Total	Weight	Mean Difference IV, Random, 95% CI [%]
Barnett 2008	-1.15	1.14	311	-0.91	1.29	299	22.0%	-0.24 [-0.43, -0.05]
Davidson 2005	-0.8	1.6	43	-0.6	2.1	45	2.6%	-0.20 [-0.98, 0.58]
DiGEM trial 2007 (1)	-0.15	0.81	301	-0.08	0.73	152	27.7%	-0.07 [-0.22, 0.08]
Fontbonne 1989	-0.36	3.14	68	-0.5	1.54	68	2.3%	0.14 [-0.69, 0.97]
Franciosi 2011	-1.2	0.81	46	-0.7	0.7	16	7.9%	-0.50 [-0.92, -0.08]
Guerci 2003	-0.9	1.54	345	-0.5	1.54	344	18.3%	-0.40 [-0.63, -0.17]
Kleefstra 2010	-0.18	0.67	22	0.07	0.75	18	7.0%	-0.25 [-0.70, 0.20]
Muchmore 1994	-1.54	1.46	12	-0.85	1.87	11	0.9%	-0.69 [-2.07, 0.69]
SMBG study group 2002	-1	1.08	113	-0.54	1.41	110	11.3%	-0.46 [-0.79, -0.13]
Total (95% CI)			**1261**			**1063**	**100.0%**	**-0.26 [-0.39, -0.13]**

Heterogeneity: Tau² = 0.01; Chi² = 11.29, df = 8 (P = 0.19); I² = 29%
Test for overall effect: Z = 3.99 (P < 0.0001)

(1) Both intervention groups are combined

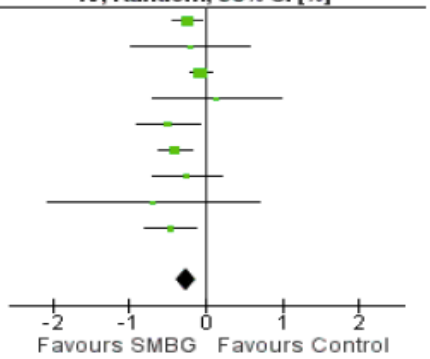
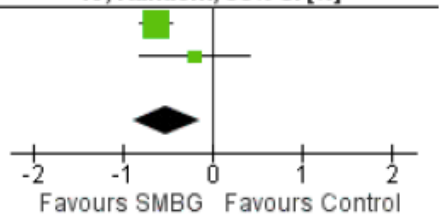


Figure 6. Forest plot of comparison: 4 SMBG (self-monitoring of blood glucose) vs control (newly diagnosed patients, 12 months follow-up), outcome: 4.1 HbA1c [%].

Study or Subgroup	SMBG Mean [%]	SMBG SD [%]	SMBG Total	Control Mean [%]	Control SD [%]	Control Total	Weight	Mean Difference IV, Random, 95% CI [%]
Durán 2010	-0.56	0.52	99	0.07	0.6	62	73.3%	-0.63 [-0.81, -0.45]
O'Kane 2008	-1.88	2.06	96	-1.68	2.11	88	26.7%	-0.20 [-0.80, 0.40]
Total (95% CI)			**195**			**150**	**100.0%**	**-0.52 [-0.89, -0.14]**

Heterogeneity: Tau² = 0.04; Chi² = 1.79, df = 1 (P = 0.18); I² = 44%
Test for overall effect: Z = 2.71 (P = 0.007)



Type 1 diabetes

Type 1 diabetes

- Any injection without a BG reading is wrong
- Just a guess

- Picture of shooting blindfolded

Case

- Alex – 33 yr old with T1DM since age 15
- 2 young children, part time job
- Busy, overwhelmed
- HBA1c 10%
- Dosen't test

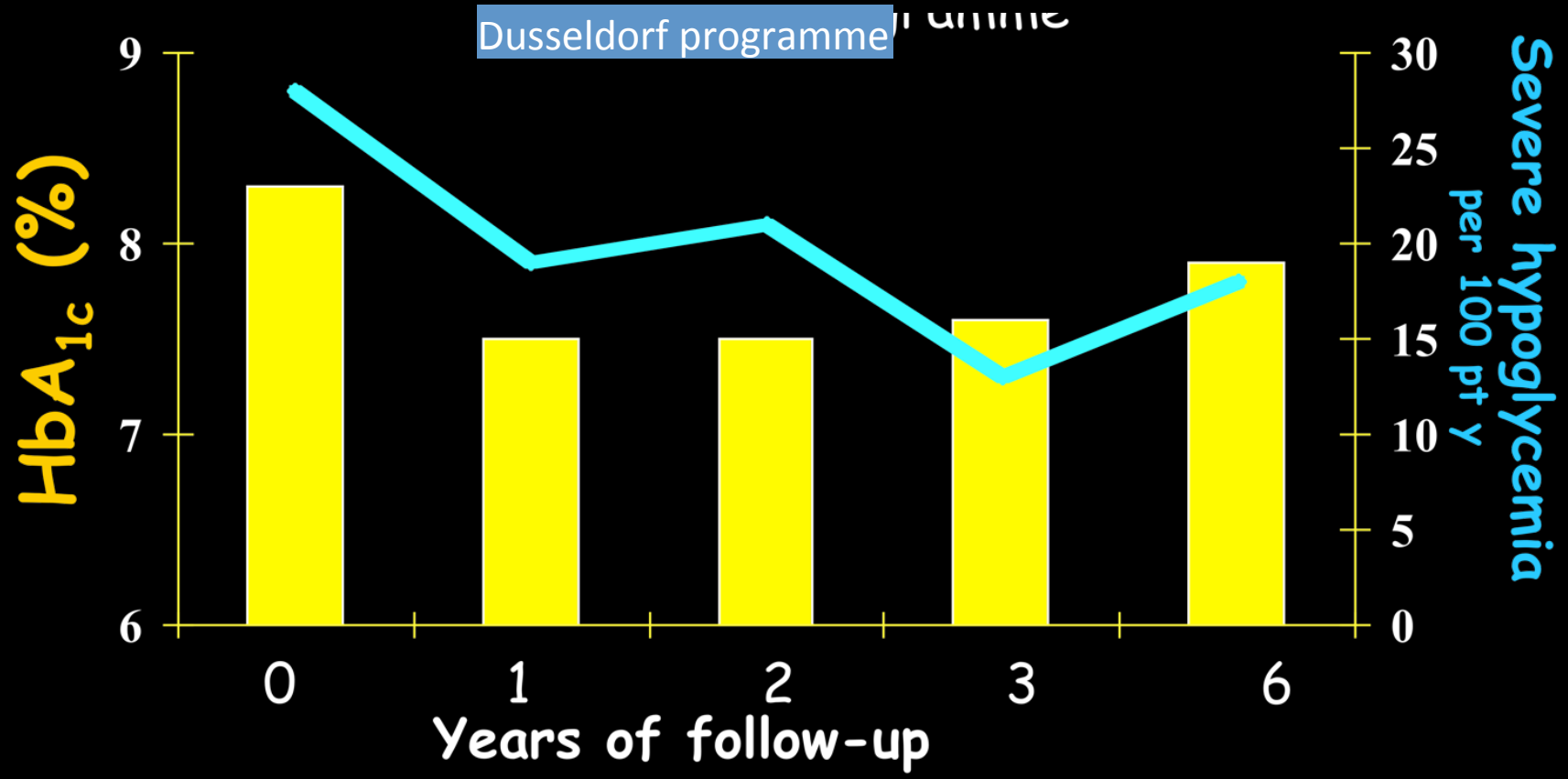
- We persuade her to start testing and see her in 2 weeks

Visit 2

- She tested 4/day for a week and then stopped

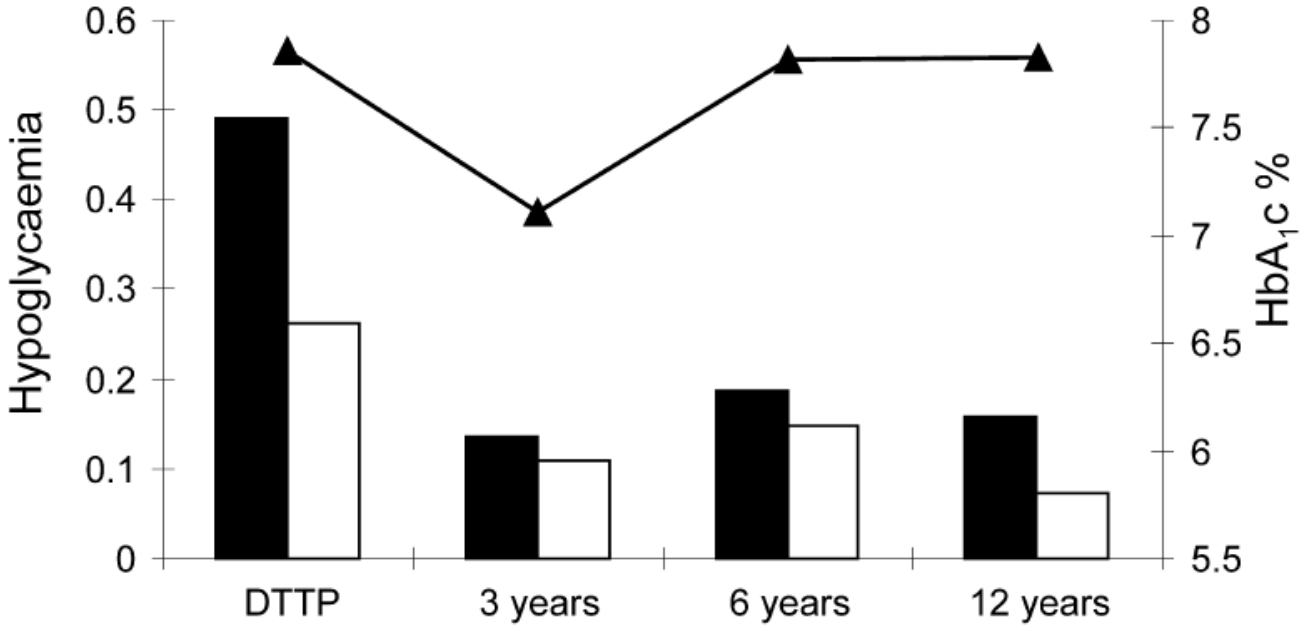
- All my readings were high
- I felt like a complete failure
- What's the point?

Patient education is the key

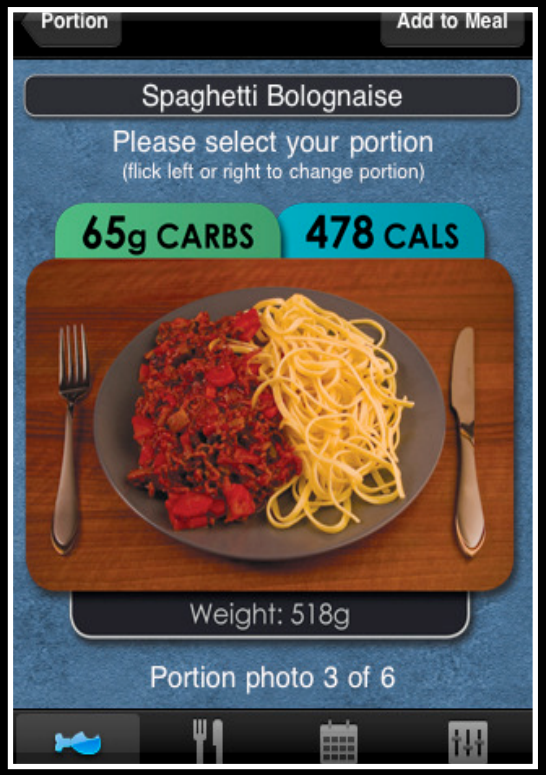


Long-term evaluation of a structured outpatient education programme for intensified insulin therapy in patients with Type 1 diabetes: a 12-year follow-up

J. Plank[1] · G. Köhler[1] · I. Rakovac[2] · B. M. Semlitsch[1] · K. Horvath[1] · G. Bock[1] · B. Kraly[1] · T. R. Pieber[1, 2]



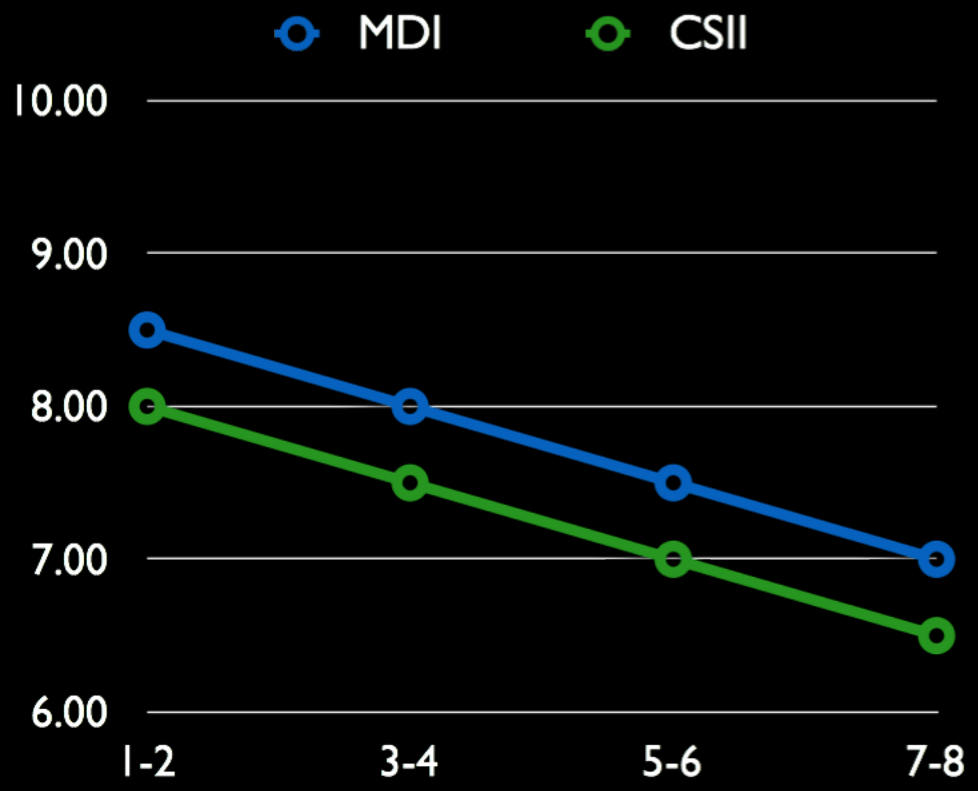
HbA_1c difference (95% CI) from baseline	–0.75 (–1.07, –0.43)	–0.04 (–0.38, 0.29)	–0.02 (–0.36, 0.3)
Severe hypoglycaemic episodes per patient per year RR (95% CI) from baseline	0.28 (0.15, 0.52)	0.38 (0.19, 0.76)	0.32 (0.14, 0.74)
Proportion of patients with severe hypoglycaemia OR (95% CI) from baseline	0.47 (0.23, 0.96)	0.67 (0.33, 1.34)	0.30 (0.14, 0.65)



- Insulin : Carb ratio 1 : 10 gms
- Correction factor = 50
- Current glucose = 200 mmol/l
- Meal insulin = 65 gms / 10 = 6.5 units
- Correction insulin = [200 - 100] /50 = 2 units
- Total dose = 6.5+2 = 8.5 units

How many strips are enough?

HbA1c



T1 diabetes exchange database; ATTD 2012

The concept of « *Health Numeracy* » and functional insulin therapy

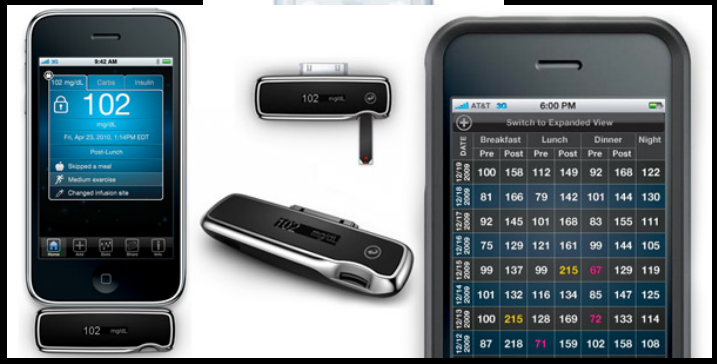
Wilkinson, G. S. *Wide Range Achievement Test-Revision 3.* Wilmington, DE: Jastak Association, 1993

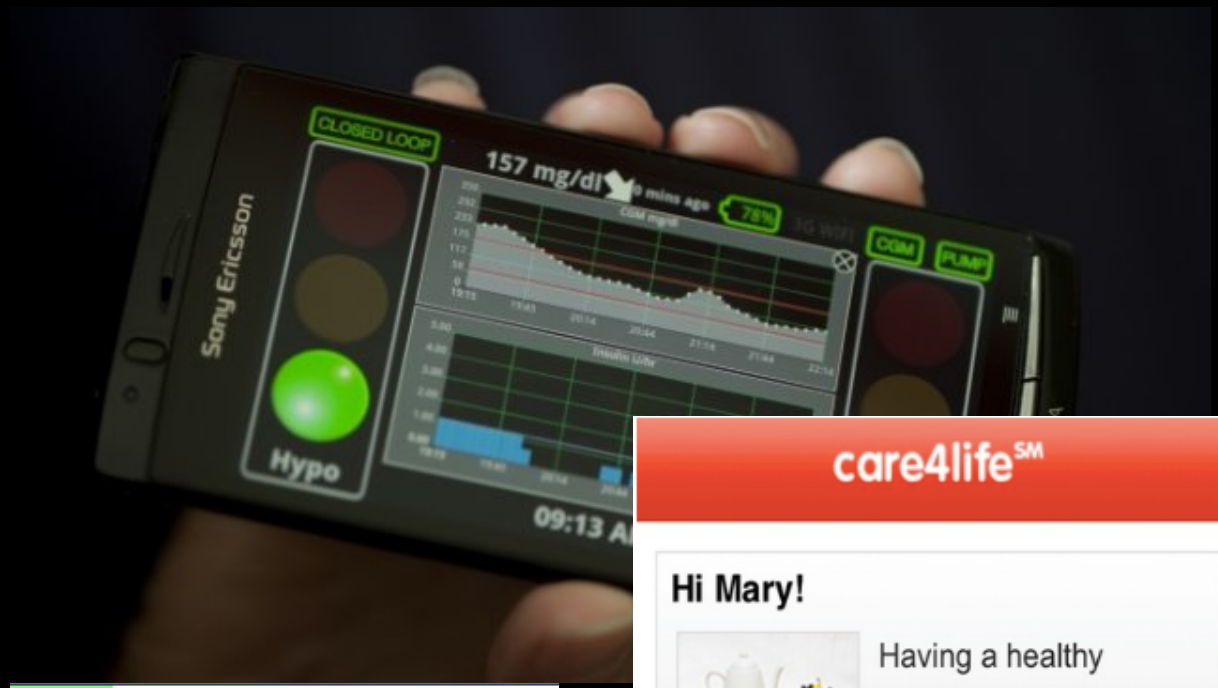
	Numeracy Level	
	<9th Grade (*n* = 276)	≥9th Grade (*n* = 122)†
Glucose monitoring		
3. Identify values within target range of 60–120 mg/dL (3.33–6.66 mmol/L).	67	88
4. Calculate date needed to refill strips.	50	89
Medications/insulin		
5. Mark 54 units on a 100-unit syringe.	56	90
6. Calculate insulin needed for carbohydrate intake.	54	92
7. Titrate of oral hyperglycemic medication.	53	92
8. Interpret insulin correction scale table (i.e., sliding scale).	78	100
9. Calculate insulin dose, adjusted for blood glucose level and carbohydrate intake.	28	72
10. Understand titration instructions for long-acting insulin regimen.	25	68

Cavanaugh K et al., Association of numeracy and diabetes control. *Ann Intern Med.* 2008;148:737-746.

SMART METERS

- Bolus calculators
  attern recognition
- average glucose [HbA1c]
- data analysis - real time





10/25	**2.0 units Humalog** 1:30 PM After Lunch Notes: Lowering sugar from school…	
10/25	**165 mg/dL** 1:14 PM After Lunch Notes: Ate a bit too much.	
10/25	**10 grams Smoothie** 1:05 PM Lunch Notes: Small school smoothie.	
10/25	**30 mins Cycling** 9:18 AM Before Breakfast Notes: Ran 30mins with Mike.	
10/25	**10 grams Cereal** 8:15 AM Breakfast Notes: Regular cereal. Getting ready…	
10/25	**1.0 units Humalog** 8:07 AM Out Of Bed Notes: Trying out some new medicati…	

My Info | Logs | Graph | Settings | About

care4life℠

Hi Mary!

Having a healthy breakfast can lead to healthier choices all day long? Try it tomorrow!

Recent Readings

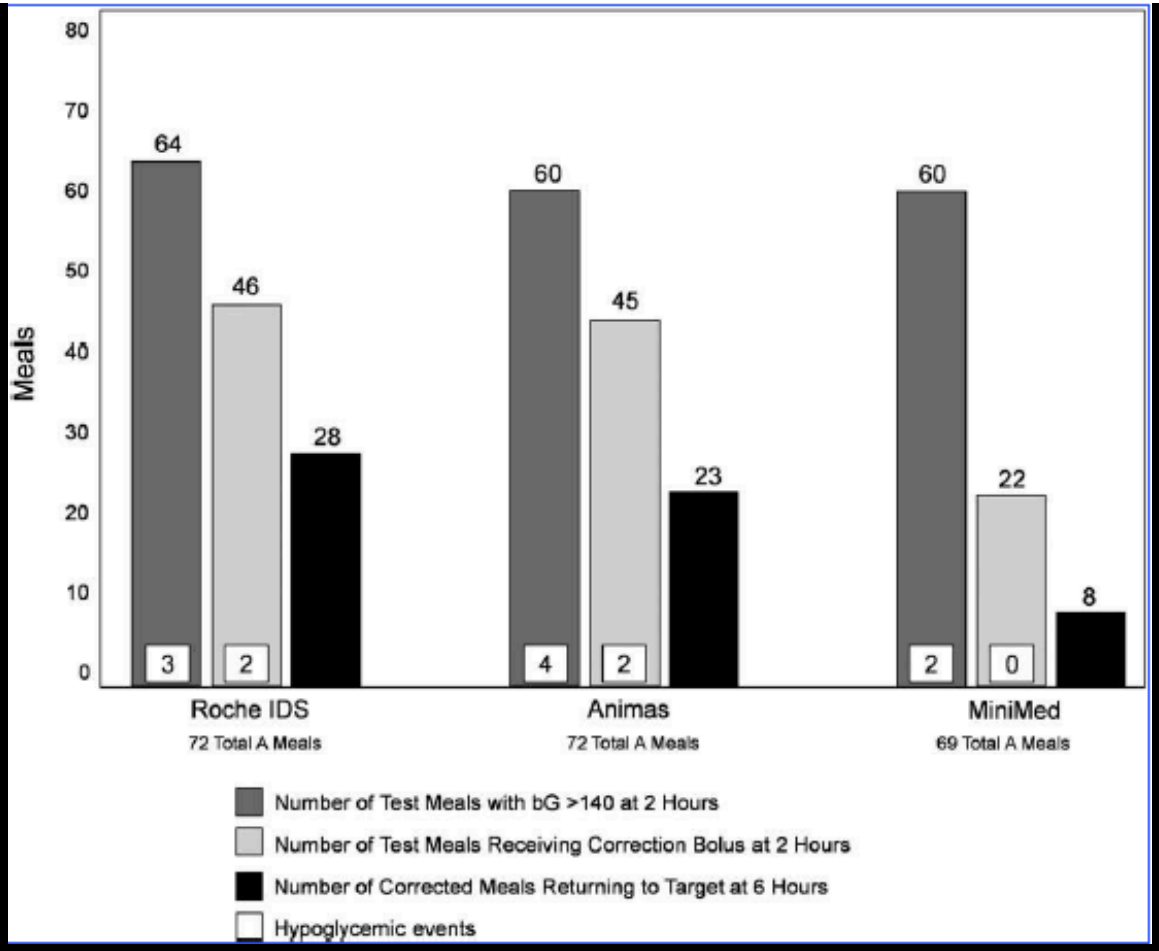
Avg. Glucose (Before meal)	102.0
Avg. Glucose (After meal)	189.0
Current Weight	145 lbs
Last Week Exercise	4 times

Glucose | Exercise | Weight | Medicine | More

DIABETES TECHNOLOGY & THERAPEUTICS
Volume 12, Number 12, 2010

DOI: 10.1089/dia.2010.0064

Clinical Performance of Three Bolus Calculators in Subjects with Type 1 Diabetes Mellitus: A Head-to-Head-to-Head Comparison



Welcome to Diasend – Diasend

www.diasend.com/en/

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Ovid PUBMED EndNote NHSmail BA IRAS Gmaps iGoogle cric Facebook Pratik work BBC SPORT PF1 telegrapg Personal YouTube icloud

Google | Welcome to Diasend – Diasend

diasend

Our service
What we do

Support
How it works

About us
What we value

UK - English

One solution – No fuss

Data management for
- Glucose meters
- Insulin pumps
- CGMs
- Mobile apps
- ▶ EMR integration

Recent Updates

We believe in easy communication

diasend® is a standalone system for easy uploading of information from most glucose meters, insulin pumps, CGMs and mobile apps. The diasend® System consolidates and presents your information in clear and structured reports, no matter what the device or how the data is stored. This means patients and health care providers are easily able to share, access and understand information by using diasend®.

Username
ani-testuk ?

Password
••••••••••• ?

Log in

Register here

Forgot your password?
Win 8 compatibility notice

Information from insulin pump is available from the period: 01/01/2013 - 22/05/2014

Glucose | CGM | Insulin | Comparison | Compilation

Period: 09/05/2014 - 22/05/2014, 14 days Select time interval

Include manually entered records

Print to PDF

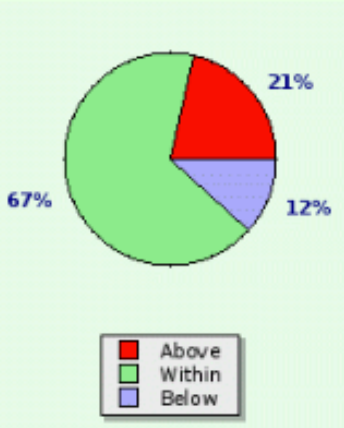
Glucose		CGM	
Average		Average	
7.8		0	
mmol/L		mmol/L	
SD = 3.4	# = 94	SD = 0	# = 0
Avg # / day = 6.7		Avg # / day = 0	

Insulin		Carbs	
Average daily dose		Average carbs / day	
22.2 U		0 g	
SD = 4	# days = 14	SD = 0	# = 0
Avg # bolus doses/day = 3.9		Avg # / day = 0	

Glucose (mmol/L)

Glucose values summary	
Average (mmol/L)	7.8
Median (mmol/L)	7.4
Highest value (mmol/L)	18.3
Lowest value (mmol/L)	3.1
Standard deviation (SD)	3.4
Values per day	6.7
Number of values	94
Values above goal (10 mmol/L)	20
Values within goal (4-10 mmol/L)	63
Values below goal (4 mmol/L)	11

Interval	Avg BG	# BG	SD
00:00-06:00	6.4	8	3.2
06:00-08:00	8	9	3.4
08:00-10:00	7.6	14	2.3
10:00-12:00	7.1	8	4.4
12:00-14:00	6.4	18	1.8
14:00-16:00	7.2	4	2.6
16:00-18:00	7.9	11	3
18:00-20:00	6.6	7	3.3
20:00-22:00	11.4	14	3.5
22:00-24:00	7.1	1	0



Glucose: Table

	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
Wed 27/10		2.5							4.9		14.2			7.4		5.1			9.4			19.3		
Thu 28/10	11.2						8.9			13.7		7.8		1.6		4.0			7.1	5.8	6.5		6.6	
Fri 29/10								12.1			14.4		10.7			12.2	8.3	3.7					9.5	
Sat 30/10		2.9							5.4			18.6	8.4		5.4			9.6			5.9			4.2
Sun 31/10									6.7			15.7		6.5	8.4		3.7		3.0		7.2		9.0	
Mon 1/11			11.4						10.8		7.4			8.3	8.4	9.9		7.7				6.1		6.5
Tue 2/11		8.7						2.7			10.3			9.2	6.9			5.4						2.6
Wed 3/11		12.0								10.0		7.6	8.0		7.3	6.5						4.9		5.2
Thu 4/11		8.7								13.8				9.6	4.2		6.0					3.6		
Fri 5/11	16.2		10.9							5.0		3.4		4.7		6.9					3.3			3.1
Sat 6/11			6.1						7.5				8.2		2.8		3.1			5.4			4.7	3.0
Sun 7/11		4.7								3.9		3.7			7.3		4.4			14.9		6.8		7.4
Mon 8/11									5.9			14.7		11.3	11.2		7.7				6.6		10.7	
Tue 9/11			4.6						4.2		11.6		13.1	14.9	7.1	7.3		3.7				8.1	10.9	
Wed 10/11	6.3	3.1		5.9					3.2		2.5			5.6		16.2	4.2		2.4		8.1		5.6	
Thu 11/11			5.1							10.5		16.5	3.2			7.1						3.6	7.8	11.4
Fri 12/11			4.2						10.2		7.2					4.8		7.8	9.4					
																			7.7					
Sat 13/11	21.2		12.4						11.7				11.9			7.6			5.1					
Sun 14/11				9.5					4.0				12.4			5.0		4.9			6.5		3.6	
Mon 15/11		5.8							3.4		2.7					7.9		4.2			4.3	7.7	4.4	4.1
Tue 16/11							9.7			11.0			6.6	6.4	5.9				4.9		7.3		3.2	
Wed 17/11									8.9			2.3		9.2		12.4		15.3				5.0	3.9	
Thu 18/11	4.5								6.5		7.7		7.6		11.1	7.1		3.4			3.2	2.5	2.4	
Fri 19/11		7.2								4.7		5.0	5.4		8.0		4.4			2.4				2.4
Sat 20/11	4.4								3.2	4.2		7.8		3.2		4.3		6.2		9.7			6.9	4.4
Sun 21/11									4.6							6.2						21.8		12.9
Mon 22/11	11.1			9.2		7.3				6.3		7.6	3.8			14.9		20.1				8.2		
Tue 23/11		10.5								6.4		11.9		3.5		6.6						7.2		15.3
Wed 24/11		15.0								9.6	23.8	15.0		5.1		8.6		2.6				7.1	9.5	4.5
Thu 25/11				2.7						3.5		4.1		4.3	3.8									
														2.1	8.2									

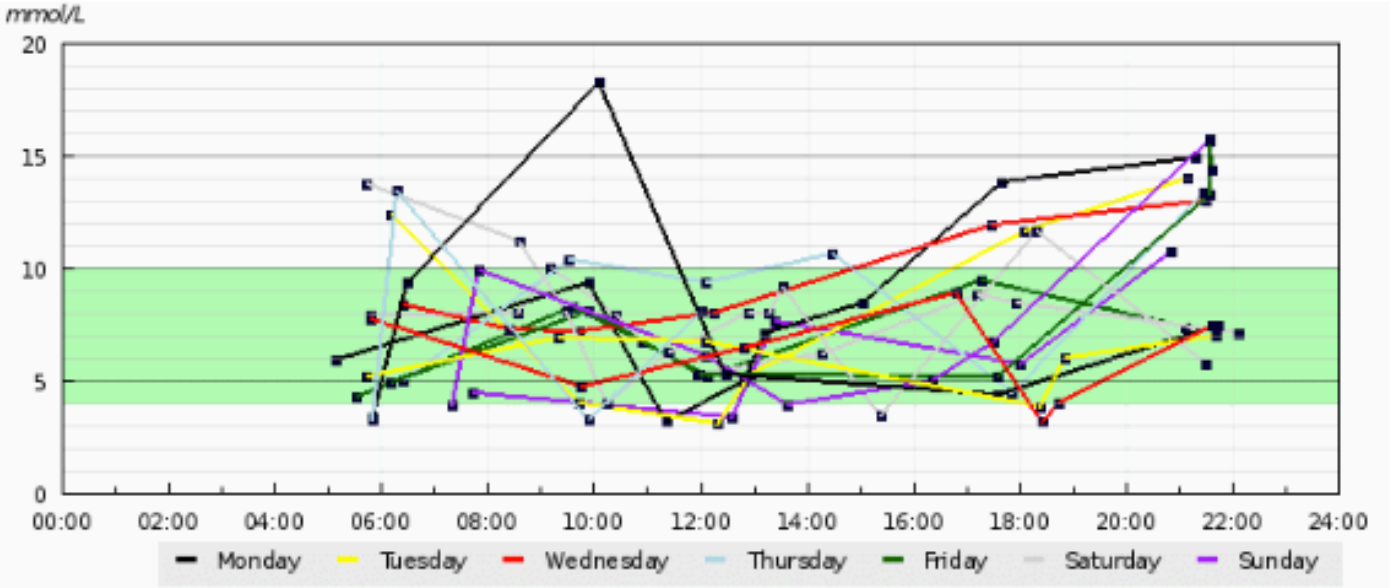
Glucose | CGM | Insulin | Comparison | Compilation

Logbook/table | Standard day | Trend | Day by day | Meter alarms | Meter settings

Period: 09/05/2014 - 22/05/2014, 14 days Select time interval

☑ Include manually entered records

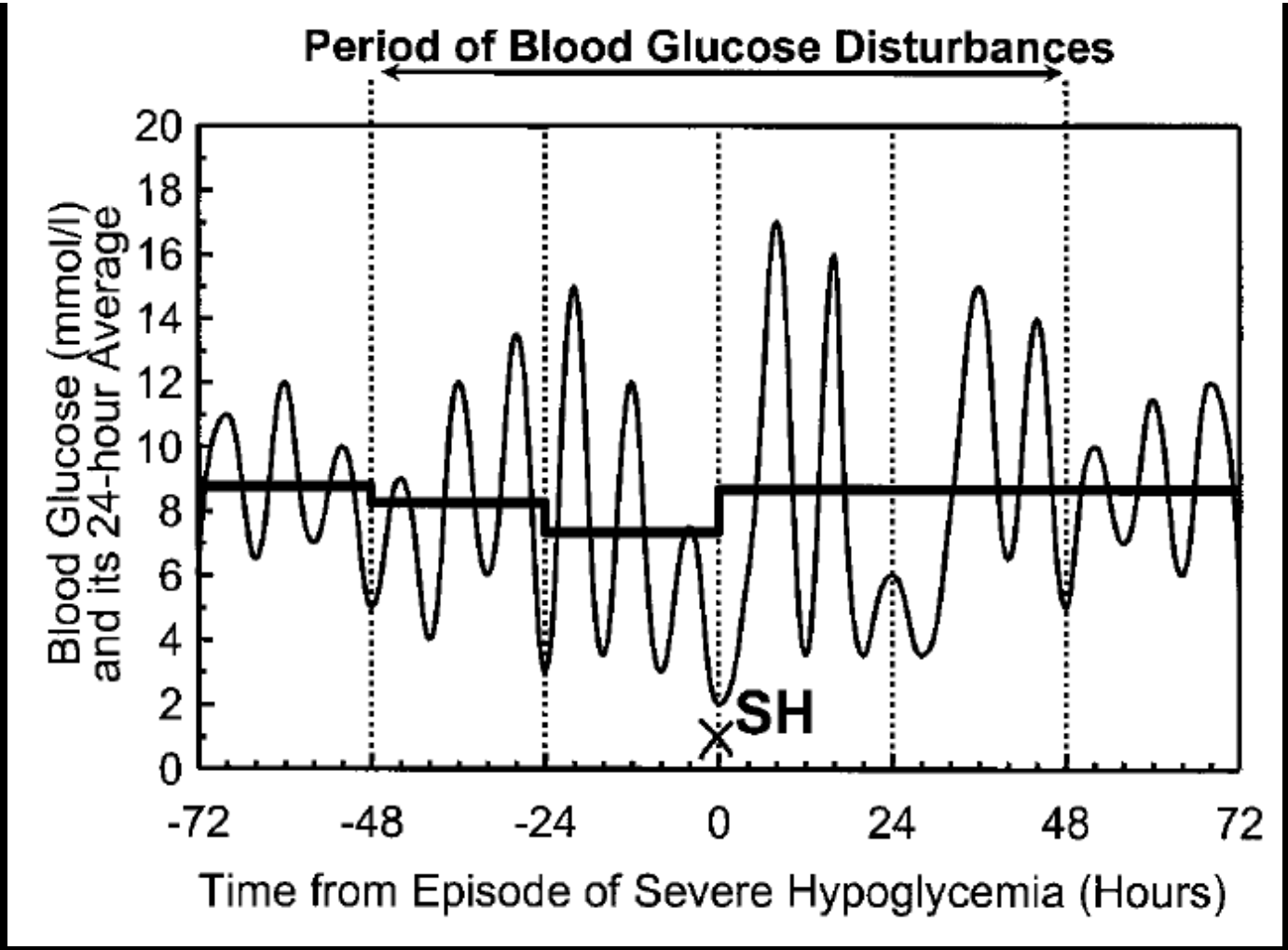
Noon-to-noon/midnight-to-midnight Show/hide lines Show/hide mean value Print to PDF



Number of values: **94**	Values above goal (10 mmol/L): **20**	Highest value (mmol/L): **18.3**	(19/05/2014 10:05)
Values per day: **6.7**	Values within goal (4-10 mmol/L): **63**	Lowest value (mmol/L): **3.1**	(13/05/2014 12:19)
Period average (mmol/L): **7.8**	Values below goal (4 mmol/L): **11**	Standard deviation: **3.4**	

Episodes of Severe Hypoglycemia in Type 1 Diabetes Are Preceded and Followed within 48 Hours by Measurable Disturbances in Blood Glucose*

BORIS P. KOVATCHEV, DANIEL J. COX, LEON S. FARHY, MARTIN STRAUME, LINDA GONDER-FREDERICK, AND WILLIAM L. CLARKE

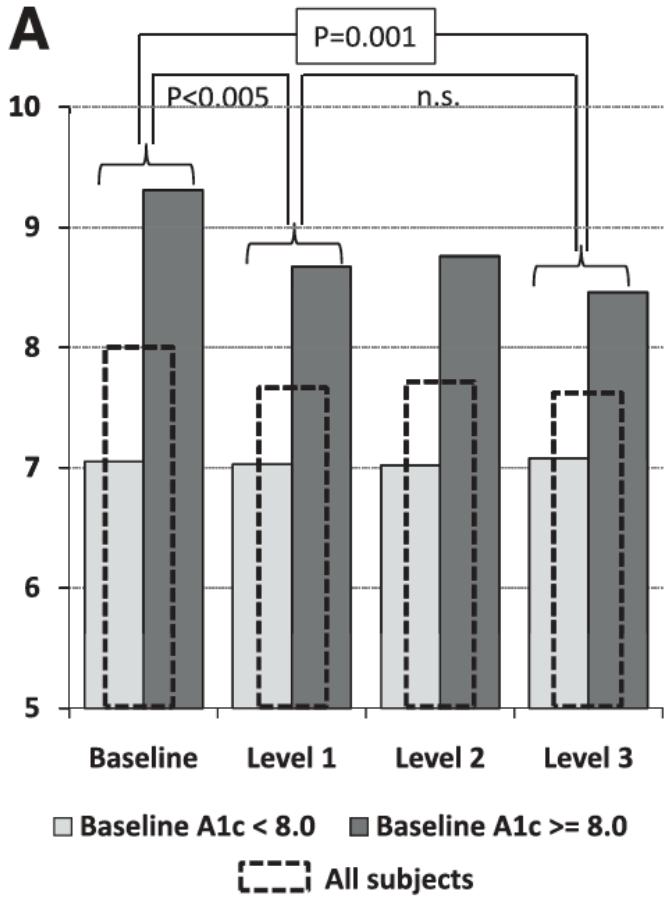


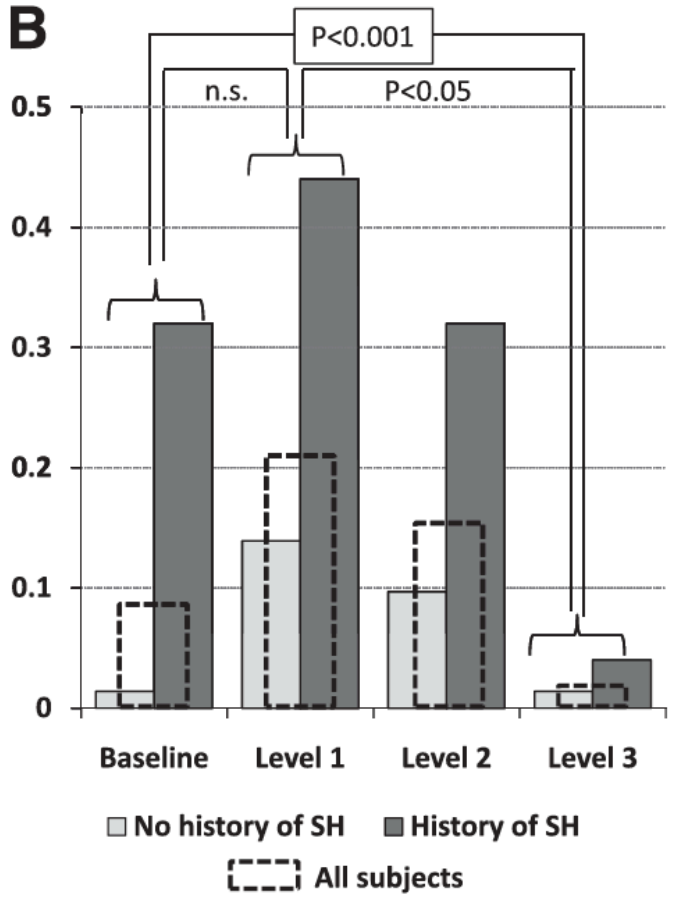
Effect of Automated Bio-Behavioral Feedback on the Control of Type 1 Diabetes

Boris P. Kovatchev, phd[1]
Pamela Mendosa, rn[1]
Stacey Anderson, md[2]
Jeffrey S. Hawley, bs[1]
Lee M. Ritterband, phd[1]
Linda Gonder-Frederick, phd[1]

as self-monitoring of blood glucose (SMBG).

Most contemporary home SMBG de-





Barriers to testing

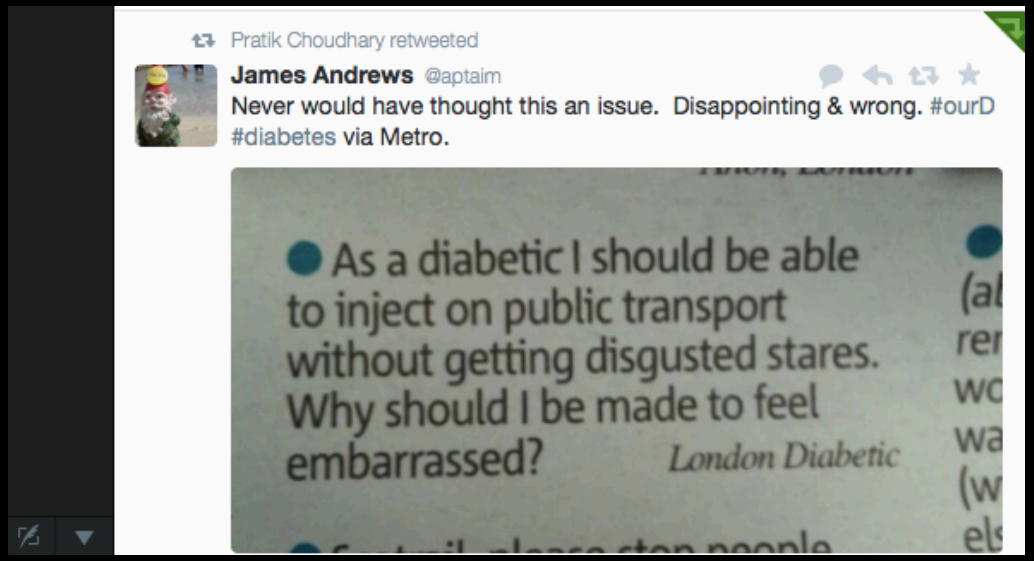
- Time to test
- Pain

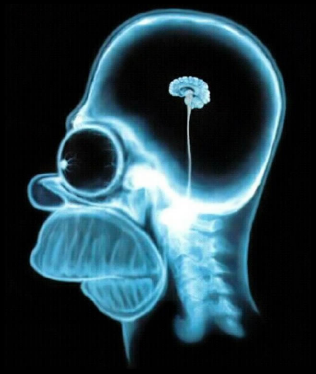
barriers to testing

knowledge

beliefs

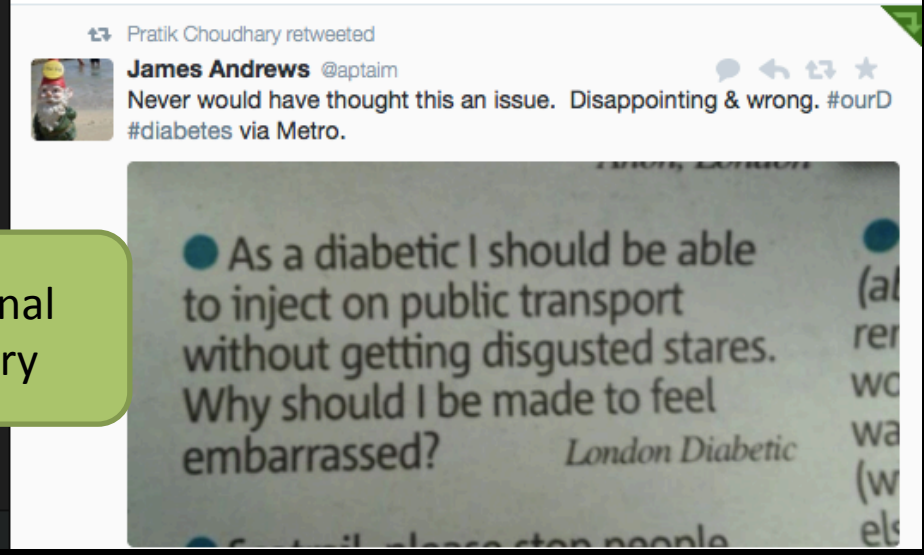
action





Emotional memory

Beliefs

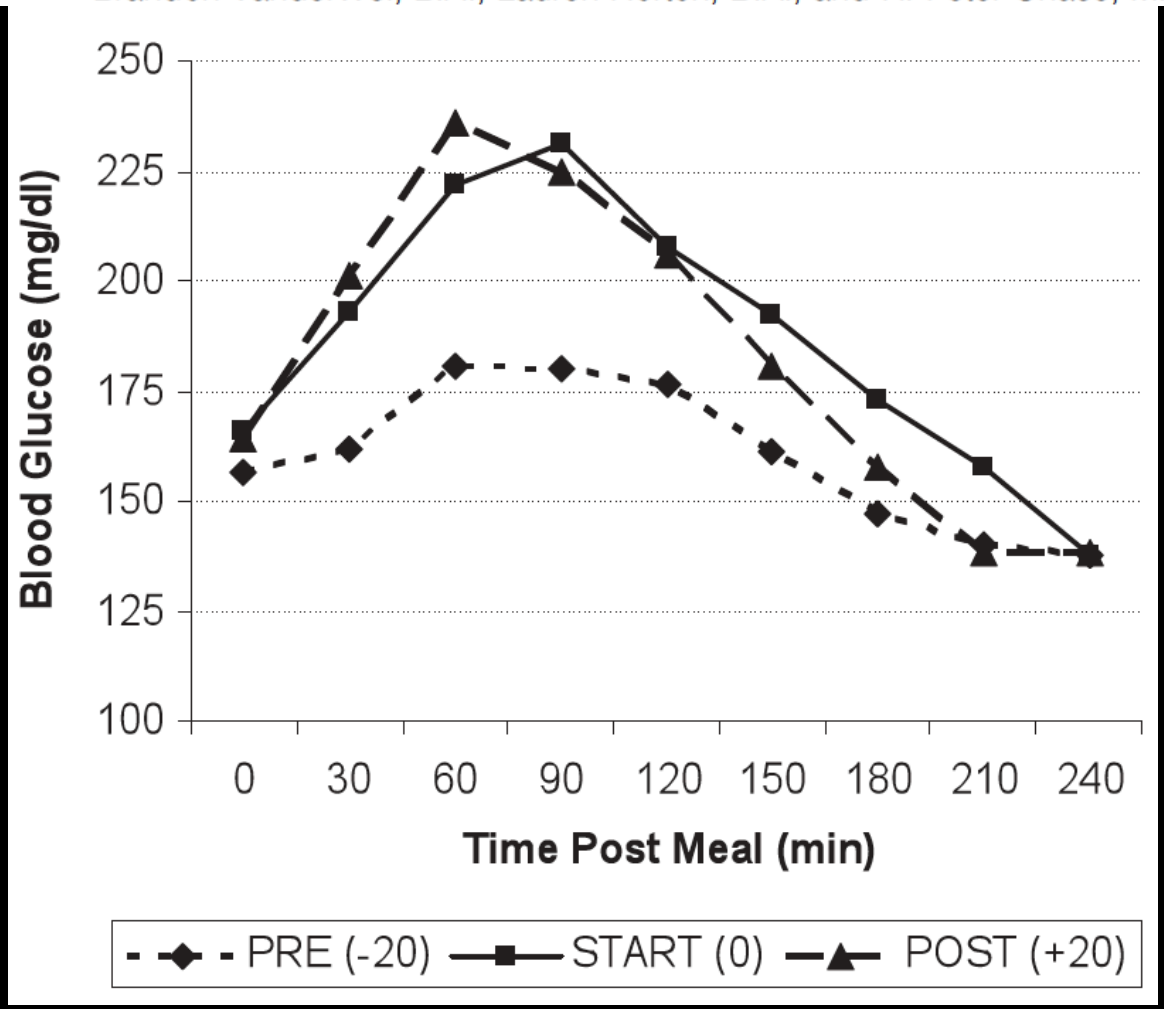


Knowledge

Action

Timing of Meal Insulin Boluses to Achieve Optimal Postprandial Glycemic Control in Patients with Type 1 Diabetes

Erin Cobry, B.S., Kim McFann, Ph.D., Laurel Messer, R.N., Victoria Gage, R.N., Brandon VanderWel, B.A., Lauren Horton, B.A., and H. Peter Chase, M.D.



Future

- Alternate site testing
- Flash monitroing

- Real time data collection
- Mapping to advice

Summary

- More tests = better control
- Need to make tests count
  - Knowledge
  - Better algorithms
  - Smart meters
- Need to make testing easier