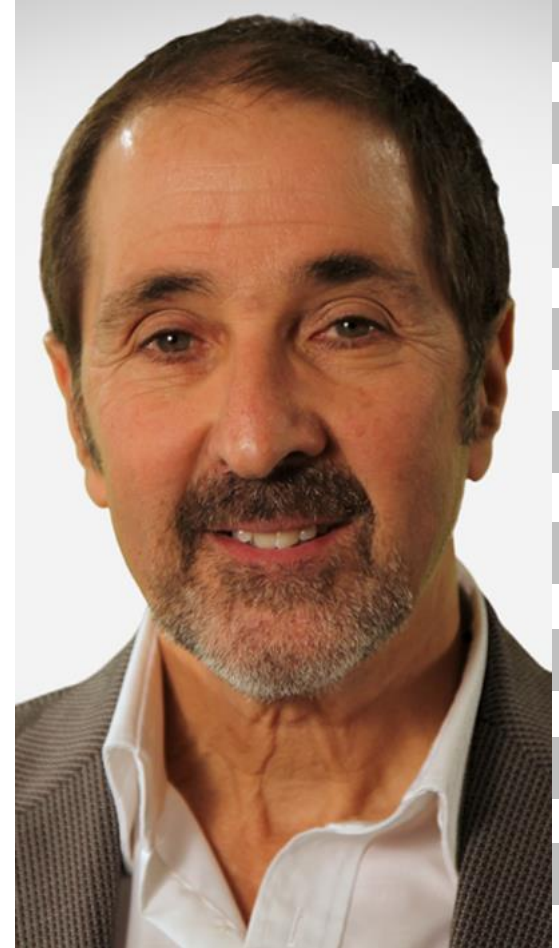


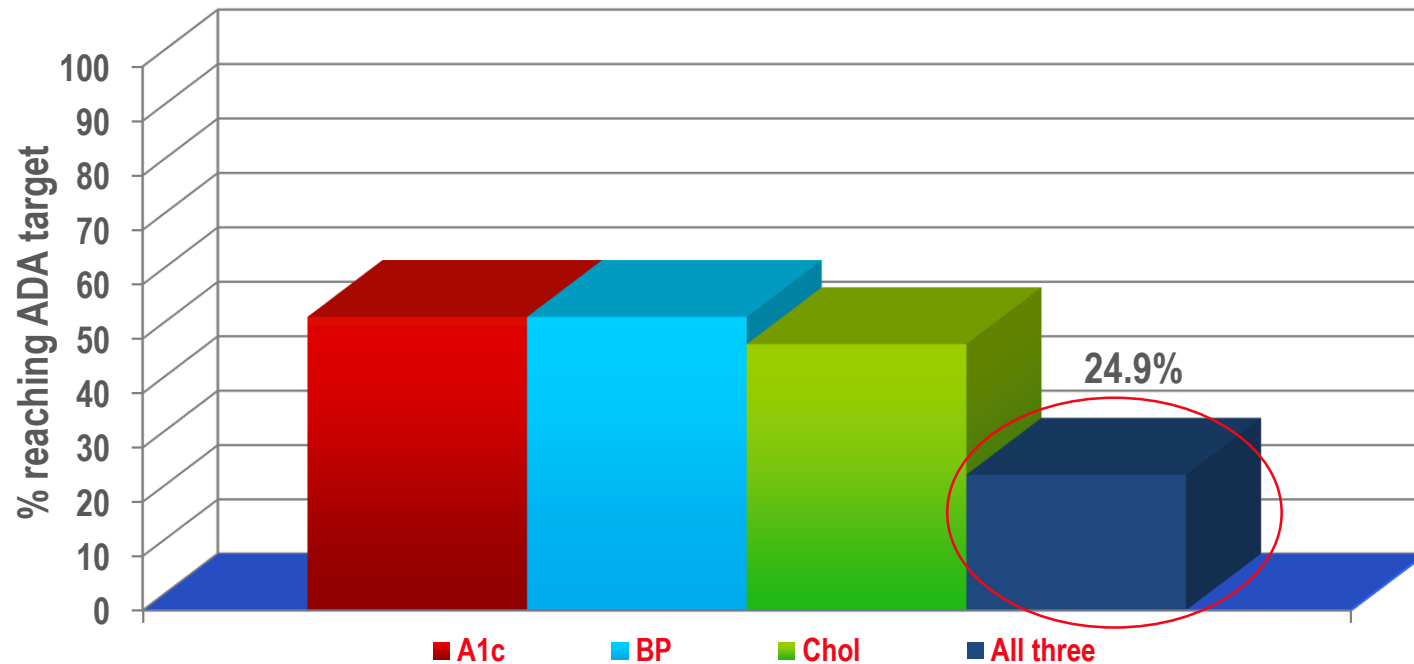
Engaging the Disengaged: Strategies for Promoting Behavior Change in Diabetes

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Percentage of Patients

Achieving ADA Treatment Targets



Wong et al., 2013

Behavioral Diabetes Institute's (BDI)

Three Operating Principles

1. Living with diabetes can be tough

- It is a time-consuming job

Russell et al, 2005

Task	Minutes/day
ADA recommendations	
Home glucose monitoring	3
Record keeping	5
Taking oral medication	4
Foot care	10
Oral hygiene, flossing	1
Problem solving	12
Meal planning	10
Shopping	17
Preparing meals	30
Exercise	30
ADA SUBTOTAL	122
Other desirable self-care	
Monitoring blood pressure	3
Stress management	10
Support group	2
Administrative tasks	
Phoning educators, doctors	1
Scheduling appointments	1
Insurance dealings	2
Obtaining supplies	2
TOTAL TIME	143

*Estimates for patients with stable diabetes who are taking oral agents and self-monitoring blood glucose once

BDI's Three Operating Principles

1. Living with diabetes can be tough
 - It is a time-consuming job
 - It is a balancing act that requires vigilance and an ability to deal with frustration



BDI's Three Operating Principles

1. Living with diabetes can be tough
2. The typical reasons why we think it's tough are wrong

Healthcare Professional (HCP) Attributions

Regarding Poor Adherence in Diabetes

HCP top 5 complaints:

1. Patients say they want to change, but are not willing to make the necessary changes
2. Not honest/only tells me what they think I want to hear
3. Don't listen to my advice
4. Diabetes not a priority/uninterested in their condition/"in denial"/don't care/unmotivated
5. They do not take responsibility for self-management

Edelman et al, 2012



BDI's Three Operating Principles

1. Living with diabetes can be tough
2. The typical reasons why we think it's tough are wrong
3. No one is unmotivated to live a long and healthy life

Motivation in Diabetes

- **If no one is unmotivated, then what's the problem?**
- **Obstacles to self-care outweigh possible benefits**
 - The benefit conundrum
 - And there are a TON of obstacles!
 - The underlying theme to most obstacles is a lack of “worthwhileness”

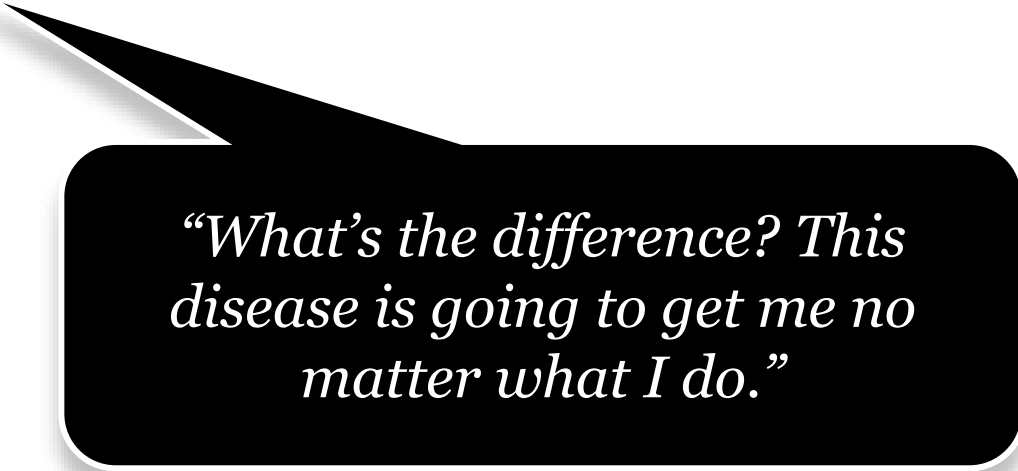
Lack of Worthwhileness

- An invisible and non-urgent disease

“Look, I’ll start worrying about my diabetes as soon as something something falls off.”

Lack of Worthwhileness

- An invisible and non-urgent disease
- **Hopelessness**



“What’s the difference? This disease is going to get me no matter what I do.”

Lack of Worthwhileness

- An invisible and non-urgent disease
- Hopelessness
- **Discouragement**

“I did everything I was supposed to, and now you’re telling me I have to take even more medications?!”



So What to Do?



A. Making the Invisible Visible

Step 1. A1C awareness

Table 2
Participants understanding of HbA1c.

Question	Yes
(1) Report having had an HbA1c test: <i>n</i> (%)	46 (55.4)
(2) Knew what HbA1c is and gave a correct definition: <i>n</i> (%)	44 (53.0)
(3) Reported their last HbA1c test result: <i>n</i> (%)	40 (48.2)
(4) Gave a correct HbA1c value: <i>n</i> (%)	22 (55.0)
(5) Good understanding of HbA1c (were aware of having an HbA1c test, could accurately report their most recent test result within 0.5% and could define HbA1c)	22 (26.5%)

Beard et al, 2010

Table 1 – Laboratory test results.

Variable	At admission	10 days after admission
Glucose, mg/dL	108	65
Hematocrit, %	38.5	21
Hemoglobin, g/dL	13.7	7.2
Leukocytes, mm ³	6,300	41,000
Platelets, mm ³	201,000	25,000
Creatinine, mg/dL	0.6	3.8
Urea, mg/dL	25	128
ALT, U/L	28	298
AST, U/L	56	65
Total protein, g/dL	7.4	4.6
Albumin, g/dL	3.7	1.8
GGT, U/L	34	536
Alkaline phosphatase, U/L	ND	7,960
LDH, U/L	234	ND
Total bilirubin, mg/dL	0.53	12.9
Direct bilirubin, mg/dL	0.23	9
Indirect bilirubin, mg/dL	0.35	3.9
PTT, s	28	ND
INR	0.7	1.3
Total cholesterol, mg/dL	242	ND
HDL, mg/dL	31	ND
LDL, mg/dL	141	ND
Triglycerides, mg/dL	202	ND
ESR, mm/h	ND	52
Calcium, mg/dL	8.8	ND
Iron, mg/dL	ND	50
Ferritin, ng/dL	ND	690.6
Sodium, mEq/L	141	144
Potassium, mEq/L	4.1	4.7

ALT: alanine aminotransferase; AST: aspartate aminotransferase; GGT: gamma-glutamyl transpeptidase; ND: not determined; LDH: lactate dehydrogenase; PTT: partial thromboplastin time; and INR: international normalized ratio.

Back on Track Feedback			Name: Molly B.	
<u>Tests</u>	<u>Usual Goals</u>	<u>Your Results</u>	FID #:	
	<i>Your score should be</i>		<i>SAFE: At or better than goal</i>	<i>NOT SAFE: Not yet at goal</i>
A1C	7.0% or less	8.7%		x
Blood Pressure	130/80 mmHg	125/75 mmHg	x	
LDL	100 mg/dL or less	116 mg/dL		x



Personalized A1C Feedback

Reference	Type	Number of subjects	A1C Difference
Chapin et al, 2003	Chart in medical record, conversation presumed	127 T2D adults	0.7%*
Levetan et al, 2002	Laminated poster, then call from educator	150 T1D/ T2D adults	0.5%*
O'Connor et al, 2009	Periodic mailed brochures, no discussion	3703 T1D/T2D adults	0.0%
Sherifali et al, 2011	Periodic mailed brochures, no discussion	465 T2D adults	0.1%

The Power of Congratulations

Consider how we talk about A1C results:

“Its great that you took the time to get your A1C done before our visit today. The numbers haven’t moved much, which tells us that something different is needed.”

vs.

“Your A1C is still too high. Don’t you understand the consequences? Why aren’t you working harder on this?”

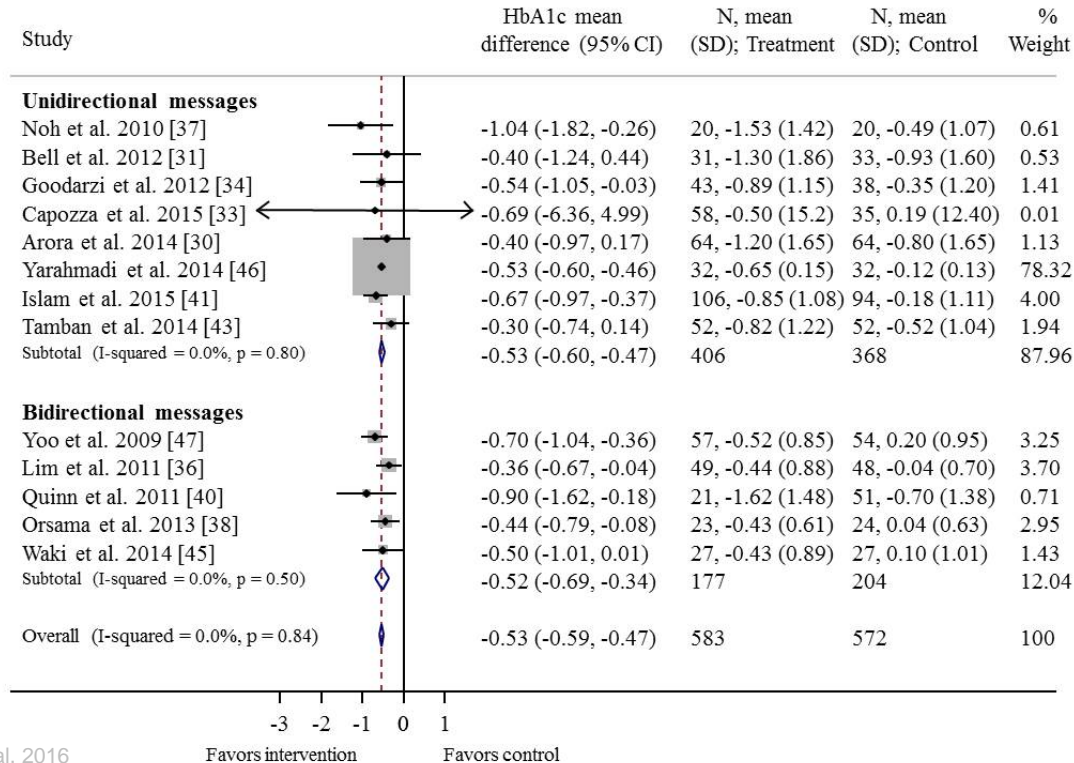
A. Making the Invisible Visible

- Step 1. A1C awareness
- Step 2. Stay in touch

Beard et al, 2010



The Value of Ongoing Contact



Arambepola et al, 2016

B. Address Hopelessness

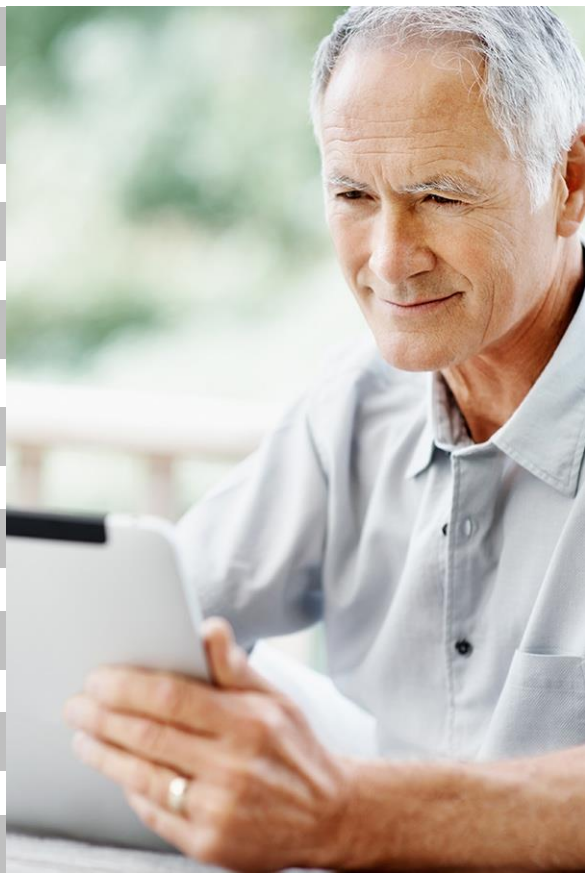
Q. Diabetes is the leading cause of adult blindness, amputation, and kidney failure.

True or false?

A. False.

To a large extent, it is *poorly controlled* diabetes that is the leading cause of adult blindness, amputation and kidney failure.

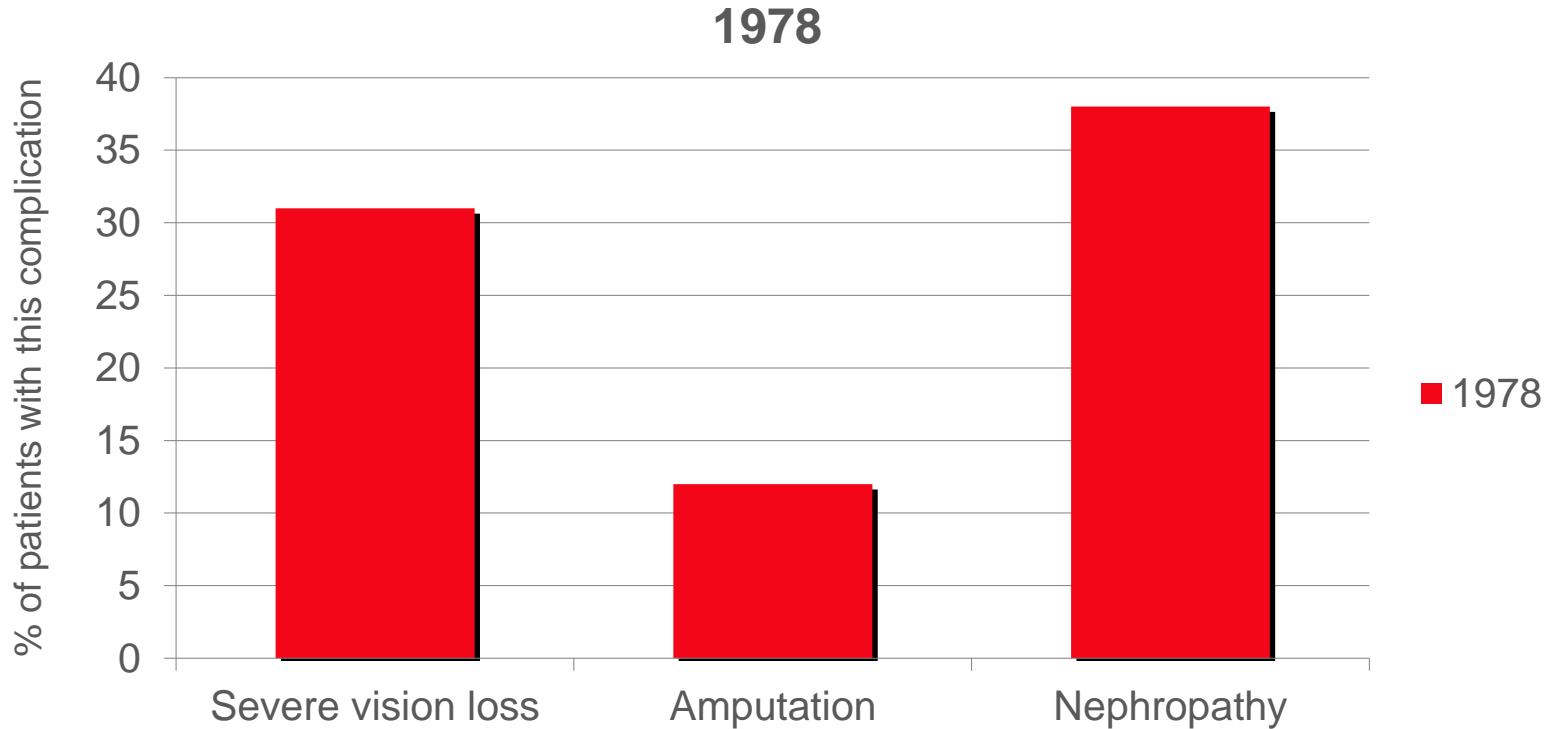
Well-controlled diabetes is the leading cause of ... NOTHING!



Fact Check

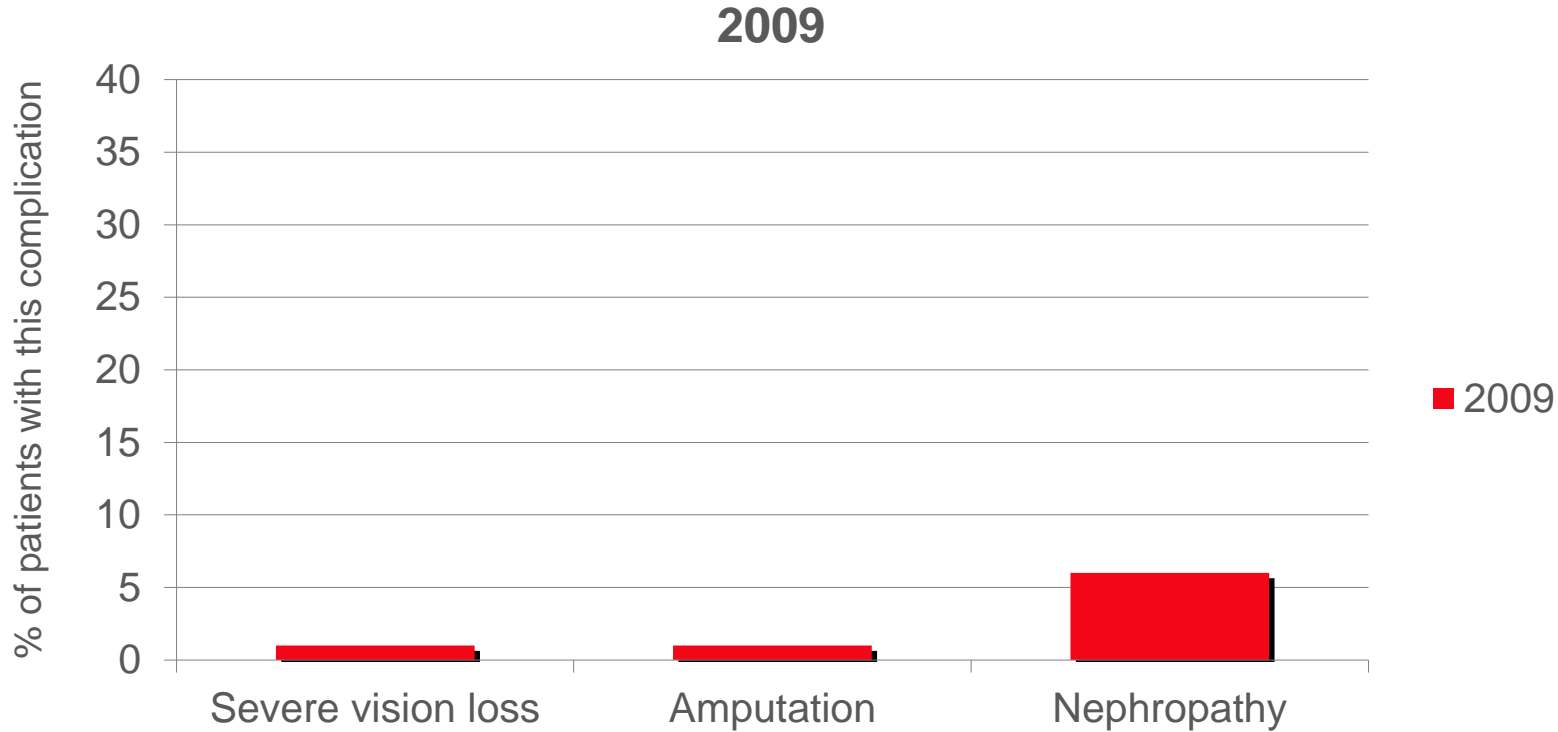
- This doesn't mean good care will **guarantee** that you will not develop complications.
- This does mean: with good care, **odds are good** you can live a long, healthy life with diabetes.

T1D Complications After 30+ Years



Deckert et al, 1978

T1D Complications After 30+ Years



DCCT/EDIC Research Group, 2009

Life Expectancy in a Large Cohort of Type 2 Diabetes Patients Treated in Primary Care (ZODIAC-10)

Helen L. Lutgers¹*, Esther G. Gerrits²*, Wim J. Sluiter³, Lielith J. Ubink-Veltmaat⁴, Gijs W. D. Landman², Thera P. Links^{3,5}, Reinold O. B. Gans^{1,5}, Andries J. Smit^{1,5}, Henk J. G. Bilo^{1,2,5}

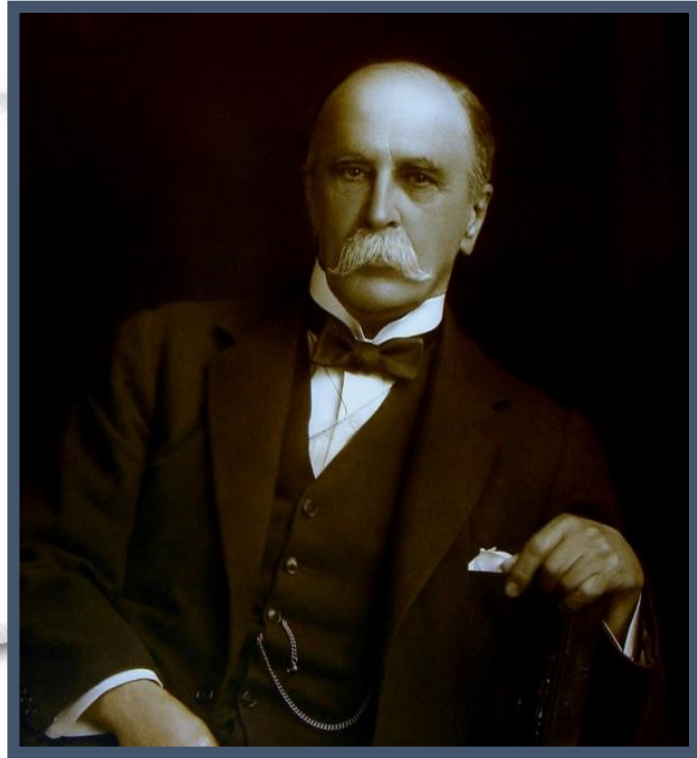
1 Department of Internal Medicine, University Medical Center Groningen, Groningen, the Netherlands, 2 Diabetes Center, Isala Clinics, Zwolle, the Netherlands, 3 Department of Endocrinology, University Medical Center Groningen, Groningen, the Netherlands, 4 Family practice't Veen, Hattem, the Netherlands, 5 Department of Medicine, University of Groningen, Groningen, the Netherlands

Conclusions: “This study shows a normal life expectancy in a cohort of subjects with type 2 diabetes patients in primary care when compared to the general population.”

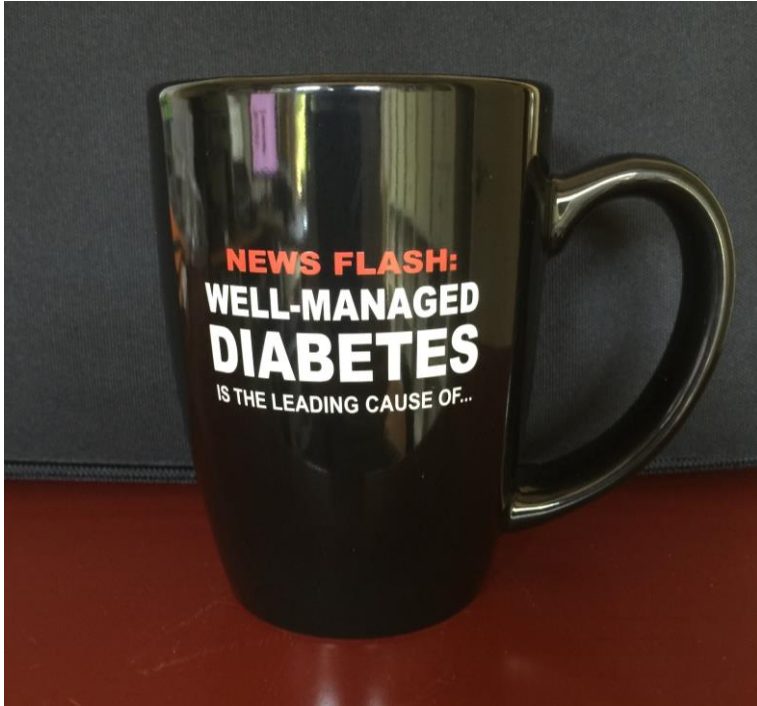
Diabetes and Your Health

“To live a long and healthy life, develop a chronic disease and take care of it.”

- Sir William Osler



We Even Put it on Mugs!



Effective HCP Behavioral Strategies

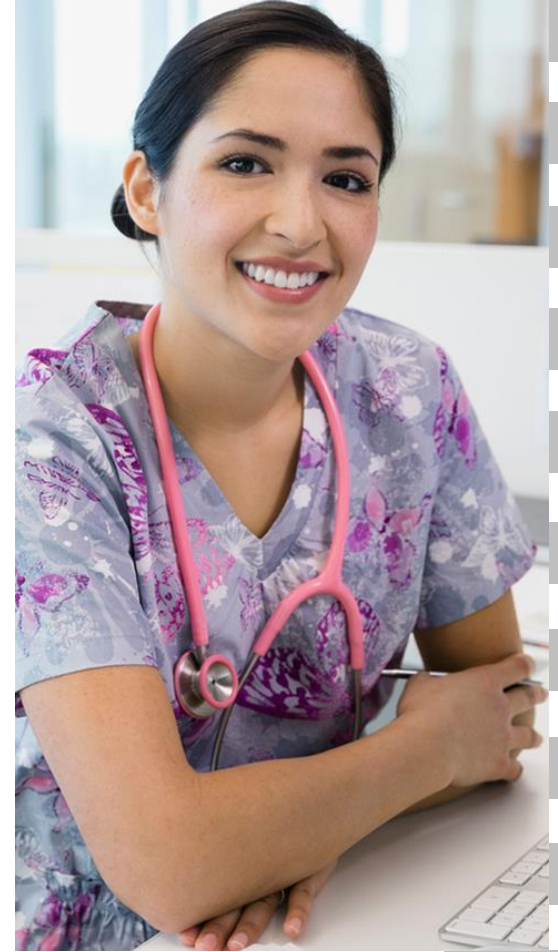
Table 2. Behavior Change Strategies Reported by Top- and Bottom-Performing Clinicians

Strategy	Clinicians Reporting Strategy, No.	
	Top-Performing Clinicians (n = 10)	Bottom-Performing Clinicians (n = 10)
Used mainly by top-performing group		
Emphasizing patient ownership	8	3
Partnering with patients	9	3
Identifying small steps	10	3
Scheduling frequent follow-up visits	7	3
Showing caring	5	1
Used by both groups		
Reliance on team supports	10	7
Used mainly by bottom-performing group		
Describing consequences of bad health behaviors	2	8

Greene et al, 2016

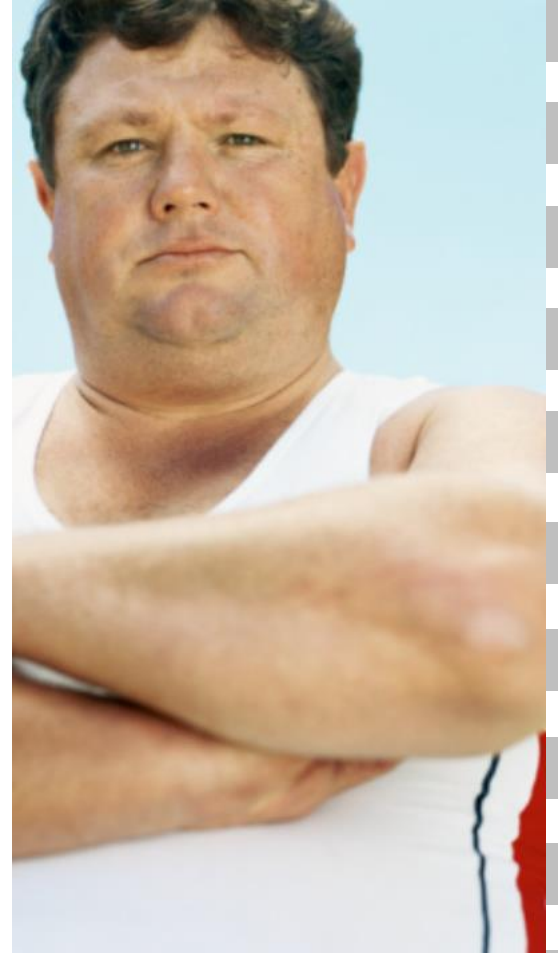
C. Address Discouragement

- **Perceived treatment efficacy**
 - Help people to see that their actions can make a positive, tangible difference



Paired Monitoring: Sam's Story

- Age 42, married, school teacher
- T2D 6 yrs, BMI 33, last A1C 7.9%
- Steady weight gain since dx
- Used to be very active, but quit sports 5 years due to injury
- No longer checks blood glucose (BG) due to “consistently high readings”
- Takes glargine, 80 units daily
- Was encouraged to begin walking, but refuses (“won’t help”)



Sam's Exercise Experiment

Daily walk
(45 minutes)

7 consecutive
days: Measure
BG right before
and after walk

Day	Pre-Exercise	Post-Exercise	BG Change
1	129 mg/dL	101 mg/dL	- 28 mg/dL
2	194 mg/dL	153 mg/dL	- 41 mg/dL
3	157 mg/dL	94 mg/dL	- 63 mg/dL
4	141 mg/dL	108 mg/dL	- 33 mg/dL
5	152 mg/dL	127 mg/dL	- 25 mg/dL
6	130 mg/dL	98 mg/dL	- 32 mg/dL
7	124 mg/dL	102 mg/dL	- 22 mg/dL

Average BG change: -35 mg/dL

Sam's Exercise Experiment

Daily walk
(45 minutes)

7 consecutive
days: Measure
BG right before
and after walk

Day	Pre-Exercise	Post-Exercise	BG Change
1	7.1 mmol/L	5.6 mmol/L	- 1.6 mmol/L
2	10.8 mmol/L	8.5 mmol/L	- 2.3 mmol/L
3	8.7 mmol/L	5.2 mmol/L	- 3.5 mmol/L
4	7.8 mmol/L	6.0 mmol/L	- 1.8 mmol/L
5	8.4 mmol/L	7.0 mmol/L	- 1.4 mmol/L
6	7.2 mmol/L	5.4 mmol/L	- 1.8 mmol/L
7	6.9 mmol/L	5.7 mmol/L	- 1.2 mmol/L

Average BG change: - 1.9 mmol/L

“I wonder how breakfast affects me?”

“I wonder why I’m often so tired in the evening?”

“I wonder which type of beer would raise my BG’s the least?”

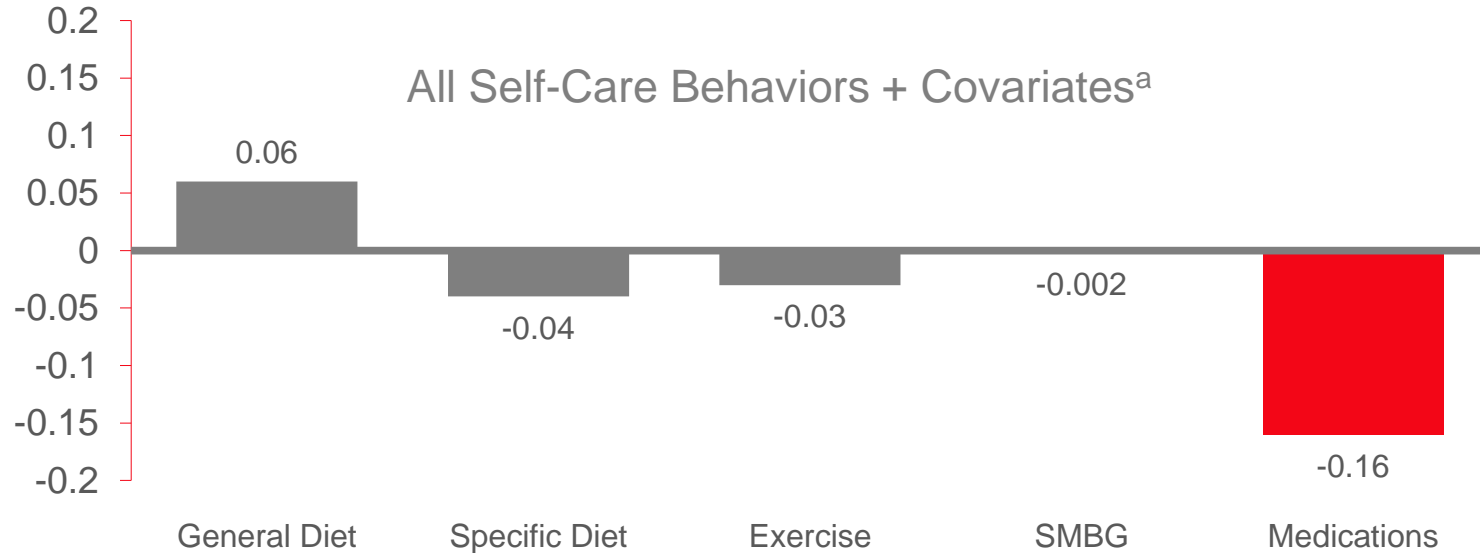


C. Address Discouragement

- Perceived efficacy
 - Help people to see that their actions can make a positive, tangible difference
- Re-frame how we talk about medications



The Key Behavioral Contributor to Glycemic Control?



SMBG, self-monitoring of blood glucose.

^aCovariates, age, gender, race, ethnicity, income, education, insurance status, insulin status and duration of diabetes. HbA1C assessed with a point-of-care device.

^bP<0.05

Osborn CY, et al. J Clin Pharm and Ther. 2016;41:256-259.



Diabetes Quiz

Roy

Takes 2 oral medications for T2D and basal insulin; his last A1C was 6.8%

**WHO IS DOING
BETTER WITH HIS
DIABETES?**

Sam

Doesn't take any medications for T2D; his last A1C was 9.1%

- How healthy you are, and your risk of complications, is not determined by how much medication you take.
- *It is your metabolic results that matter.*
- Even if you are not taking pills or insulin, high blood sugars will likely lead to future problems.

Why Do Patients Feel this Way?

Threatening patients with medication

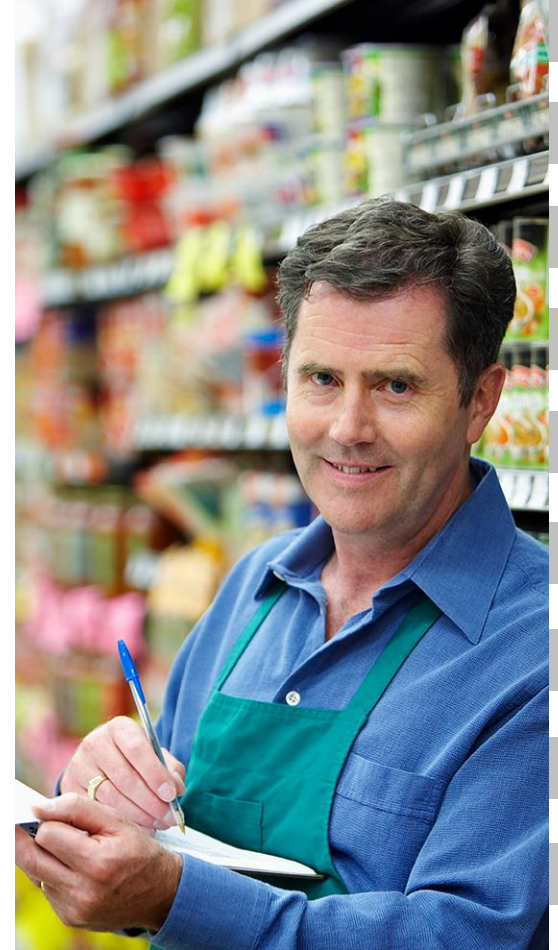
“If you can’t make some positive changes, then we’ll have no choice but to put you on more medication, and perhaps even start insulin.”

Underlying messages

- More medication, and especially insulin, should be avoided at all costs
- You have failed
- You are to be punished

Five Medication “Secrets”

1. **Big bang.** Taking your meds is one of the most powerful things you can do to improve your health
2. **Working silently.** Your meds are working even if you can't feel it
3. **Balancing the claims.** There are always pro's and con's; the con's are probably not as big as you think.
4. **No blame.** Needing more meds isn't your fault
5. **Not a health metric.** More meds don't mean you're sicker, fewer meds don't mean you're healthier



C. Address Discouragement

- Perceived efficacy
 - Help people to see that their actions can make a positive, tangible difference
- Re-frame how we talk about medications
- **Make behavioral success easier**



One Step at a Time





A Summary of the Three Micro-Interventions

A. Making the invisible visible

- A1C awareness, stay in touch

B. Addressing hopelessness

- Share the good news

C. Addressing discouragement

- Perceived treatment efficacy

Which of these might you be willing to try?

(pick one only)

- A. Making the invisible visible (A1C awareness, stay in touch)
- B. Addressing hopelessness (share the good news)
- C. Addressing discouragement (perceived treatment efficacy)

Thanks for Listening



Tools to face the psychological demands of diabetes



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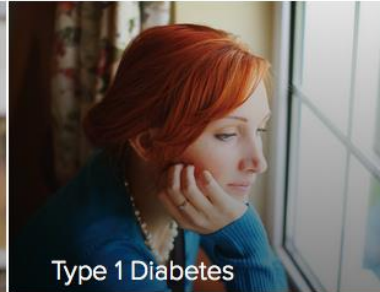
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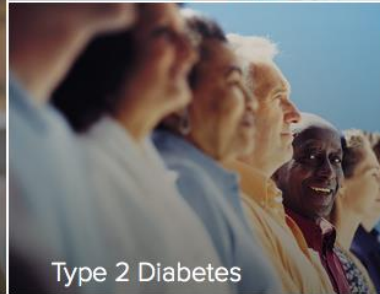
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