

DEPRESSION, DIABETES AND THE LINK TO SMOKING

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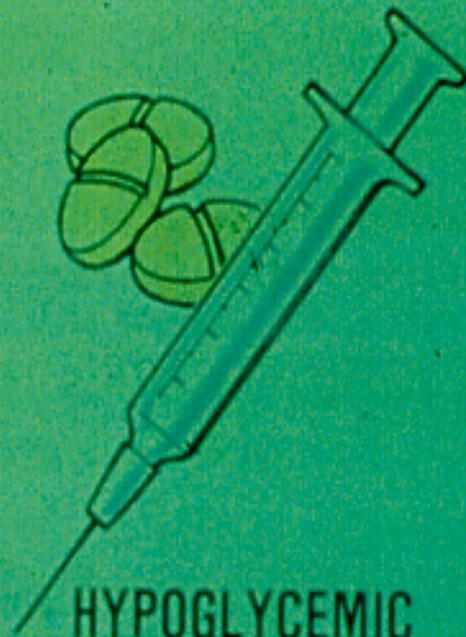
MANAGEMENT



DIET



EXERCISE



HYPOGLYCEMIC
AGENTS





Major Forms of Depression

- **Major depression**
- **Dysthymia**
- **Adjustment disorder (depressed mood)**
- **Bipolar disorders**

Common Depressive Features

Cognitive characteristics

- **Depressed mood**
- **Diminished interest or pleasure**
- **Feelings of worthlessness**
- **Diminished ability to concentrate**
- **Recurrent thoughts of death/suicidal ideation**

Common Depressive Features

Somatic characteristics

- Significant change in appetite
- Insomnia or hypersomnia
- Fatigue or loss of energy
- Psychomotor agitation or retardation

The Truth about Depression

“Let us make no bones about it: We do not really know what causes depression. We do not really know what constitutes depression. We do not really know why certain treatments may be effective for depression. We do not know how depression made it through the evolutionary process. We do not know why one person develops a depressive disorder from circumstances that do not trouble another.”

1. Prevalence

- Depression rates are 1.5 – 2.0x in diabetes
 - In review of controlled studies (n = 21): 20.5% of patients vs. 11.4% of controls
 - Kaiser Permanente study compared 16,000 Type 2 patients vs. 16,000 matched controls: 17.9% of patients vs. 11.2% of controls
 - Diagnostic interviews of 506 patients with diabetes: 9.9% with MDD, compared to national rates (NCSR) of 6.6%.

Anderson et al, 2001, Nichols and Brown, 2003; Fisher et al, 2007

Depression Risk

- **Highest risk for depression:**
 - multiple long-term complications
 - limited education
 - not married
 - female
 - poverty
- **No difference between diabetes types**

2. Diabetes Impacts Depression

- **Diabetes-linked neurovascular changes**
- **Genetic influences**
- **Elevated blood glucose levels**
- **Psychosocial burden**

Psychosocial Burden

Correlations between diabetes distress and CES-D depression

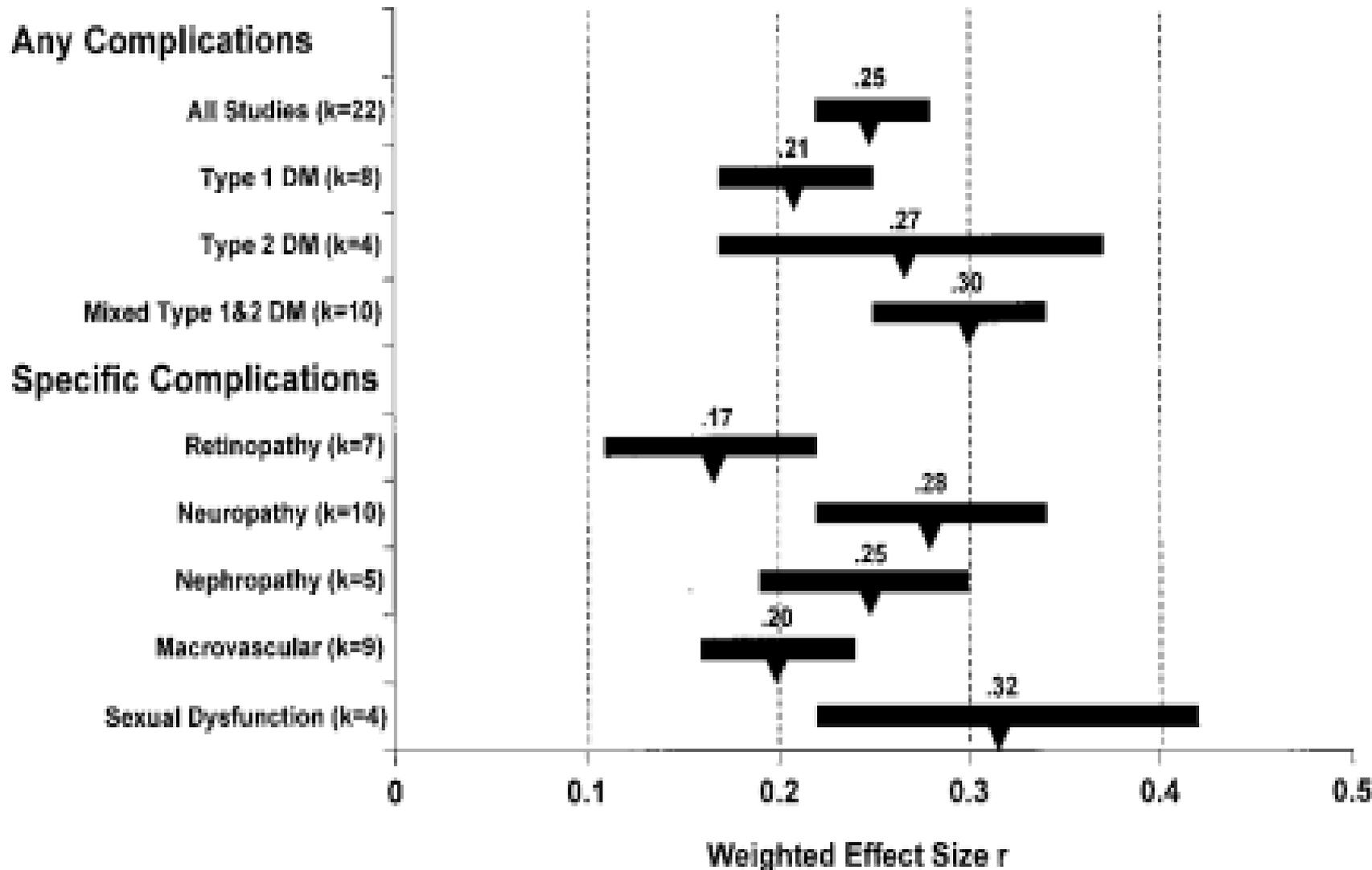
- **Feel overwhelmed by DM demands** $r = .51$
- **Feel that DM controls my life** $r = .40$
- **Will develop serious complications, no matter what I do** $r = .44$
- **Total DDS score** $r = .48$

2. Diabetes Impacts Depression

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- **Diabetes-linked neurovascular changes**
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- **Psychosocial burden**
- **Illness burden**
 - **Long-term complications**
 - **Chronic pain**
 - **Comorbid disease**

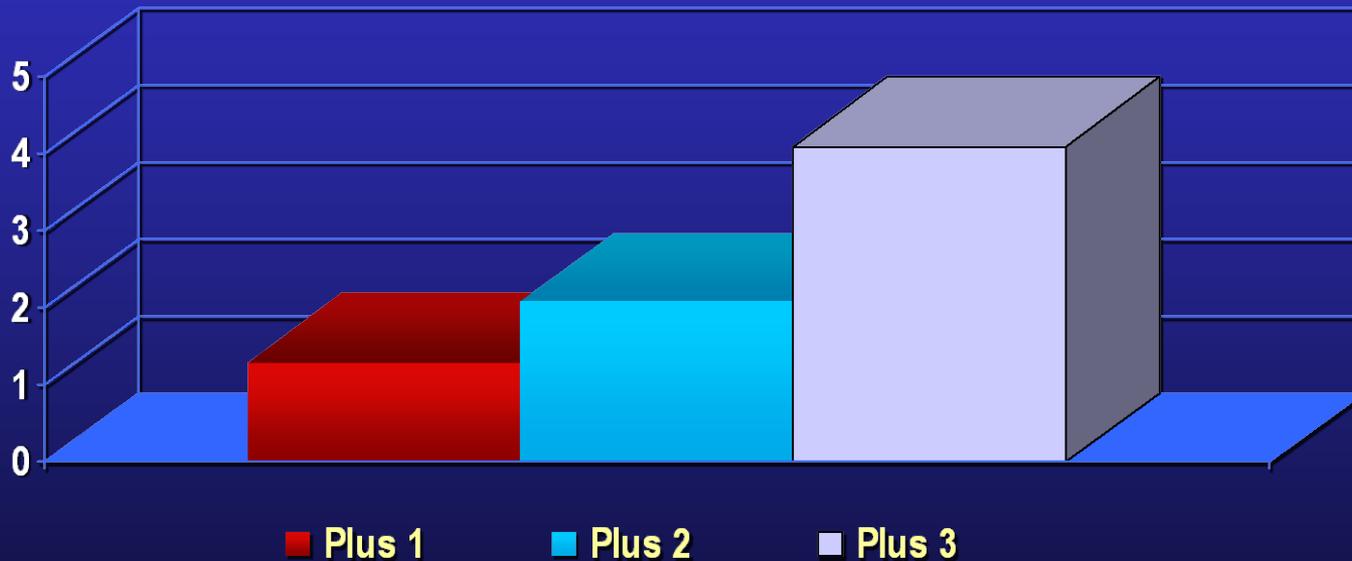


Weighted effect sizes and 95% confidence intervals for study aggregations. All combined p values were $p < .05$; k indicates number of studies for which sufficient data were available for use in the effect size calculation. De Groot et al, 2001

Influence of Comorbid Disease

HTN, CAD, chronic arthritis, stroke, COPD, and ESRD; n = 1794

Major Depression, Adjusted Odds



Egede, 2005

Influence of Comorbid Disease

- Not merely due to burden of diabetes per se
- More “straws on the camel’s back”
 - (broad burden of illness, especially perceived functioning)
- Linked to core feature of powerlessness

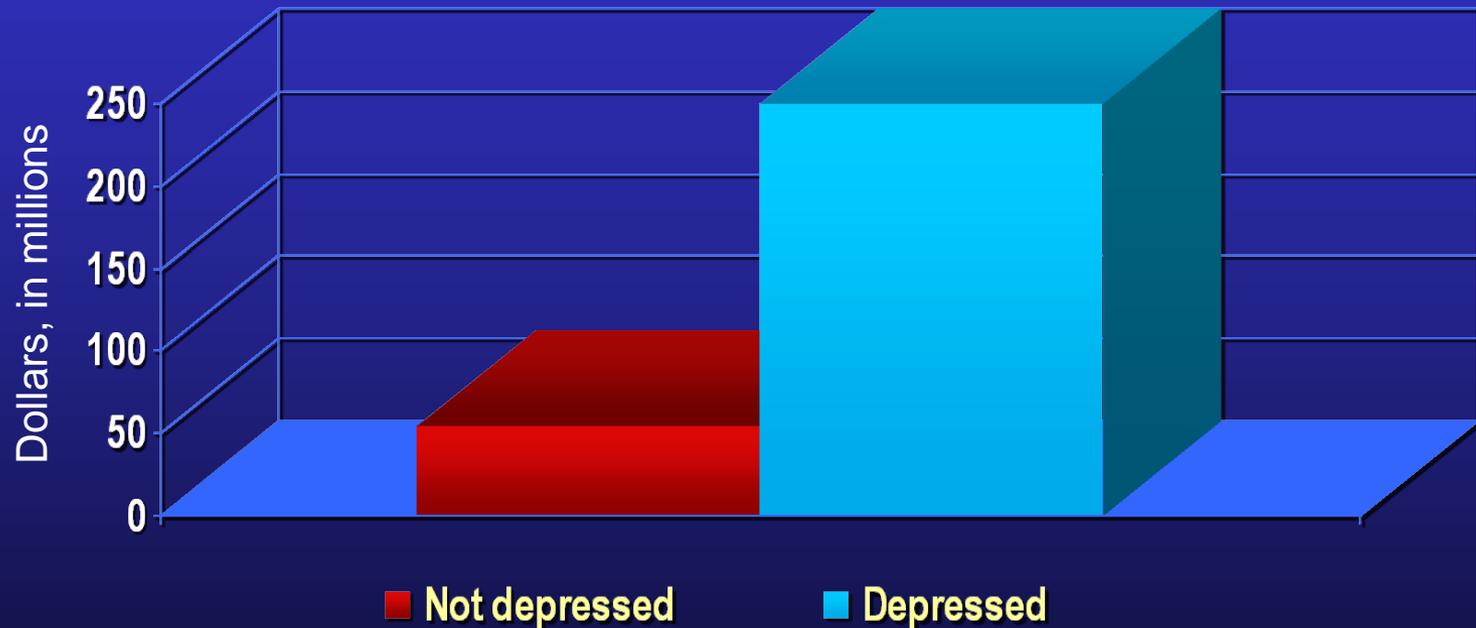
3. Depression Impacts Diabetes

- **Poor glycemic control**
 - **But effect size is small; may account for only 3% variance in A1C**
- **Over 5 years, depression led to:**
 - **24% more adverse macrovascular outcomes**
 - **36% more adverse microvascular outcomes**
 - **54% greater mortality**

Lin et al, 2010; Heckbert et al, 2010; Lustman et al, 2000; Rosenthal et al, 1998; Kovacs et al, 1995; Carney et al, 1994; Black et al, 2003; Zhang et al, 2005

3. Depression Impacts Diabetes

Depression and Health Care Costs in Diabetes, Nationwide Sample
(4.5x higher in depressed vs. non-depressed)



Egede et al, 2002

Depression and Self-Care

- **Associated with factors linked to poor control:**
 - **Physical inactivity**
 - **Smoking**
 - **Obesity**
 - **Limited diabetes knowledge**
 - **Poor adherence to self-care behaviors**

Lustman et al, 1997; Solberg et al, 2004; Egede, 2004; Murata et al, 2003; Ciechanowski et al, 2003

Depression and Self-Care

Self-care activities (past 7 days)	n	No major depression	Major depression	Odds ratio†	95% CI	P
Diet						
Healthy eating once weekly or less		8.8%	17.2%	2.1	1.59–2.72	<0.0001
Five servings of fruits/vegetables once weekly or less		21.1%	32.4%	1.8	1.43–2.17	<0.0001
High-fat foods ≥ 6 times weekly		11.0%	15.5%	1.3	1.01–1.73	<0.04
Exercise						
Physical activity (≥ 30 min) once weekly or less		27.3%	44.1%	1.9	1.53–2.27	<0.0001
Specific exercise session once weekly or less		45.8%	62.1%	1.7	1.43–2.12	<0.0001
Smoking						
Yes		7.7%	16.1%	1.9	1.42–2.51	<0.0001
Glucose monitoring (patients on medications)						
Test blood glucose less than once weekly	3,439	17.8%	18.2%	1.1	0.80–1.44	NS
Test blood glucose as recommended less than once weekly		24.5%	26.7%	1.1	0.89–1.47	NS
Foot check (patients on medications)						
Checked feet less than once weekly	3,439	20.1%	19.7%	1.0	0.76–1.29	NS
Checked inside of shoes less than once weekly		59.7%	61.4%	1.1	0.88–1.36	NS
Total		3,927	536			

*Percentages are unadjusted; †Odds ratios are adjusted for the covariates age, sex, marital status, education, race/ethnicity, medication risk, complications, treatment intensity, clinic, and physician generalized estimating equation (GEE).

4. Identifying Depression

- **Substandard identification/treatment of MDD**
- **Standard patients presenting with symptoms of major depressive disorder visited 152 family physicians and general internists**
- **In 35% of cases, no diagnosis indicated**
- **In 44% of cases, no treatment offered (medication, referral or two-week follow-up)**

Eight Warning Signs

- Hx of depression
- Hx of mental health treatment
- Family history of depression
- Reported sexual dysfunction

Eight Warning Signs

- **Chronic pain as a primary complaint**
- **Symptoms that are out of proportion to the objective findings**
- **Poor glycemic control (and/or poor adherence to self-care)**
- **Diabetes-related emotional distress**

The Two Cardinal Symptoms

“During the past month, have you often:

- been bothered by feeling down, depressed or hopeless?**
- had little interest or pleasure in doing things?”**

4. Identifying Depression

- Center for Epidemiological Studies - Depression Scale (CES-D)
- Beck Depression Inventory (BDI-II)
- Patient Health Questionnaire-9 (PHQ-9)
- Broader measures (SF-36, SCL-90, PRIME-MD)

A. Over the last 2 weeks, how often have you been bothered by any of the following problems?

	Not at all 0	Several days 1	More than half the days 2	Nearly every day 3
1. Little interest or pleasure in doing things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Feeling down, depressed, or hopeless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Trouble falling/staying asleep, sleeping too much	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Feeling tired or having little energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Poor appetite or overeating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Trouble concentrating on things, such as reading the newspaper or watching television.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Moving or speaking so slowly that other people could have noticed. Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Thoughts that you would be better off dead or of hurting yourself in some way.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Score ____ = ____ + ____ + ____ + ____				

5. Treatment of Depression in Diabetes

Medication tx (4 RCT' s, n = 289)

- Positive psych outcome 3/4
- Positive medical outcome 0/4

Psych tx (3 RCT' s, n = 140)

- Positive psych outcome 3/3
- Positive medical outcome 2/3

Mixed (psych and/or medication, n = 954)

- Positive psych outcome 3/4
- Positive medical outcome 1/4

Treatment Considerations

- **Special attention to those with chronic pain and/or complications**
 - **Poorer outcomes**
 - **Increased risk of depression recurrence.**

Five Things To Know

- 1. PREVALENCE.** Depression is widespread among patients with diabetes
- 2. DIABETES IMPACTS DEPRESSION.** Both biological and psychosocial elements of diabetes may exacerbate depression.
- 3. DEPRESSION IMPACTS DIABETES.** Depression negatively influences self-care, glycemic control, development of complications and health care costs.

Five Things To Know

- 4. IDENTIFYING DEPRESSION.** It is relatively easy to screen for depression in diabetes and to address the issue with patients.
- 5. TREATING DEPRESSION.** Moderately effective treatments have been demonstrated, but there appears to be little positive impact on metabolic control. Something is missing!

Diabetic Patients Who Smoke: Are They Different?

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ABSTRACT

BACKGROUND We wanted to identify differences between diabetic patients who smoke and those who do not smoke to design more effective strategies to improve their diabetes care and encourage smoking cessation.

METHODS A random sample of adult health plan members with diabetes were mailed a survey questionnaire, with telephone follow-up, asking about their attitudes and behaviors regarding diabetes care and smoking. Among the 1,352 respondents (response rate 82.4%), we found 188 current smokers whose answers we compared with those of 1,264 nonsmokers, with statistical adjustment for demographic characteristics and duration of diabetes.

RESULTS Smokers with diabetes were more likely to report fair or poor health (odds ratio [OR] = 1.5, $P = .03$) and often feeling depressed (OR = 1.7, $P = .004$). Relative to nonsmokers, smokers had lower rates of checking blood glucose levels, were less physically active, and had fewer diabetes care visits, glycated hemoglobin (A_{1c}) tests, foot examinations, eye examinations, and dental checkups ($P \leq .01$). Smokers also reported receiving and desiring less support from family and friends for specific diabetic self-management activities and had lower readiness to quit smoking than has been observed in other population groups.

CONCLUSIONS Clinicians should be aware that diabetic patients who smoke are more likely to report often feeling depressed and, even after adjusting for depression, are less likely to be active in self-care or to comply with diabetes care recommendations. Diabetic patients who smoke are special clinical challenges and are likely to require more creative and consistent clinical interventions and support.

CONCLUSIONS Clinicians should be aware that diabetic patients who smoke are more likely to report often feeling depressed and, even after adjusting for depression, are less likely to be active in self-care or to comply with diabetes care recommendations. Diabetic patients who smoke are special clinical challenges and are likely to require more creative and consistent clinical interventions and support.

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	125/75	X	
Lipids	100 or less	116		X

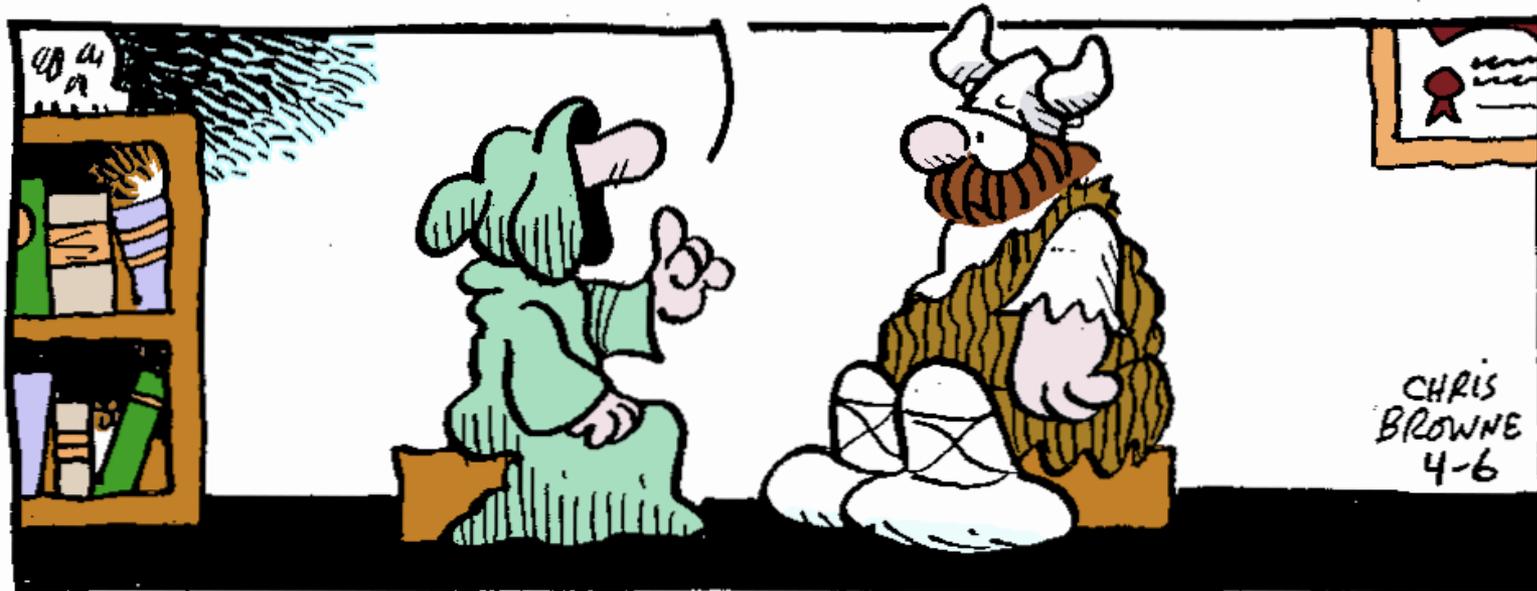


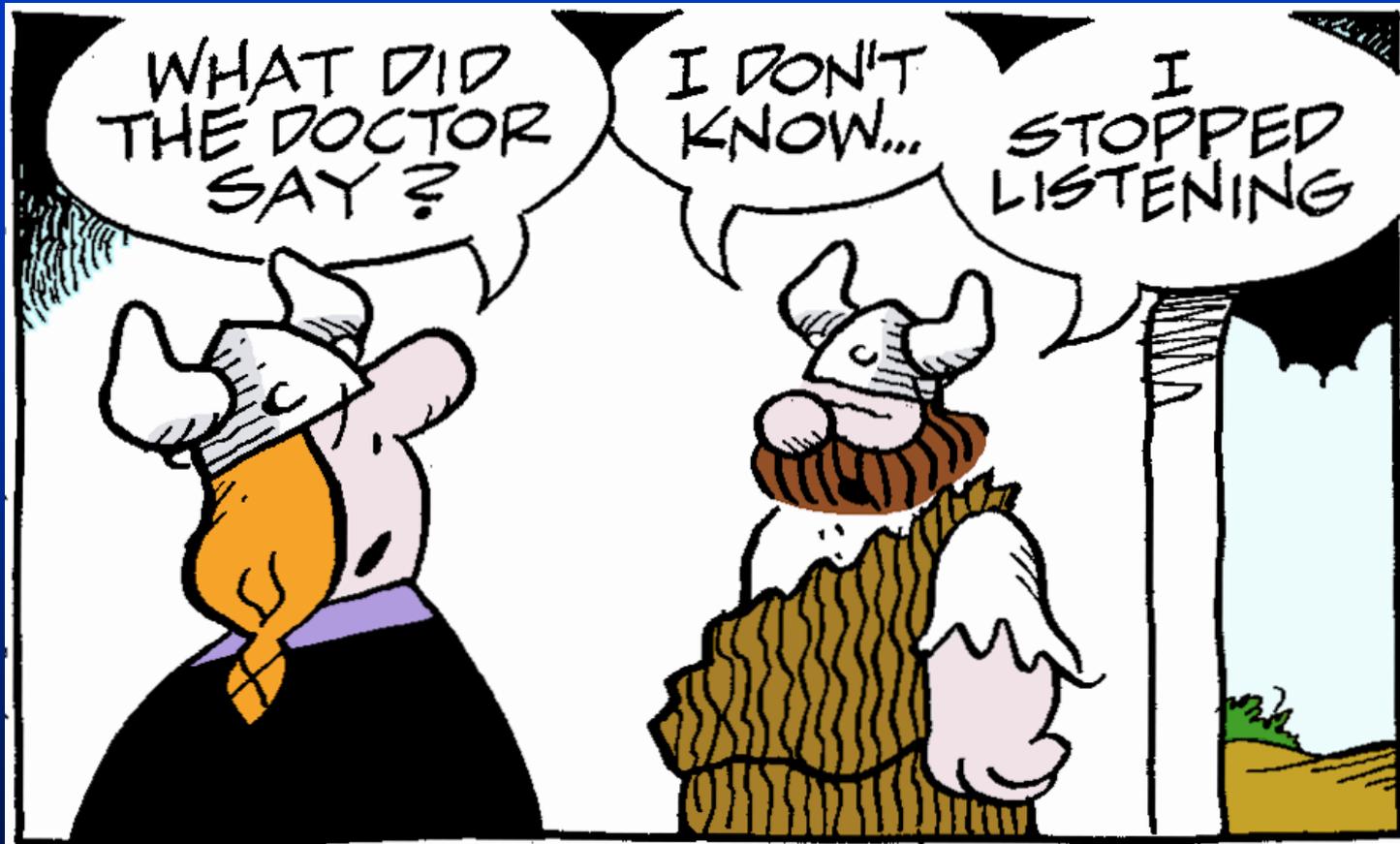


The Problem: So Much to Do!

- Eat more fruits and vegetables
- Limit sweets and saturated fat (and trans fat)
- Eat 3 meals a day
- Eat at the same times each day
- Be more physically active
- Check blood glucose
- Take your medications on time, every day
- Have an eye exam
- Check your feet every day
- Quit smoking
- And on and on and on...

STOP OVEREATING, STOP DRINKING,
STOP STAYING OUT LATE, STOP
FIGHTING, STOP WORRYING, STOP
EATING SWEETS, STOP GAMBLING...





Bang for Your Buck

Focus on actions to take that will give you the biggest payoff

- **Know your numbers**
- **Quit smoking**
- **Are you on right meds and taking them?**
- **Regular exercise**
- **Watch portion sizes**

BREAKING FREE FROM

TES

10 THINGS YOU NEED TO KNOW AND DO



**BEHAVIORAL
DIABETES
INSTITUTE**





Thanks for your attention

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