Screening for type 2 diabetes

It seems that an examination of clinical practice guidelines while chanting the mantra of evidence-based medicine could provide endless fodder for your recently initiated Controversy section. Kenneth Marshall's contribution[1] on one of the Canadian Diabetes Association's guidelines,[2] in which all recommendations have been carefully rated according to the available evidence, demonstrates how easy it is to fuel such a discussion.

Marshall,[1] and Hertzel Gerstein and Sara Meltzer in their reply,[3] cite the UK Prospective Diabetes Study[4] as a critical trial. Marshall failed to recognize that the population recruited to this study reflects those who would be identified by a "screening" process (i.e., patients with newly diagnosed diabetes). They were subsequently managed in a very practical fashion that is replicated daily in physicians' offices and diabetes centres. Furthermore, the trial demonstrates the insidious progression of glucose intolerance with time, suggesting a potential benefit of early intervention. Glycemic control deteriorated in the UK Prospective Diabetes Study, even in patients in the intensive treatment policy group, whose glycosylated hemoglobin level had returned to pretreatment values by 6 years, yet a clear difference in the rate of microvascular complications still emerged. Treatment strategies were constrained by the goals of the study to examine effects of diabetes monotherapy until marked hyperglycemia developed. Surely a "ray of hope," to borrow Marshall's phrase, is the possibility that better control than this can lead to even greater reductions in complication rates. The effects of antihypertensive therapy in these newly diagnosed patients were equally impressive.[5]

Labelling an individual as having diabetes undoubtedly has adverse psychological potential that we should attempt to avoid. An enlightened approach to patient education, based on the accepted interpretation of clinical trial results for glycemic control, lipid-lowering and antihypertensive therapies in diabetes, should help to bring a more positive attitude to the diagnosis. Marshall's harsh denial that these therapies can improve the quality of life for a person diagnosed with diabetes is unjust, as is his unsupported contention that "screening will do a great deal of harm."

In our practice of medicine we remain in a state of overall evidence deficit. Taking a nihilistic approach while waiting for this deficit to be completely remedied hampers the progress of clinical research and the process of patient care. The Canadian Diabetes Association's guidelines recognize this with their careful rating of evidence to support recommendations.

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This is in response to the Controversy articles concerning type 2 diabetes.[1,2] I agree with Kenneth Marshall that screening for type 2 diabetes is largely unnecessary. Insulin resistance, which is at the early end of the spectrum of type 2 diabetes, is marked by features that are easily observed, including a tendency to be shaped like an apple despite exercise or unsupervised calorie restriction or both, bloating, indigestion, shakiness before meals, sleepiness after meals, intermittent swelling of the hands and feet with ring tightening, and frequent momentary light-headedness when standing up from a reclining position.

The North American epidemic of "diabesity" (type 2 diabetes plus obesity, otherwise known as the insulin resistance syndrome) is affecting a growing proportion of the population. This disorder, which is fully reversible in its early stages, is not being adequately acknowledged or dealt with in a unified manner by the health care system. I do not agree with the assumption that very few people are able to achieve and maintain weight loss. If there was a consensus among physicians to get serious about helping patients to lose weight the profession would be well on the way to dealing with roots of problems rather than tips of icebergs.

Unfortunately, physicians have been provided with guidelines for disease management of a condition that is totally reversible. Clinical practice guidelines need to be completely rethought. Experts in this field inadvertently per-

petuate the disease-management industry by quarreling (entertaining controversies and rebuttals) over mostly self-serving conceptual differences instead of aiming for some consensus that can be readily accepted and applied to improve public health. This is highly unbecoming of medical science.

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[The author responds:]

I agree with Wally Shishkov that the most common precipitant of type 2 diabetes is obesity and that it would be a major public health triumph to reverse its ever-increasing prevalence in our society. Shishkov believes that long-term weight loss is achievable for many people. I hope he is right, but evidence published to date does not support this view.[1]

Alun Edwards objects to my "harsh denial" of the value of controlling glucose, lipids and hypertension in diabetic patients; in fact, I wrote that such patients should be "vigorously treated for all detected risk factors." He also suggests that my statement that "screening will do a great deal of harm" is unsupported, yet I provided numerous supporting references in my article.

Edwards appears to be ambivalent about evidence-based medicine. The phrase "chanting the mantra of evidence-based medicine" in his opening sentence suggests a pejorative view of the subject, yet in his closing sentence he lauds the Canadian Diabetes Association's "careful rating of evidence to support recommendations." If he is in favour of evidence he should know that the Canadian Diabetes Association gave a grade of D to screening for diabetes.[2] This grade means that the recommendation is supported by opinion, not randomized clinical trials.

Edwards considers me a nihilist. I think a more accurate description of my attitude would be "snail," as used by Sackett and Holland[3] to describe physicians who in uncertain situations avoid interventions that may cause harm. In contrast to "snails," "evangelists" intervene in similar circumstances because it is possible that doing so will prove beneficial. Stephenson[4] uses the terms "minimalist" and "maximalist" for these opposing views. Those of the minimalist school believe that patient care must be based on evidence and that the detrimental effects of interventions must be seriously weighed in order to avoid harming patients; those of the maximalist school believe that one should always try to prevent the worst possible eventuality, that interventions are beneficial and that they do not have serious side effects. Both "snails" and "evangelists" want to help their patients, but their ways of doing so follow different paths.

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Difficult decisions for long-term tube-feeding

We read with interest the recent article by Susan Mitchell and Fiona Lawson on decision-making for long-term tube-feeding in cognitively impaired elderly people.[1] We have made similar observations,[2–4] mostly with elderly or cognitively impaired people, and we have interviewed substitute decision-makers prospectively. We have attempted to study situations in which substitute decision-makers declined tube-feeding, as suggested by Margaret Brockett in the accompanying editorial,[5] but we were unable to identify any such circumstance in 18 months of study at 2 large urban hospitals.

The need to improve the decision-making process is underscored by the observation that some substitute decision-makers regret their decision after they have experienced the long-term outcome and that a substantial number would not choose the same intervention for themselves if they were in a similar situation. Emotional factors and deeply ingrained societal values play an important role in these situations. Providing food is a core value in a nurturing society, and the decision to forgo nutritional support is tantamount to deciding that a loved one will die. There is often a desperate hope for a miraculous recovery or that some new medical breakthrough will eventually result in a cure.

Nutritional support is less easily per-

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ceived as life support than are some of the more dramatic interventions that modern health technology can provide. Yet it is often provided for this purpose without a clear view of the possible negative results. Individuals faced with decisions about long-term tube-feeding may not have a clear concept of quality-of-life issues and may be suspicious that any suggestion to limit care stems from a desire of health care professionals to conserve resources rather than to optimize the quality of care. A time-limited trial of nutritional support could be effective in some situations and would include the identification of goals to be achieved and a commitment to review the decision if these goals are not met. Substitute decision-makers may need help in understanding that it is ethically acceptable to decide to discontinue nutritional support and allow death to occur if this is inevitable.

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The long-term view on refractive surgery

I found the article by Edward Y.W. Yu and W. Bruce Jackson on recent advances in refractive surgery to be interesting, informative and timely.[1] However, as a practitioner of evidence-based medicine, I was somewhat surprised that the outcomes of photorefractive keratectomy (PRK) were quoted at only 1 year of follow-up. Given that this procedure has been performed for almost 2 decades in Canada, surely there are high-quality long-term outcome data for this procedure that the authors can offer.

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Reference

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[One of the authors responds:]

I thank Shabbir Alibhai for his letter and welcome the opportunity to review the long-term outcomes of PRK in more detail.

After PRK a small amount of myopic regression occurs; it stabilizes by 6 months (Table 1). After the initial 6 months, significant additional regression is uncommon. In our 2-year data for myopia, between 6 and 24 months after PRK the average change in refractive error in patients with myopia of –1 to –12 dioptres (D) was 0.02 D, and only 12.9% of patients demonstrated a shift greater than 0.5 D. Data from 3 trials[1–3] confirm the long-term stability of the results of PRK. In fact, in the trial with the longest follow-up period the refractive change for patients with mild to moderate myopia stabilized between 3 and 6 months after PRK and remained stable for up to 6 years.[2] These trials, along with informal post-marketing surveillance, failed to demonstrate additional complications after the 12-month post-treatment period, unlike the progressive hyperopic shift seen with radial keratotomy.

Table 1: Change in refractive error following photorefractive keratectomy

Degree of myopia; time after surgery	No. of patients	Mean refractive error, D (and SD)
Mild myopia (–1 to –6 D)		
0 mo	286	–4.10 (1.24)
6 mo	217	–0.14 (0.42)
12 mo	148	–0.21 (0.40)
18 mo	111	–0.17 (0.37)
24 mo	78	–0.13 (0.33)
Moderate to severe myopia (> –6 to –12 D)		
0 mo	122	–7.96 (1.46)
6 mo	93	–0.04 (0.69)
12 mo	72	–0.06 (0.67)
18 mo	38	–0.03 (0.54)
24 mo	34	–0.13 (0.64)

Note: D = dioptres.

Although PRK was first performed 12 years ago, additional long-term data are not available. Early 2-year PRK data demonstrating that results stabilized beyond 1 year were widely accepted as evidence of long-term stability and effectively removed much of the impetus to obtain long-term data.

Long-term trials of PRK are extremely challenging to conduct for a number of reasons. It is difficult to retain subjects because patients quickly lose interest in follow-up examinations after deriving the benefit of the procedure. Owing to the selective loss of satisfied patients during follow-up, a high degree of retention must be achieved to avoid overestimation of complication rates. It is also difficult to arouse scientific curiosity and obtain funding for long-term studies because the technology is evolving so rapidly that the PRK techniques used several years ago are no longer performed.

The pace of change in techniques for excimer laser surgery is remarkable. Over the last few years we have seen the discontinuation of the use of nitrogen blowing at the time of surgery, the transition from small treatment zones of 4 mm to much larger treatment zones of 6.5 and 7 mm, the move from single-zone treatments to multizone and multipass treatments, and the advent of broad-beam lasers with scanning capabilities and new flying-spot lasers with eye tracking. Overall, outcomes continue to improve. However, the widespread implementation of innovations may outstrip the clinical demonstration of efficacy. Critical consumers would be well advised to obtain the most recent 6-month and 1-year

outcome data from the laser centre they are considering as well as documentation of the clinical efficacy of innovations implemented since those procedures were performed.

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Doubts about the college

The registrar of the College of Physicians and Surgeons of British Columbia is incorrect in advising physicians to have implicit trust in their provincial colleges.[1]

Despite attempts at evolution, our law remains adversarial. During investigations the college's perspective is always that of the public, whereas the perspective of the Canadian Medical Protective Association is always that of the physician. The difference between the quasijudicial setting of a college investigation and the court setting is the college's relaxed procedure regarding evidence and judgement. This rarely favours the physician.

Considerable pressure is often applied to have accused physicians comply with a college judgement instead of defending themselves vigorously in an openly adversarial manner. Until colleges conduct themselves with the judicial rigour of our courts, I will doubt the value of professional self-government.

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The walnut manoeuvre

Probably most of us have encountered brutal or sneering teachers during our medical training. Usually we think of a rebuttal too late, or do not respond for fear of reprisal. Robert Patterson's "Fear and loathing in residency"[1] reminds me of an encounter that a colleague described to me many years ago in which the student gained the upper hand.

During his education at Harvard Medical School, my colleague was taught clinical skills by a renowned clinician, physician to a president of the United States. This man was well known for his delight in picking out one student in each group for gruelling questioning until the student was reduced to jelly. He would ask sneeringly, "And just what do *you* know about *that*?"

In one clinical skills group was a student whom I shall call Collins. From the first session Collins realized he was to be favoured with this special attention. He prepared himself accordingly. When asked to examine a patient, he felt the inguinal nodes and casually remarked, "Yes, I feel a lump … definitely a lump."

"Well, describe it."

"It is firm … not mobile and … about the size of an English walnut."

"So … and just what do *you* know about English walnuts?"

Collins stood up, looked his teacher in the eye, and began. He described the tree, its height and breadth, its geographic location and climatic limits, its production of walnuts, their size, consistency, industrial uses and value to the economy, and so forth, continuing without pause until the end of the session. Collins was never troubled again.

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