



June 15, 2009

## Glucose Self-Monitoring in Type 2 Diabetics not using Insulin: Is it bitter sweet?

### Clinical Question:

**What are the pros and cons of self-monitoring blood glucose for type 2 diabetics not using insulin?**

### **Evidence:**

- Two recent well-designed randomized controlled trials compared self-monitoring to no self-monitoring in type 2 diabetics using diet or oral therapies only.
- DiGEM<sup>1</sup> included 453 diabetics (mean HgbA1c 7.5%) and ESMON<sup>2</sup> 184 new diabetics (mean HbA1c 8.7%).
  - After 12 months, there was no statistical difference in HbA1c, starting of new drugs, or weight/BMI in either study.<sup>1,2</sup>
  - One third to a half of patients were not following the self-monitoring protocol by trial end.<sup>1</sup>
  - There was a statistically significant worsening of depression scores (mean 6% worse/person) in the self-monitoring subjects.<sup>2</sup>

### **Context:**

- The research preceding these studies is best summarized in a meta-analysis<sup>3</sup> showing self-monitoring of blood glucose reduced HbA1c by 0.39%.
  - This reduction is of questionable clinical significance and,
  - Is likely exaggerated as the higher quality studies (2 of the 6 in this meta-analysis) showed no difference
- The more recent DiGEM1 and ESMON2 are higher quality studies and did not find a benefit in self-monitoring but did identify some negatives.
  - The worsening of depression scores noted in ESMON<sup>2</sup> is concerning but supported by others studies showing worsening depressive symptoms<sup>4</sup> and negative impacts on quality of life.<sup>4,5</sup>
  - As well, regular self-monitoring is not cost-effective.<sup>5</sup>
- While regular self-monitoring in type 2 diabetics not on insulin appears unnecessary, this population should still know how to test their sugar in case it is low, they are feeling ill or they are interested in seeing the impacts of lifestyle behaviors.

**Bottom-line: The present good quality evidence indicates that regular self-monitoring of blood glucose in type 2 diabetics not on insulin gives no benefits, is not cost-effective and may have negative consequences (like worsening on depression scales).**

**Authors:** G Michael Allan MD, CCFP & Christina Korownyk MD, CCFP

1. BMJ 2007;335:132-40
2. BMJ 2008;336:1174–7.
3. Cochrane. 2005;2:CD005060 & Diabetes Care 2005;28:1510–7.
4. Diabetes Care. 2001;24(11):1870-7.
5. BMJ 2008;336:1177–80.

**Tools for Practice** is a biweekly article summarizing medical evidence with a focus on topical issues and practice modifying information. It is coordinated by G. Michael Allan, MD, CCFP and the content is written by practising family physicians. Archived articles are available on the Toward Optimized Practice website.

---

This communication reflects the opinion of the author and does not necessarily mirror the perspective and policy of the Alberta College of Family Physicians.