Can a diabetic drink Clearfast® like anyone else? Would drinking a carbohydrate-rich beverage like Clearfast® make an already high blood sugar even worse?

1. There are two classes or types of diabetes. In Type I, sometimes called Juvenile Diabetes because it commonly starts at a young age, patients do not have adequate levels of insulin and are dependent on injectable insulin to control their blood sugars. In Type II or “adult onset diabetes”, insulin levels may be adequate but the patients act “insensitive” or “resistant” to it, that is, they are insulin resistant (IR). Treatment may involve exercise and weight management, oral anti-hyperglycemics or insulin. When blood sugar control is optimal, both types of diabetic patients are called “euglycemic.”

2. Obviously, the ingestion of a carbohydrate-rich beverage, like the ingestion of a meal, would be expected to affect glucose levels in the diabetic as well as the non-diabetic as it moves the consumer from a “fasted to a fed state.” For the diabetic, it has particular implications for their “state of glucose control.”

3. However, while glucose levels are important, the primary concern about diabetics having any clear liquids 2 hours prior to surgery is the notion that all diabetics have delayed gastric emptying or gastroparesis, the result of a specific neuropathy that is related to the diabetic state. That would suggest that they are at greater risk of regurgitating and aspirating their stomach contents under anesthesia than non-diabetics.

4. Two studies found that Type II diabetics or patients demonstrating insulin resistance (IR) could safely ingest 400 ml of a carbohydrate-rich beverage two-three hours before surgery. The first study concluded that Type II diabetics showed no signs of delayed gastric emptying. The second demonstrated that differences in post-ingestion glucose and insulin levels between insulin resistant (IR) and non-IR patients were not significant or not sustained.

      i. Following the ingestion of 400 ml of a 12.5% carbohydrate-rich beverage, peak glucose was higher in diabetic patients (HbA1C = 6.2) than healthy subjects, occurring later after intake, but returning to baseline at 180 minutes vs. 120 minutes for healthy subjects.
      ii. Gastric half-emptying time (T50) was shorter in diabetics than in healthy subjects: 49.8 vs. 58.6 minutes.
      iii. The conclusion was that such a carbohydrate-rich beverage could be safely administered 180 minutes before anesthesia without risk of either hyperglycemia or aspiration.

      i. Post-ingestion of a similar carbohydrate-rich solution, glucose levels were not significantly higher in the IR group (HOMA IR score >2.5) vs. the non-IR group.
      ii. Initially elevated insulin levels in the IR group tended to decrease to the levels of the non-IR group.
      iii. Cortisol levels were similar in both groups.
      iv. The conclusion was that the beverage did not adversely affect IR patients, that they could undergo surgery safely and that they could derive significant benefits from it.
5. Our partners at Duke University are comfortable about giving Type I diabetics Clearfast® because, like most anesthesia professionals, they would be carefully managing the glucose levels of these patients who would likely receive a pre-Clearfast® dose of insulin to “match the calorie load” and have their blood sugar levels monitored prior to the induction of anesthesia as well as several times during the course of surgery. The assumption is that gastric emptying in a “euglycemic” patient should be no different from a non-diabetic.

6. At the recent 2nd World ERAS Congress, Dr. Ronald Collins, the Project Lead for Enhanced Recovery for the International Health Authority in British Columbia, discussed the topic of “No more overnight fasting.” This included the question of whether diabetics, in general, are candidates for the shortened pre-operative fast and eligible for carbohydrate rich beverage loading 2-3 hours pre-op. He affirmed the Duke policy of routinely administering carbohydrate-rich beverages to Type I diabetics, assuming that tight glycemic control would be maintained at all times. He stated that the only exception among Type II (presumably non-insulin dependent) diabetics for similar management would be for those known to have a history of gastro-paresis.