



➤ Product Review ◀

June 2023 #371

MORE INFORMATION ON ELEMENTAL SELECT™ – NOW IN STOCK

(1) SOME THOUGHTS ON THE DEXTROSE CONTROVERSY

and

(2) SOME COMMENTS ON PATIENT MANAGEMENT AND INDICATIONS

SOME THOUGHTS ON DEXTROSE

Of all the constituents in **Elemental Select™**, probably the most controversial, given the anti-carbohydrate bias seen with many in both the public and the nutritional/functional medicine communities, is dextrose. Therefore, I would like to present some clarification as to why we chose to include dextrose in the **Elemental Select™** formulation and why its inclusion can provide benefits to your patients.

First, from a conceptual standpoint, it needs to be stated that, even though it has been much maligned due to the very ubiquitous excessive ingestion of poor-quality refined carbohydrates, carbohydrate, like the other two macronutrients (protein and fat) is an essential nutrient. Furthermore, while all three macronutrients are excellent energy sources, carbohydrate is the macronutrient that is most easily metabolized to a rapid, readily available energy source. Finally, it needs to be kept in mind that, of all the carbohydrates, there is only one “bioidentical” carbohydrate that the body

preferentially uses as an energy source, glucose. With that in mind, it is important to note that, as stated on the website, dictionary.com, dextrose is a form of glucose:

“Glucose refers to a sugar with several chemical forms. One of the forms is *dextrose* (also called *dextroglucose*), which is found in fruit, animal tissue, and other natural substances. In use, typically *dextrose* refers to this sugar when found in food, while *glucose* refers to it when it’s in the bloodstream.”

Given that we were aware that **Elemental Select™** will be used by many patients, at least in the short term if not longer, as a sole nutrient source because they cannot tolerate many, if not most, “healthy” foods, it was important to include all essential nutrients, including carbohydrate. Beyond being analogous to the only major sugar produced by the human body, glucose, what else can be stated in support of the use of dextrose in **Elemental Select™**? Consider the following from the paper “Oral dextrose gel for the treatment of hypoglycaemia in newborn infants (Review)” by Weston et al (Weston PJ et al. *Cochrane Database of Systematic Reviews*, Issue 5, Art. No. CD011027, 2016):

“Dextrose is rapidly absorbed by the gastrointestinal mucosa because it does not require digestion; it may then be taken up by the liver via the portal circulation and hence may have a more delayed effect on blood glucose concentrations.”

Two of the main concerns we have traditionally expressed in relation to carbohydrate sources in products such as **Elemental Select™** is that the carbohydrate will promote proliferation of dysbiotic organisms and will lead to

unacceptable elevations in serum glucose. As suggested in the above quote by Weston et al, due to its rapid absorption properties, dextrose has a lower probability of feeding dysbiotic organisms compared to other commercially available carbohydrate sources. In addition, as also noted by Weston et al, dextrose also has a lower probability of leading to unacceptable elevations of serum glucose compared to other commercially available carbohydrate sources.

Still another advantage of oral dextrose was pointed out by Shah et al in their animal study “Stimulation of the endogenous incretin glucose-dependent insulinotropic peptide by enteral dextrose improves glucose homeostasis and inflammation in murine endotoxemia” (Shah FA et al. *Trans Res*, Vol. 193, pp. 1-12, March, 2018). In their paper the authors were comparing the use of dextrose enterally (orally) versus intravenously, the way dextrose has been traditionally administered over the years:

“In our modal, continuous enteral dextrose infusion in endotoxemia mice...improved glucose disposal, increased insulin secretion, improved mean arterial pressure, and attenuated the systemic inflammatory response over 5 hours compared with continuous IV dextrose.”

Of course, with the above stated, I will readily admit that the benefits of dextrose can be easily negated by improper administration. Therefore, adherence to the information provided in the next sections on patient management and indications will play major roles in optimizing the benefits of dextrose and minimizing potential detriments.

SOME THOUGHTS ON PATIENT MANAGEMENT

Invariably, ingestion of a product such as **Elemental Select™** will lead to reports of GI distress immediately after consumption. Fortunately, as of now, I have only received one report. Of course, as with every other powdered product we produce, **Elemental Select™** will be inappropriate for some patients due to a whole variety of reasons ranging from

GI-related co-morbidities to individual patient preferences concerning taste and mouth feel. However, the most common causes of inappropriate, GI-related responses to the product are the following, which are easy to identify and correct:

The serving was not thoroughly blended – A product as complex as **Elemental Select™** requires fairly uniform disbursement of all constituents to assure maximum efficacy and patient tolerance. Generally, the best way to accomplish this is with a high-quality blender where the serving is blended for 30-60 seconds. Stirring with a spoon or quick mixing with a portable hand blender will almost always lead to unacceptable variations in ingredient disbursement throughout the serving, which can result in GI distress.

The serving was consumed too quickly – **Elemental Select™**, as was noted above, is a complex, highly concentrated product. In turn, rapid consumption can overwhelm digestive capabilities, particularly in those patients who already demonstrate compromised GI function. Historically, rapid consumption of all of our powdered products has been the most common cause of GI distress immediately after consumption. **Elemental Select™** is no exception. Therefore, for the average patient consuming **Elemental Select™**, who is generally someone whose digestive function is less than 100%, it is recommended that each 8 oz. serving of **Elemental Select™** be consumed using small sips, resulting in the entire 8 oz. serving being consumed in no less than ½ hour.

SOME THOUGHTS ON INDICATIONS

Concerning indications, as I mentioned above and in previous product newsletters, the primary intent of **Elemental Select™** is for use with patients who demonstrate such severe GI distress that comfortable and productive ingestion of virtually any food, no matter what the quality or quantity, is almost impossible on a routine basis. Under these circumstances,

usage can take two primary paths - short term and long-term use.

Short-term use

For those patients who truly cannot tolerate ingestion of any foods in any quantity no matter what their quality, **Elemental Select™** can be used, at least for a short time, as an excellent substitute for all food, thus giving the gut a rest, so to speak. However, from a practical standpoint, as was also discussed in the research quoted in past product newsletters, many patients' gut dysfunction is not severe enough to require usage of **Elemental Select™** as a sole nutrition source, which can be difficult from a compliance standpoint. Under these circumstances, the **“partial enteral nutrition”** approach can be utilized where 1-3 servings per day of **Elemental Select™** are recommended along with some high-quality food. Of course, the daily doses of **Elemental Select™** will vary under these circumstances based on how much solid food the patient can tolerate.

Ultimately, though, the goal from a short-term use perspective is to transition the patient to a high-quality diet that requires little or no nutrient supplementation. Unfortunately, in contrast, the “in the trenches” reality for many patients, for reasons ranging from compliance issues to GI dysfunction that has progressed too far for too long, is that they will require long term nutrient supplementation along with the best attainable quality, whole foods diet. With this situation, **Elemental Select™** will also be an excellent supplement choice.

Long-term use

Interestingly, the vast majority of studies on **“exclusive enteral nutrition”** and **“partial enteral nutrition”** only considered these modalities from a short-term perspective. Does documentation exist suggesting the efficacy of long-term use of a product such as **Elemental Select™**? As noted in the paper “Effectiveness of an ‘half elemental diet’ as maintenance therapy for Crohn’s disease: a randomized-

controlled trial” by Takagi et al (Takagi S et al, *Aliment Pharmacol Ther*, Vol. 24, pp. 1333-1340, 2006), the answer is yes. In this study, 51 documented Crohn’s disease patients who were in remission were evaluated. 26 of the patients were randomly assigned to a group ingesting a “half elemental diet” where 900-1200 kcal per day were consumed as an enteral nutrition product. The other half of the daily diet consisted of foods freely chosen by each patient. The other 25 patients in the “free diet group” ingested a diet entirely of their own choosing. The outcome being researched by the authors was Crohn’s disease relapse over a two-year follow-up period. However, due to loss of contact with some of the study participants, mean follow-up was actually 11.9 months, still a significant duration of follow-up compared to the studies I have mentioned in previous segments of this series. What were the findings? Consider the following:

“The relapse rate in the half elemental diet group was significantly lower [34.6% vs. 64.0%...] than that in the free diet group after a mean follow-up of 11.9 months.”

Concerning possible side effects from long term use, the authors reported:

“No adverse event occurred in any of the patients throughout the study.”

These findings led Takagi et al to conclude:

“This randomized-controlled trial shows the effectiveness of a half elemental diet, which is a promising maintenance therapy for Crohn’s disease patients.”

Thus, as you can see from the Takagi et al paper, **Elemental Select™** can be safely and confidently used as a long-term support product in addition to implementation of the best possible whole foods diet from both a physiologic, practical, and patient compliance standpoint.

**Another potential use of Elemental Select™ –
Use with patients consuming one or more
medications.**

Another important potential use of **Elemental Select™** is with patients who may be consuming one or more prescription or over-the-counter pharmaceuticals. A key fact about all of our other powdered meal supplement products, **Select Cleanse®**, the **Amino Meal Select™** products, and the **SarcoSelect®** products, is that they contain one or more herbal ingredients that have the potential to interact with various pharmaceuticals in some way, shape, or form. For example, Meriva, the bioavailable curcumin found in the **SarcoSelect®** products, can have a significant impact on the activity of detoxification enzymes that metabolize many drugs, which could, potentially, increase metabolism of a drug, leading to a lower circulating amount, or potentially decrease metabolism of a drug, leading to a higher circulating amount. The result would be, with the former, a possible decreased efficacy of the drug. With the latter, the potential impact would be potentiation of the activity of the drug. As you might guess, both scenarios could potentially have a detrimental impact on patient health.

As indicated in the June 2023 **Moss Nutrition Report**, use of one or more drugs by many of our patients has been rising substantially over the years. Therefore, we felt it was important to have a meal supplement product in our repertoire that you could use with the increasing number of patients using over the counter or prescription drugs without concerns of interactions with herbal constituents. **Elemental Select™** qualifies in this regard since it is a pure nutrition product containing macro- and micronutrients only with no bioactive herbals.

Of course, some patients may counter this recommendation by stating that **Elemental Select™** is much more expensive than **Select Cleanse®**, the **Amino Meal Select™** products,

and the **SarcoSelect®** products. From a cost per serving standpoint the cost is actually about the same as the **Amino Meal Select™** and **SarcoSelect®** products since each jar of **Elemental Select™** contains 30 servings, about twice that contained in the **Amino Meal Select™** and **SarcoSelect®** products. Also, since each jar of **Select Cleanse®** contains 21 servings, each serving of **Elemental Select™** is still an excellent value.

**Elemental Select™ 1.04 Kg (2.3 lbs.)
30 servings**

