

Impact of a Novel Pre-Digested Fat Medical Food on Weight Gain in Pediatric Patients With Malabsorption

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BACKGROUND

Weight loss and difficulty gaining weight are common among pediatric patients with malabsorption. Fat malabsorption is particularly challenging because fats do not readily mix with the water-based environment of the gastrointestinal tract.

A medical food (MF) (Seracal™, Pennsylvania) consisting of pre-digested fat—containing Lym-X-Sorb which has essential fatty acids, monoglycerides, and choline-rich phospholipids (lecithin)—has previously been used in cystic fibrosis to enhance fat absorption.

This MF is provided as a powder that can be mixed into food or administered via feeding tube. Each tablespoon (T) contains 17.5 kcal, 1.75 g carbohydrate, 1.1 g fat, 0 g protein, and 40 mg choline. The recommended pediatric dose is 4–12 T per day.

The aim of this study was to evaluate whether pediatric patients with malabsorption from conditions other than cystic fibrosis would achieve weight gain and tolerate the addition of MF to their daily intake.

SCIENCE OF LYM-X-SORB®

A precise blend of 3 lipid ingredients that self-assemble into a unique crystalized form, enhancing absorption.

- Long-Chain Fatty Acids, including omega-3 alpha-linolenic acid (ALA) and omega-9 oleic acid
- Monoglyceride high in omega-6 linoleic essential fatty acid
- Choline-containing lecithin that the body recognizes as a bile component and recirculates for increased absorption

Suggested serving size: ¼ cup = 4 T

Pediatric (1 -11 yrs) - up to ½ cup per day

Adult – up to ¾ cup per day

Nutrition Facts	
15 servings per container	
Serving size 1/4 cup, leveled (13g)	
Amount Per Serving	
Calories 70	
% Daily Value*	
Total Fat 4g	5%
Saturated Fat 0.5g	3%
Trans Fat 0g	
Polyunsaturated Fat 2g	
Monounsaturated Fat 1g	
Cholesterol 0mg	0%
Sodium 110mg	5%
Total Carbohydrate 7g	3%
Dietary Fiber 0g	0%
Total Sugars 0g	
Includes 0g Added Sugars	0%
Protein 0g	
Vitamin D 0mcg	0%
Calcium 0mg	0%
Iron 0mg	0%
Potassium 0mg	0%
Choline 160mg	30%

INGREDIENTS: TAPIOCA, MALTODEXTRIN, MONOGLYCERIDES, SOY LECITHIN, WATER, NATURAL FLAVORS, LINOLENIC ACID, BAKING SODA, OLEIC ACID, CALCIUM CHLORIDE, MIXED TOCOPHEROLS AND ROSEMARY EXTRACT (FOR FRESHNESS)
CONTAINS: SOY

METHODS

Pediatric patients (Ages 1-14) with malabsorption due to intestinal failure (IF), short bowel syndrome (SBS), failure to thrive (FTT), or other conditions that impair nutrient absorption followed at a single clinic were enrolled in this retrospective, non-blinded study. The study was approved by the Broward Health IRB.

Administration of the MF:

- For those receiving exclusive gastrostomy tube (GT) feedings, the MF was mixed with a small amount of water and administered immediately before the formula.
- For patients consuming food orally, the MF was mixed into meals.
- Those receiving a combination of GT feeds and oral intake received the MF by both routes.

RESULTS

- **Thirty patients were enrolled.**
- **5 discontinued the MF due to vomiting or diarrhea and were excluded from analysis.**
- **Among the 25 patients included:**
 - Average age was 6.8 +/- 4 years/ 15 were male
 - Primary diagnoses included IF/SBS (n=11) and FTT (n=7)
- **Nutrition support modalities:**
 - Parenteral nutrition (n=9)
 - Tube feeding (n=15)
 - Oral intake (n=18), or combinations thereof

WEIGHT / INTAKE DATA (mean +/- SD)

- **Initial weight (kg): 17.34 +/- 9.0**
- **Final weight (kg): 19.14 +/- 9.0**
- **Average time of MF use: 7.04 +/- 3.2 months**
- **MF intake/day: 8.9 T +/- 4.3 (n= 24)**
- ✓ **An average weight gain of 1.8 kg was achieved.**
- ✓ **Only one patient failed to gain weight.**

SUMMARY AND IMPLICATIONS FOR PRACTICE

Use of this novel medical food was generally well tolerated and resulted in approximately 10% weight gain over less than 7 months in pediatric patients with malabsorption. These findings suggest that MF may be an effective adjunctive strategy to improve growth in this challenging population.



Oral
Meals/Snacks/Soft foods



Enteral
via Tube Flush



Parenteral
to increase calories, help wean from PN

