IFSO

XXIX IFSO World Congress

1-4 September 2026 | Toronto, Canada

Sept 2, 14:00-15:30

Guarding the Micronutrient Gap: B1 deficiency case study

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TORONTO2026

The Future of Obesity Management:
From Weight Loss to Health Gain

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Disclosure Slide

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Company Name	Honoraria/ Expenses	Consulting/ Advisory Board	Funded Research	Royalties/ Patent	Stock Options	Ownership / Equity Position	Employee	Other (please specify)
Various attorneys	√	case review as expert witness for nutrition-related malpractice						

Vitamin B1 deficiency case study

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29 yr female 64”,141.8 kg (312.6 lbs) BMI: 46.36, had LRYGB with 3 subsequent ED visits, 2 with in-pt admissions, 1 lap chole, all within 90 days post-MBS ultimately lost 49 kg (107) lbs to 93 kg (205 lbs) in 18 months with resolved parasthesia,OSA and GERD.

Main Symptoms and important clinical findings:

- Poor PO intake, n/v
- Dizziness, lightheaded
- Paresthesia progressing to dependence on a walker for mobility.

Primary concerns and symptoms of the pt:

- 11 days after lap chole, she lost sensation from her torso down – had to use a walker. It felt like she was dragging cement blocks upstairs
- Chronic nausea, not tolerating food or vitamins

Timepoint	Weight / %TBWL	Dx	Findings	Key outcome
MBS March 3	141.8 kg (313 lbs)	OSA, GERD	HHR	**LRYGB**
ED # 1 (POD 26) March 29 **1 month**	132.7 kg (292 lbs)	epigastric pain, nausea, poor PO, light-headed, tachy	Dehydrated, altered electrolytes cholelithiasis, other tests neg/ (had 2l fluids last wk at infusion ctr)	Given fluids: LR and 3 bags (1 L each) D5 NaCl 0.9% IV (total 150gm CHO) discharged home with added protonix No B1 lab ordered or given discharged home with zofran
ED #2 w/ admission (POD 68) May 4-10 **3 months**	122.5 kg (270 lbs)	RUQ abdom pain & intractable nausea	Symptomatic cholelithiasis EGD neg for ulcer	**Lap chole on POD 71** Given fluids, KCl Discharged 4 days after lap chole with scopolamine patch x 10 days, Carafate TID x 30 days, Zofran, antivert prn
ED #3 w/ admission (POD 82) May 18-23	No new wt	pt c/o couldn't stand up d/t dizziness; paresthesia after lap chole; NO abdom pain	B1Lab on POD83 IVB1 on POD82	It was determined that the patient's symptoms were not due to a vitamin deficiency. B1 wnl, but gave IV B1 100 mg QDx4D "not vit deficiency" discharged with continued parasthesia; rx PT and see neurologist

Time-point	Weight / %TBWL	Event	Complaint & Triage	Key outcome
March 21 3 wks POD18	n/a	Phone call by pt to **NP**	Poor PO fluids(16 oz) d/t sore throat and constant nausea; no vomiting	Zofran change from Q 24 hrs to Q8 prn Denies other symptoms & agrees to go to ED if symptoms worsen
March 22 POD19	n/a	**NP** call to pt	Continued nausea, dizziness, intermittent blurry vision; Voids TID, but dark urine	IV fluids normal saline (no B1 or anything else) CMP & CBC collected pre-IV (no B1 ordered) **BARRIER: No B1 lab/ IV ordered**
March 24 POD21	135.6 kg (299 lbs)	Phone call by pt to **RD**	Continued nausea, no v/d PO ~ 12 oz fluids daily, voids TID dark urine	Pt stopped taking vits & turns out her bari mvi didn't meet minimum 12 mg B1; pt did not take a daily mvi during pre-op liquid diet
March 29 POD26	132.7 kg (293 lbs)	In-person visit with **NP**		**Sent to ED** **BARRIER: No B1 in IV**
April 6 POD34	130.9 kg (289 lbs); -24 lbs,8.8% TWL	In-person visit with **surgeon**	Continues to have intermittent dizziness, occ blurry vision & light headedness with chronic nausea & epigastric pain	F/u with GI, assess for marginal ulcer and/ or cholelithiasis. Add scopolamine patch, Carafate See RD for food textures. **BARRIER: B1 defic – not considered**

Time-point	Weight / %TBWL	Event	Complaint: BARRIER	Key outcome
May 4-10	122.5 kg (270 lbs)	ED/ Admission	Intractabile n/v, cholelithiasis, hypokalemia	**Lap Chole May 7**
May 6 POD64	122.5 kg (270 lbs)	**RD** chart review	documents "noted no B1 in pt IV fluids; pt needs IV B1 500 mg daily & mag, potassium, phos" writes rec by CPG and amounts per route	Uses HER to text & forward chart & rec to surgeon, NP, **because RD has no authority to rx B1** **BARRIER:** Surgeon, NP and inpt RD didn't see communication
May 7	122.5 kg (270 lbs)	In-pt **RD**	RD has calculated kcal/ pro needs on initial 141.8 kg/ 313 lbs not current wt	Reviews labs: PAB 17.8 (should be > 25), Alb 2.4, potassium 3.3 others wnl; Notes: + nausea, last BM 1 wk ago, good grip strength; Mod pro-kcal malnutrition with 14% wt loss in 2 months; Pt is getting D5 0.45% with Kcl 2– meq/L IV **Barrier: NO B1 is recommended or ordered**
May 18 POD76	No new wt	**RD** telehealth	Parasthesia & clear emesis; pt reports she has not been taking b mvi x 2 months n/	**Refers to surgeon/ NP – sent to ED**
May 18-23		ED/ Admission	Parasthesia NO abdom pain	**B1 lab & IV is ordered** 100 mg B1 IV with 1 mg folic acid and 10 ml mvi on May 19; labs drawn on May 19 - B1

BARRIER: Lab result is artificially wnl!!!

Pre-op

Barrier: Artifical wnl B1

Labs: signs and symptoms are the best indicator of vitamin sufficiency not labs...

Component	8/19/2021	5/19/2022	6/22/2022
Vitamin B12			688
Folate, Serum			5.6
Vitamin B1, Whole Blood (78-185 nmol/L)	79	110	93

Time-point	Weight / %TBWL	Event	Complaint	Key outcome
3 months June 7	116 kg/ 255 lb	*telehealth with* ***surgeon***	Tolerting fluids; has pins & needles in lower & upper extremities – using a walker	Etiology is unclear; gi symptoms have largely resolved; now tolerating diet & keeps vitamins down. "Unlikely she has vit defic since she received IV vits during her last several admissions & now back on vit regimen." Plan: neurology consult & labs **BARRIER: Knowledge & communication issues**
4 months July 5	116 kg/ 255 lbs; -58 lbs; 18.5% TWL	*telehealth with* ***RD***	 Has been taking daily bari mvi	– noticed changes in symptoms after beginning bari mvi (50mg B1): legs < heavy & able to walk up stairs without SOB, less intense tingling; feels stronger, PO intake improved- able to get adequate fluids and protein; uses a daily pro supp & veg/ fruit **Still has paresthesia** Plan: begin PO 100 mg b1 TID x 1 week and then 100 mg daily with continued mvi and supp regimen
~5 months July 26	113kg/ 249 lbs	*telehealth with* ***surgeon***	Doing PT x2/wktaking bari mv and B1	Numbness improving; ambulating independently [illegible] work.
5 months Aug 1	112 kg /247 lbs; - 64 lbs, 20.4% TWL	*telehealth with* ***RD***	Has been taking daily bari mvi & 100 mg B1 TID	**No need for walker** after July 5 visit and start of B1 rx; "n[illegible] more dragging cement blocks"; up the stairs in seconds now; tingling almost completely gone except for left big toe Plan:rx B1 100 mg daily along with other vitamins; continue regimen

Summary

- Labs were wnl, including low-norm B1, but symptoms were positive for micronutrient deficiency
- B1 lab trend is meaningless without pt history and MDT to triangulate findings.

Quest	8/19/2021 0828	5/19/2022 0335	6/22/2022 0950	12/23/2022 0818	4/20/2023 1202
Vitamin B1, Whole Blood (78-185 nmol/L)	79	110	93	**201 (H)**	104
Time frame	Pre-op	s/p			

Take home message

Labs are not definitive, in fact they created more unanswered questions – In this case, the **B1 lab** was a – **Barrier to identification and treatment**

Facilitator for identification of micronutrient deficiency and treatment **– knowledge of B1 deficiency symptoms.**

XXX IFSO WORLD CONGRESS

"Advancing Multimodal Obesity Care"

24-27 August 2027

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See you in

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References

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Xtra slides

Signs	Symptoms	Both
Excess weight loss	Fatigue	Cold / feeling cold
Hypothermia	Lethargy	Confusion
Hypotension	Anger / irritability	Memory issues
Tachycardia	Depression	Apathy
Cardiomegaly	Psychosis	Executive dysfunction
Edema	Nausea	Mood instability
Nystagmus	Vomiting	Hallucinations
Papilledema	Anorexia / loss of appetite	Syncope / fainting
Oculomotor dysfunction	Early satiety	Dyspnea / shortness of breath
Ptosis	Abdominal pain	Diplopia / double vision
Decreased visual acuity	Tingling	Seizures
Hearing loss	Numbness	Coma
Ataxia / wide-based gait	Muscle cramps	Constipation
Immobility	Weakness / flaccidity	Poor oral intake
Temporal wasting	Paralysis	Word-finding difficulty
Trip/falls observed		Impaired focus / concentration
		Cardiovascular symptoms/arrhythmia awareness
		Unsteadiness
		Paresthesias
		Ophthalmoplegia

Nutritional priorities to support GLP-1 therapy for obesity: a joint Advisory from the American College of Lifestyle Medicine, the American Society for Nutrition, the Obesity Medicine Association and The Obesity Society

Mozaffarian, et al., 2025

Take a daily multivitamin and mineral supplement for prevention!

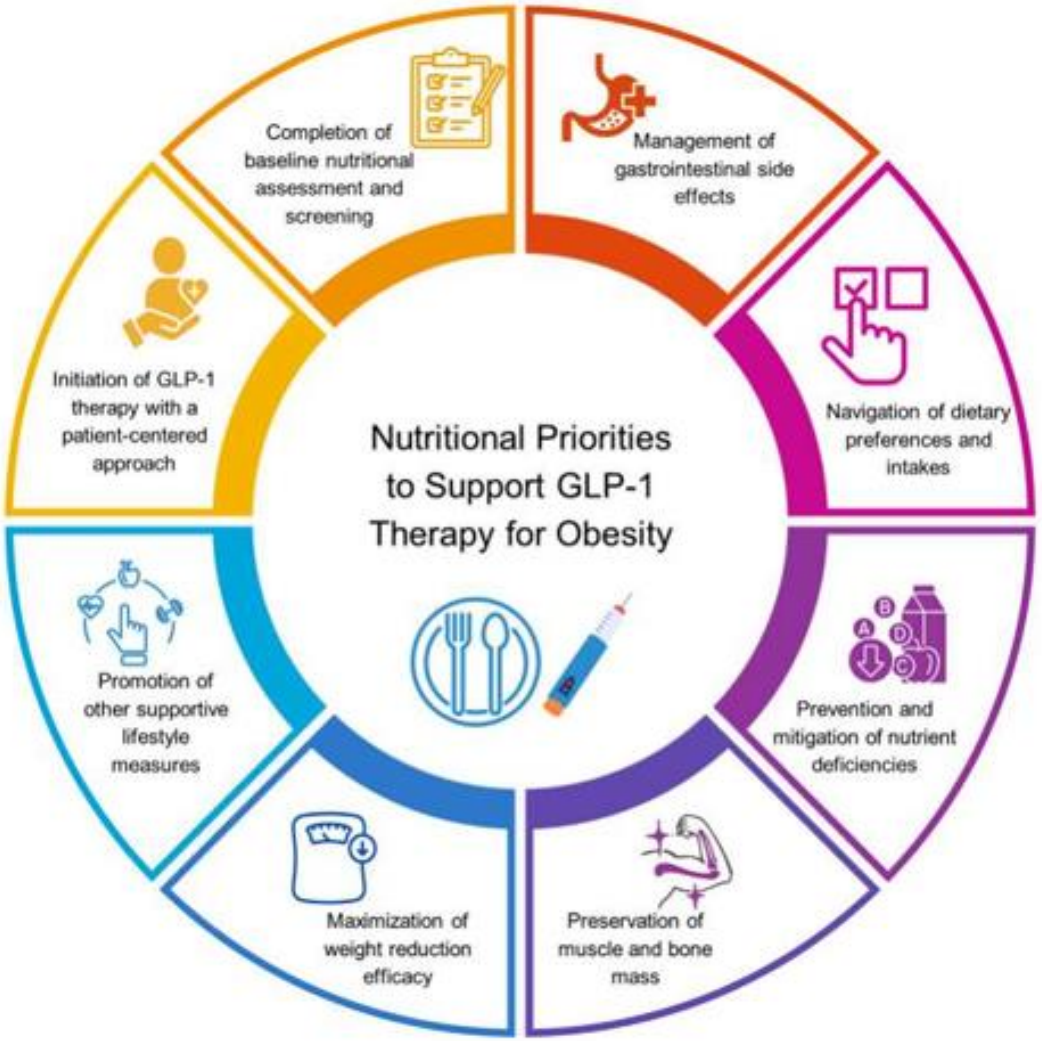

FIGURE 1. Key elements of nutritional priorities to support GLP-1 therapy for obesity.