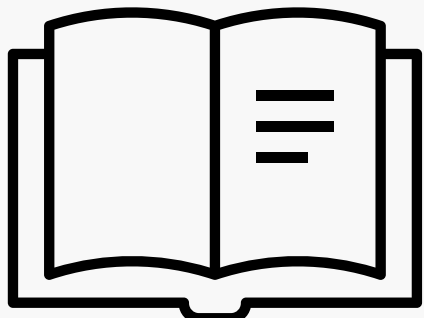


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Background

- Obesity (BMI ≥30 kg/m) increases intraoperative difficulty and postoperative complications.
- Preoperative low-energy diets (LEDs) are standard in bariatric surgery for preoperative weight loss.
- Evidence in non-bariatric surgery is limited and of low quality.

Evidence Gaps:



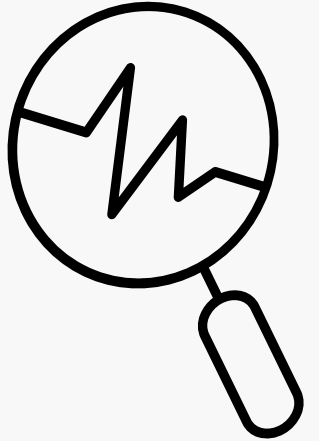
- No adequate RCT evaluating LED before major non-bariatric surgery
- Feasibility of trial unknown

Objective:

To determine the feasibility of a multi-centered RCT evaluating preoperative LED diets in patients with BMI ≥30 kg/m² undergoing major non-bariatric surgery.

2

Methods



Study Design

- Multicenter, 1:1 parallel pilot RCT (Canada, 4 sites)
- Registered on CTO: NCT03935451



Blinding

- Surgeon
- Outcome assessor
- Statistician

Intervention:

- LED group
 - 3-week 920kca/day total diet replacement with Medimeal®
 - 4 meal replacements every/day
 - Up to 2 cups of non-starchy vegetables daily + zero-cal fluids
- Control
 - Standard preoperative care

Outcomes

1

Feasibility outcomes: recruitment rate, randomization percentage, adherence, f/u completion.

2

Clinical outcomes: Pre-op weight change, waist circumference, grip strength, 30-day morbidity.

Statistical Analysis

- Descriptive analyses with 95% confidence intervals
- Random-effects meta-analysis (DerSimonian–Laird) reporting risk ratios (RR) with 95% CI and I²



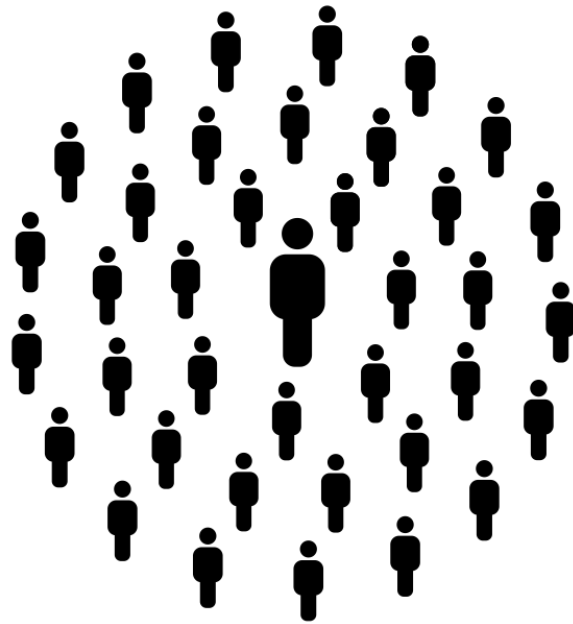
Patients older than 18 years of age with BMI≥ 30 kg/m² undergoing elective non-bariatric surgery.

- Recruitment required≥ 3 weeks before surgery



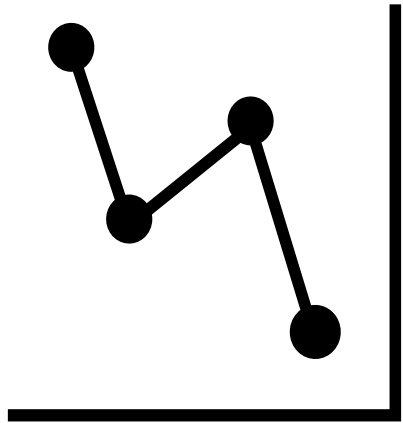
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Conclusions



Randomization:
373 patients screened → 91 randomized

LED Group: n=45 Control Group: n=46



Clinical Outcomes:

- LED Group
- Lost significantly more weight (mean difference of 4.6kg) (95% CI 3.5–5.6 kg)
- Waist circumference decreased by 3.6cm more than in the control group
- Grip strength preserved

Feasibility Outcomes :

↓

Recruitment Rate: 9.4 patients/month (below target)

↓

Follow-up completion: 89% (below 90% threshold)
(89%, 95%CI 80.7-94.6%)

✓

LED adherence: 81.7% (met feasibility criteria)
(95%CI 74.1-89.3%)

∴ Yellow-light (57.3% of eligible patients consented)
(95%CI 51.4-63.1%)

Meta-Analysis Results:

RCTs included (n=5)
Pooled analysis demonstrated an 18% relative risk reduction in 30-day postoperative morbidity, favouring LEDs.
(RR 0.82, 95% CI 0.52–1.28; I²=0%)

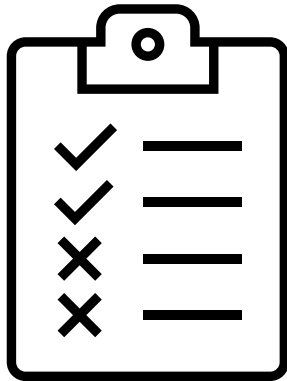
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Conclusions



VLE diets in non-bariatric surgery patients were **safe, well-tolerated, and produced meaningful short-term weight loss** without grip strength loss.

RCT results showed potential **reduction of postoperative morbidity.**



Although recruitment and follow-up targets were unmet, adherence was acceptable, and feasibility may improve with more sites and protocol adjustments.

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