Bright Light Therapy Post-Bariatric Surgery Enhances Mood, Well-Being, and Patient Empowerment to Manage Chronic Disease: A Pilot Study

ALBANY MEDICAL COLLEGE
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Akash Koul, MBA[1], Sarah Duggan, B.A.[1], Marc Perlman, M.D., M.B.A.[2], Jessica Zaman, M.D. [1]

Albany Medical Center, Wake Forest University School of Medicine

Introduction

Bright light therapy **(BLT)** has numerous scientific benefits including:

- Accelerating weight loss, specifically body fat loss
- Improving disordered-eating behavior, mood, and sleep
- Improving exercise outcomes

This is a pilot study aiming to assess the effects of BLT on post-operative bariatric surgery patients

The population recruited for this study **included 2-week to 6-month post-operative bariatric surgery patients.** The patients recruited for this study had the following characteristics:

- Between the ages of 18-90
- Received medical care at the Albany Medical Center Bariatric Clinic
- Have received **gastric bypass, revision or gastric sleeve surgery**

Current results are preliminary from June 2023 – September 2024

Intervention

- Patients were instructed to use **the lamp 20 minutes daily over a 12-week duration for 3 months**
- **Psychometric Surveys administered**
  - Modified Personal Inventory for Depression and SAD (PIDS) measuring seasonal depressive symptoms.
  - A self-reported motivation towards weight loss measure
  - An abbreviated Profile of Mood States questionnaire (POMS)
  - Simplified Nutritional Assessment Questionnaire (SNAQ) assessing appetite
  - Stanford self-efficacy for managing chronic disease (SEMCD), assessing patient confidence in disease management

Preliminary Results

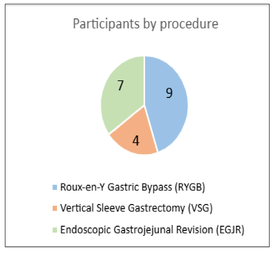


Figure 1. Participants grouped by procedure received. There were a total of **20 patients. 9** had **Roux-en-Y Gastric bypass (RYGB), 7** had **endoscopic gastrojejunal revision (EGJR),** and **4** had **vertical sleeve gastrectomy** (**VSG**).

Preliminary Results

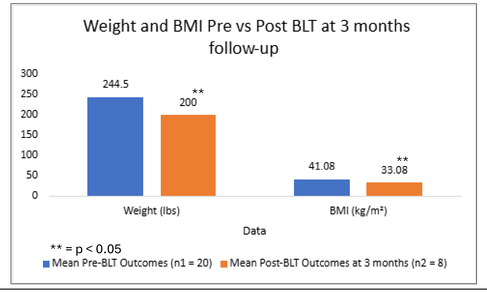
Table 2. Demographics and characteristics of the **twenty patients** who participated in the study from July 2023 to September 2024 . The study had 13 Caucasian, 3 Latino, 2 Black, 1 Native American, and 1 Asian participants. **There were no statistical differences in results based on age, race, education, or existing comorbidities**

Percentage of Patients with Select Comorbidities	
Hypertension	30%
Hyperlipidemia	50%
GERD	30%
Depression	60%
Diabetes	25%
Educational level	
HS/GED	8
Some college	3
Bachelor's	4
Graduate's	3
Associate's	1
Vocational	1
Demographics (n=20)	
% Caucasian	65%
Average age (years)	44.3

Table 3. Mean usage per week, usage per day, and duration of use for the reported **8 participants**, demonstrating **compliance** with **mean lamp utilization reported 6.4 days per week, 19 minutes per day for 2.48 months.**

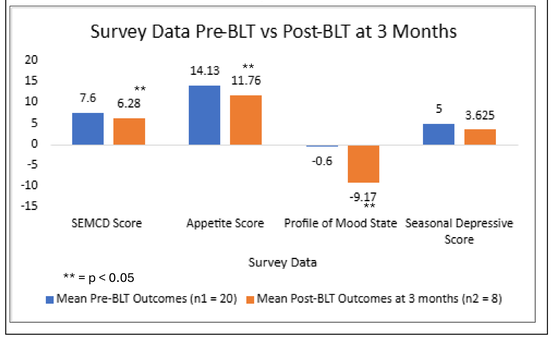
BLT Compliance (n=8)	
Usage Per Week	6.4 days
Usage Per Day	19 Minutes
Duration of Use	2.48 months

Figure 2. Weight and BMI Pre-BLT vs Post-BLT at 3-month follow-up. Patients **in the BLT arm had significantly lower weights and BMIs** (weight= **244.5lbs vs. 200lbs, p<0.05; BMI = 41.08 kg/m2 vs. 33.08 kg/m2, p<0.05**) compared to patients **before BLT treatment.**



Preliminary Results

Figure 3. Survey data for pre-intervention (n=20) vs. post-BLT intervention (n = 8) at 3-month follow-up. **After BLT treatment**, patients had **significantly higher SEMCD scores**, showing more willingness to **engage in their chronic disease** (7.60 vs. 6.28, p< 0.05). They also had **lower appetite scores** (14.13 vs. 11.76, p<0.05) and **higher positive mood** (-0.6 vs. -9.17, p<0.05) as a **more negative POMS score correlates to more positive mood state**.



Conclusions and Future Directions

- Following BLT, patients were **more confident** in their ability to **manage their chronic conditions**, indicating that **patients may be able to better maintain their lifestyle modifications and attain long-term weight loss success**
- Patients also **reported increased appetite after their surgery, consistent with typical post-operation outcomes**
- **Increased motivation and positive mood states were seen as well**, suggesting **that BLT may improve depressive mood and increase motivation for weight loss**
- Future studies should **examine the effects of BLT on bariatric surgery populations with a larger sample size**
- Limitations:
  - **Lack of consistent follow-up for appointments**
  - **Other confounders with bariatric surgery, such as behavioral compliance with lifestyle changes and variable physiological post-bariatric surgery changes**