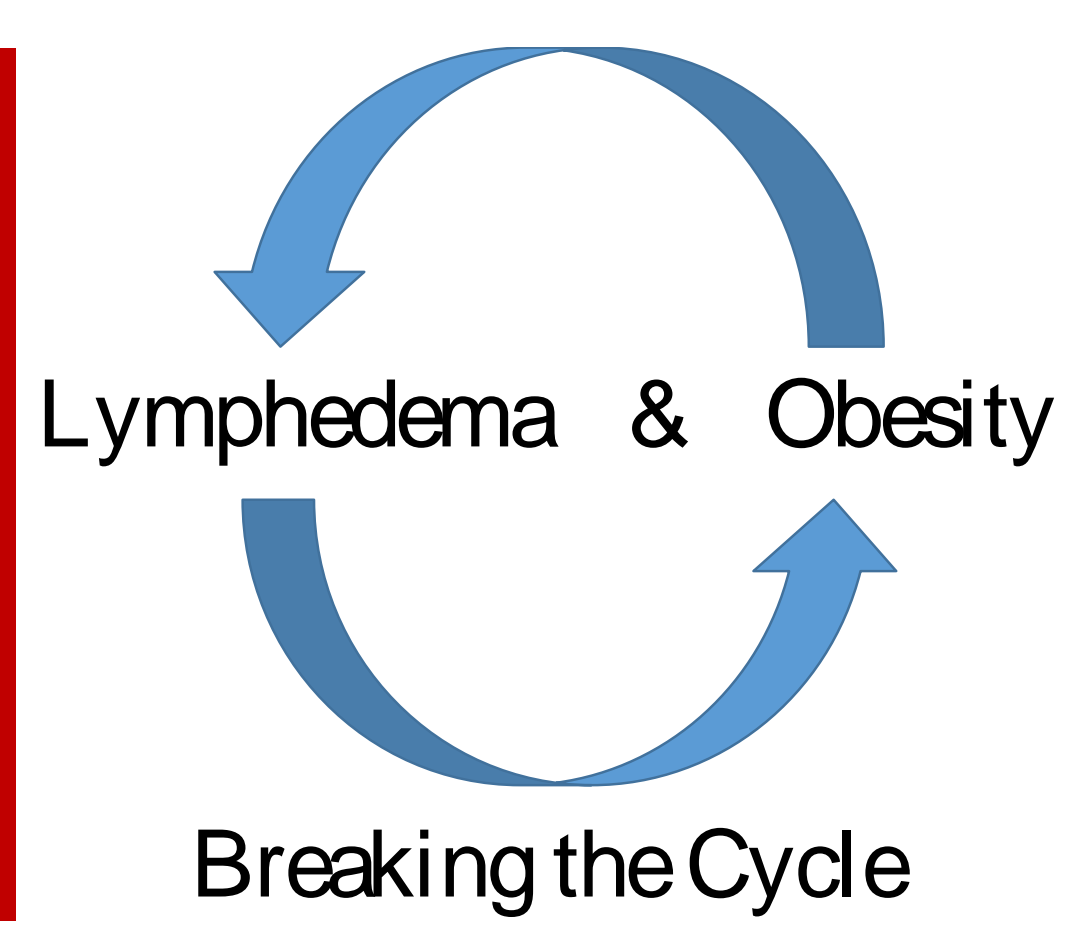




# Lifestyle Modification Group for Lymphedema and Obesity

## Results in Significant Outcomes

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### INTRODUCTION

- Lymphedema and obesity commonly co-occur complicating treatment and prolonging disability (Fife & Carter, 2008). Therefore, finding effective and efficient interventions for simultaneous treatment of these issues is critical for reducing disability.
- Meaningful weight reduction requires sustained alterations of diet (Westman, et al., 2007) as well as other lifestyle changes (Westman & Steelman, 2010), while effective lymphedema management requires strict adherence to daily self-care strategies such as skin care, self-manual lymph drainage, and wearing compression garments (Brown, Cheville, Tchou, Harris, & Schmitz, 2014). However, such lifestyle modification has been very difficult for individuals to achieve.
- Research suggests that lifestyle modification groups can be an effective and efficient way to assist people with weight loss (Digenio, Mancuso, Gerber, & Dvorak, 2009). Weight-loss outcomes have been sustained the longest when there is continued contact either in person or virtual (Riebe, et al., 2005).
- The efficacy of a lifestyle modification group approach has never been tested in the population with lymphedema who are also obese. It is important to test the efficacy of such an intervention in this population due to the added complexity of lymphedema management in this group.

### METHODS

10 subjects participated in a lifestyle modification program, inspired by USC's Lifestyle Redesign®.

#### Participant Baseline Characteristics

Subject	age	gender	Weight* (pounds)	Waist Circumference* (centimeters)	% Body Fat*	BMI*	Affected Limb
1	70	Female	197.27	96.17	34.4	31.33	Bilateral Legs
2	67	Female	225.7	108.5	41.4	41.33	Bilateral Legs
3	70	Male	388.57	157.17	33.9	54.20	Bilateral Legs
4	69	Female	202.77	101	41.03	33.23	Bilateral Legs
5	68	Female	288.03	136.67	44.53	45.17	Bilateral Legs
6	66	Female	208.7	106.67	39.47	32.73	Unilateral Arm
7	57	Female	214.3	122.83	43.53	39.23	Bilateral Legs
8	68	Female	224.37	96.33	42.67	35.17	Bilateral Legs
9	66	Female	207.63	107.33	42.93	34.07	Bilateral Arms
10	66	Female	217.43	99.83	44.2	37.33	Bilateral Legs
Mean (SD)	66.7 (3.74)		237.48 (58.85)	113.25 (19.94)	40.81 (3.83)	38.38 (7.02)	

\*These are averages of the 3 baseline measures

#### Outcome Measures:

- Body Weight
- Limb Volume
- Lymphedema Life Impact Scale (LLIS) – lymphedema-related quality of life

Data were collected prior to the intervention at three baselines, each two weeks apart, and twice post-intervention (within one week of the last group session and one month post-intervention).

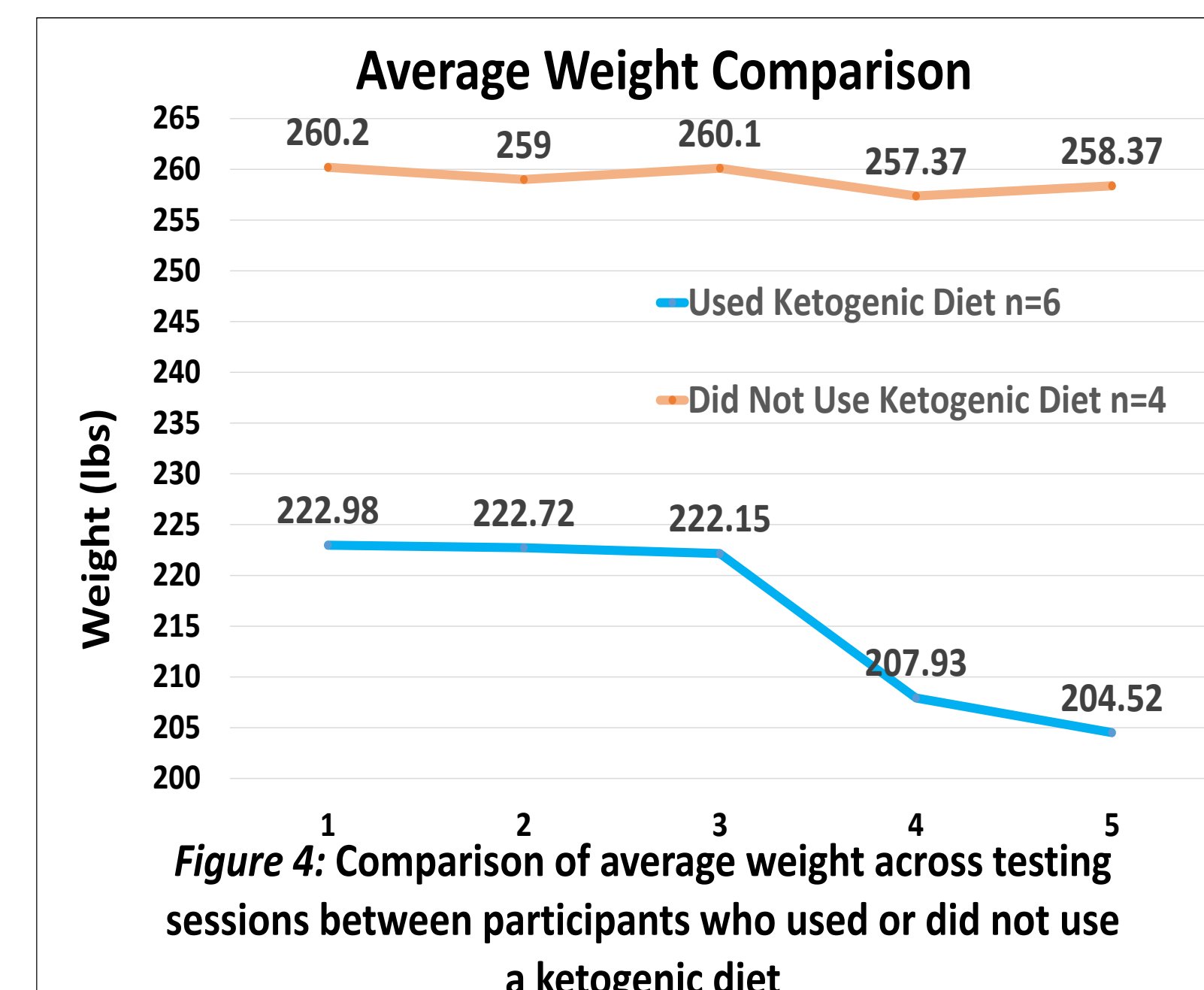
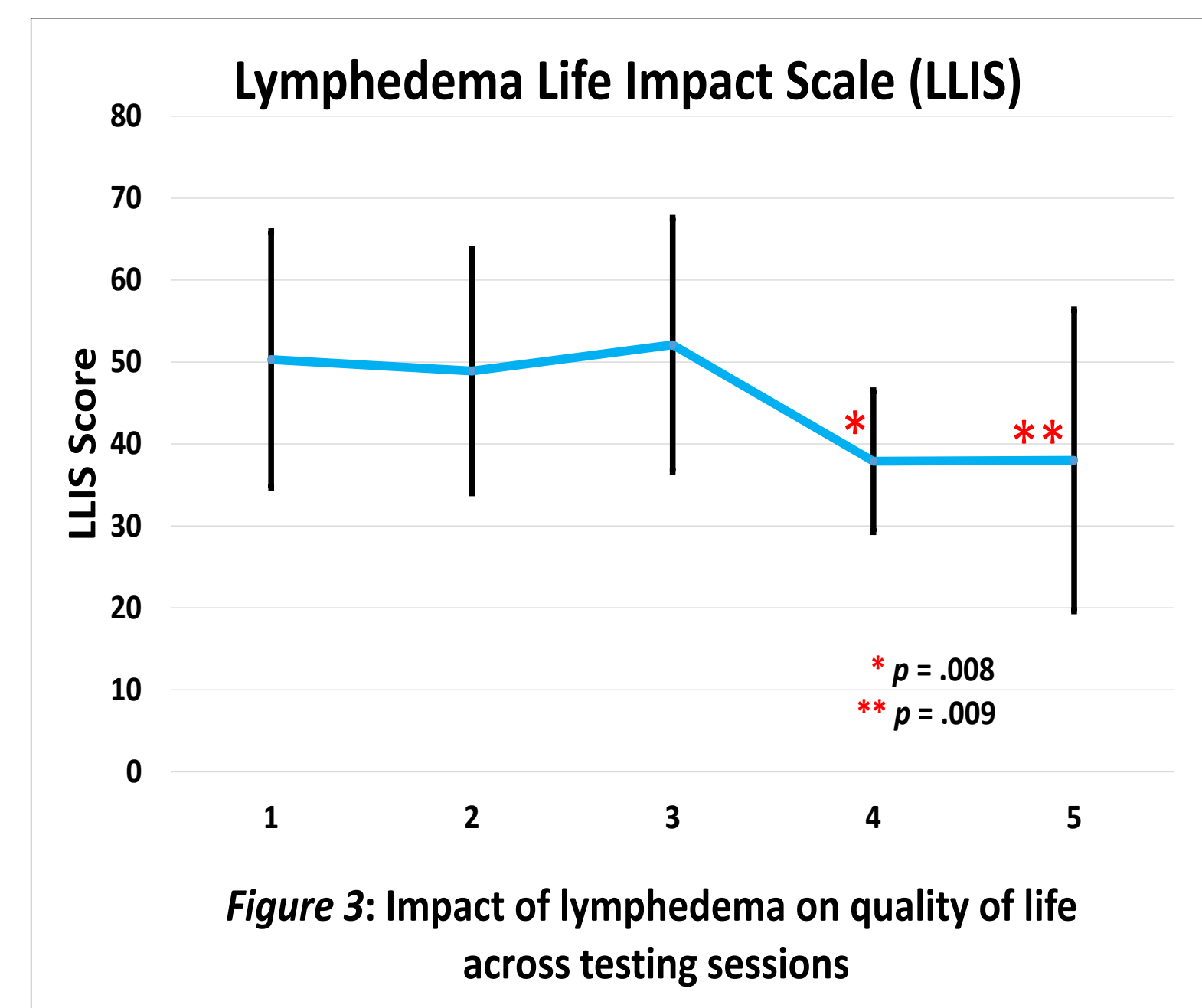
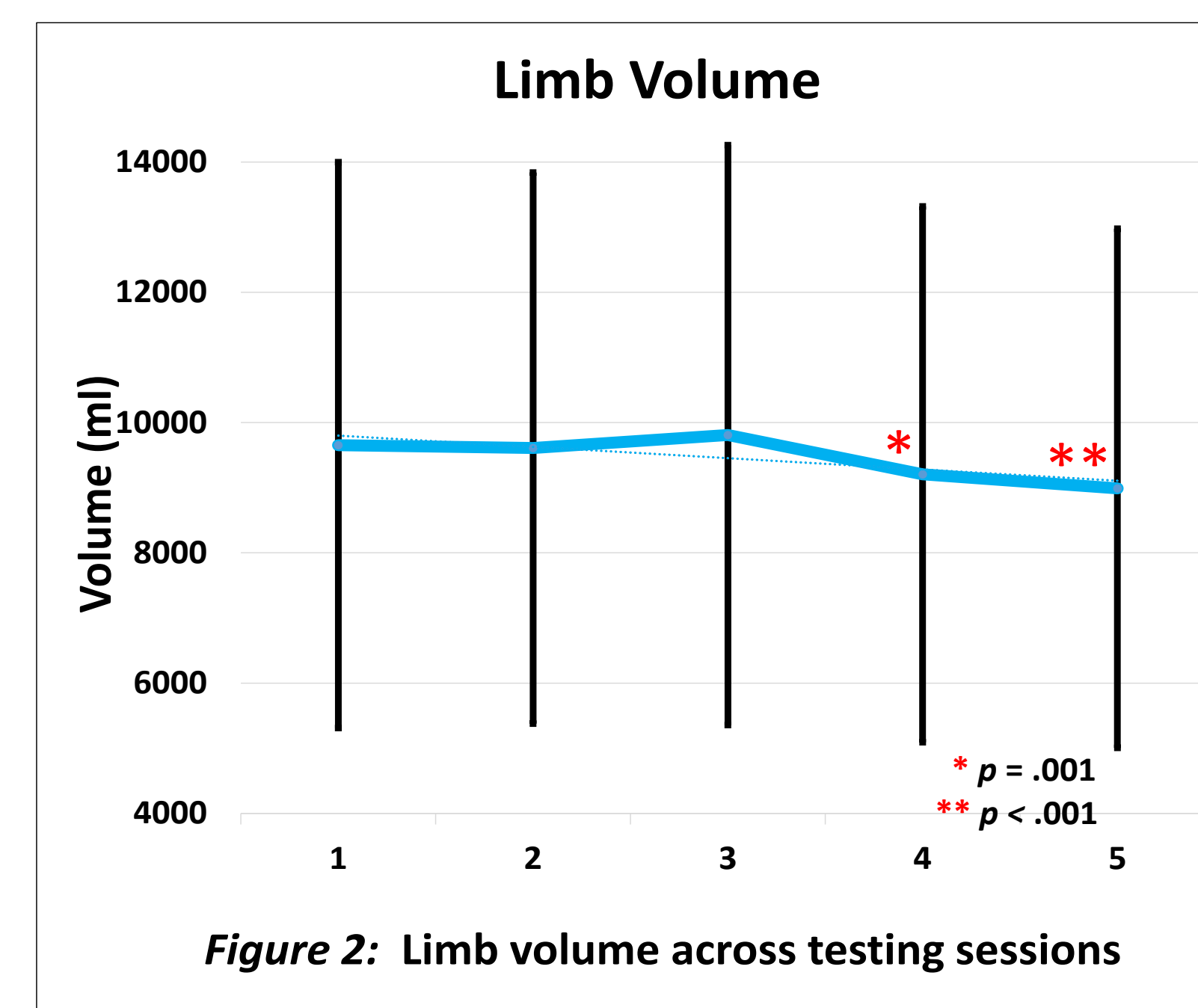
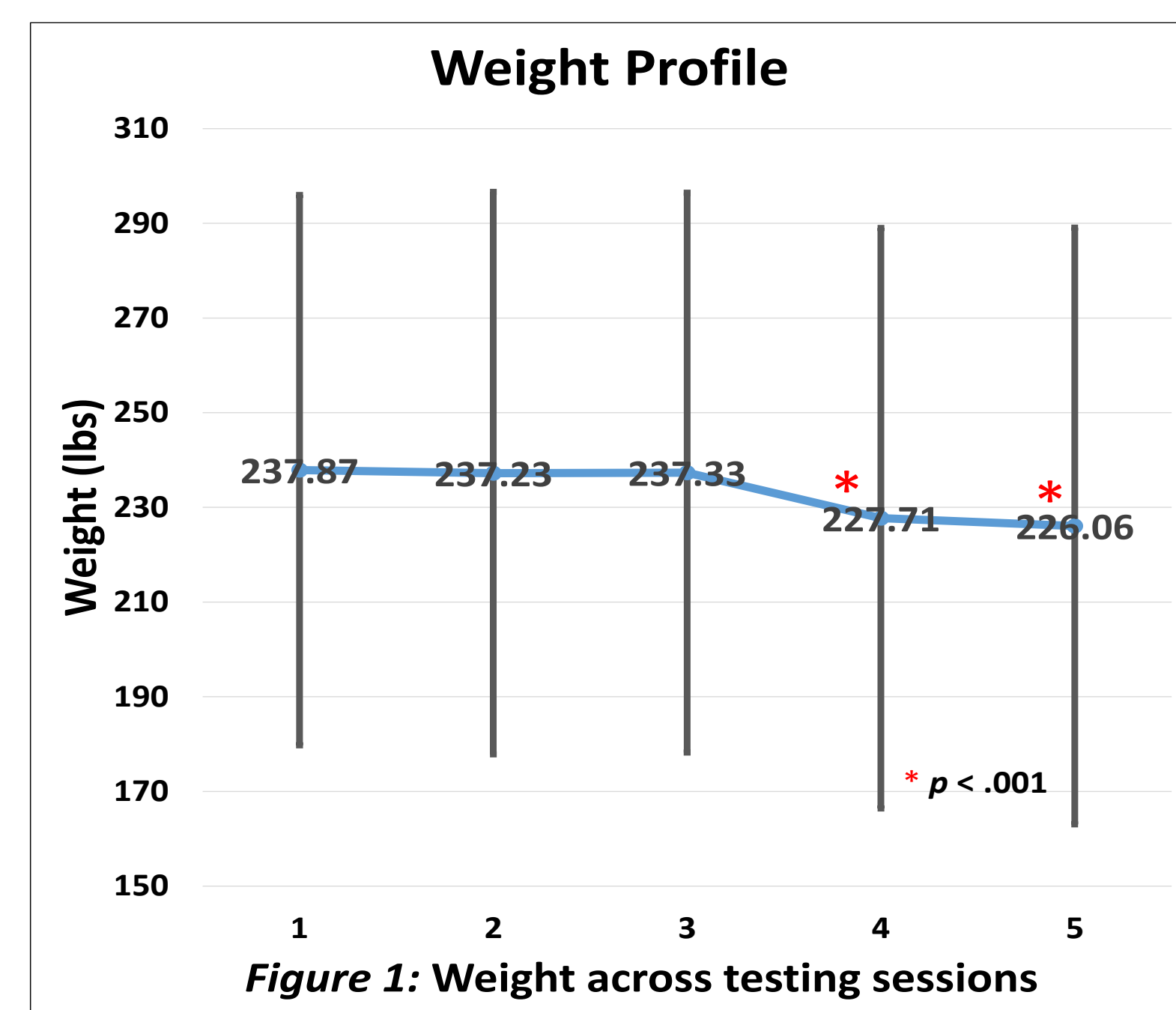
### INTERVENTION

- Twelve 1.5 hour group sessions** in lifestyle modification, based on the Lifestyle Redesign® model, and led by an occupational therapist. Mean group attendance was 8.2 sessions ( $SD = 2.2$ ).
- Six 0.5 hour individual sessions** were also offered for developing personal priorities, individual goal-setting, and problem-solving. Mean individual session attendance was 3.8 visits ( $SD = 1.14$ ).

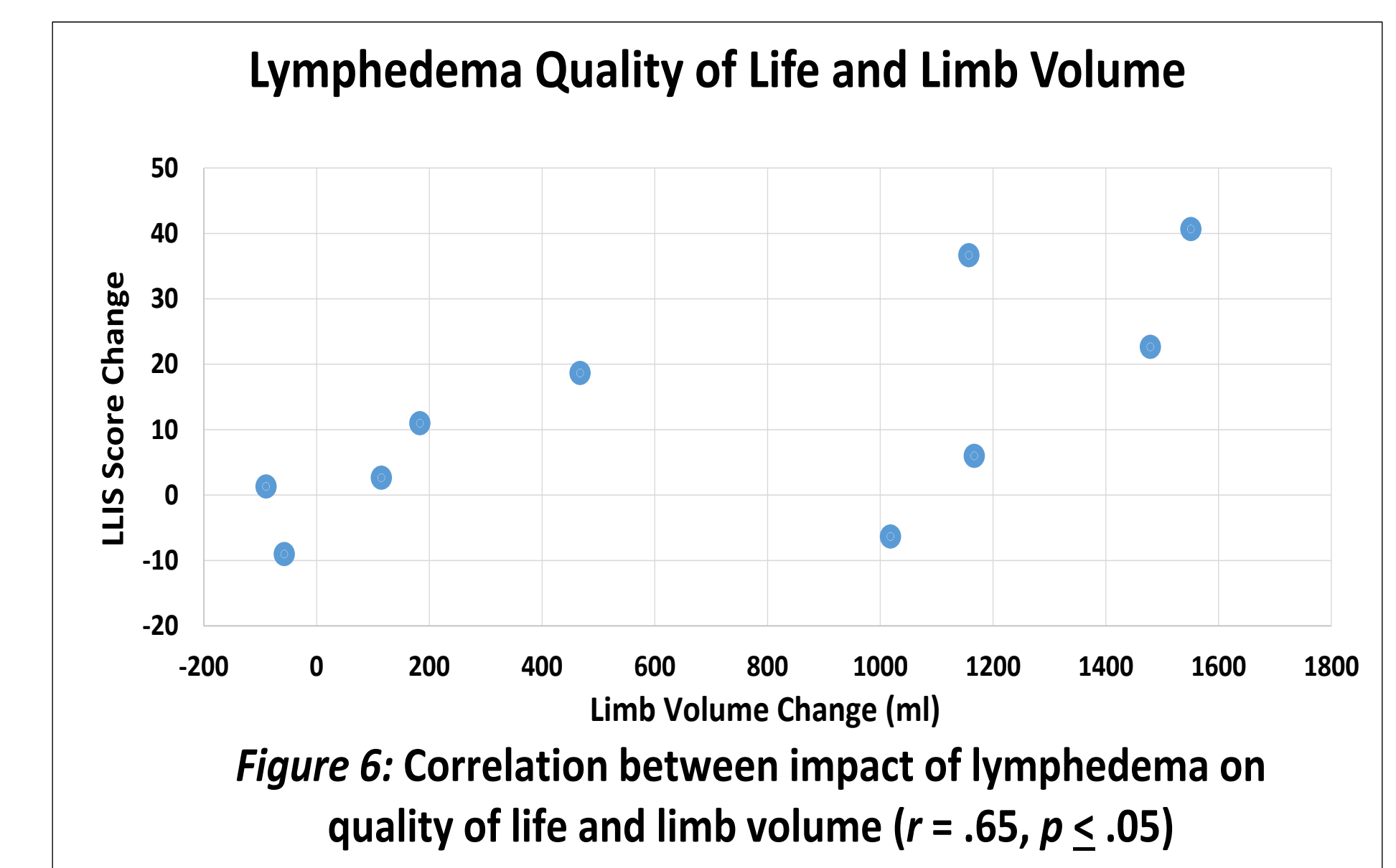
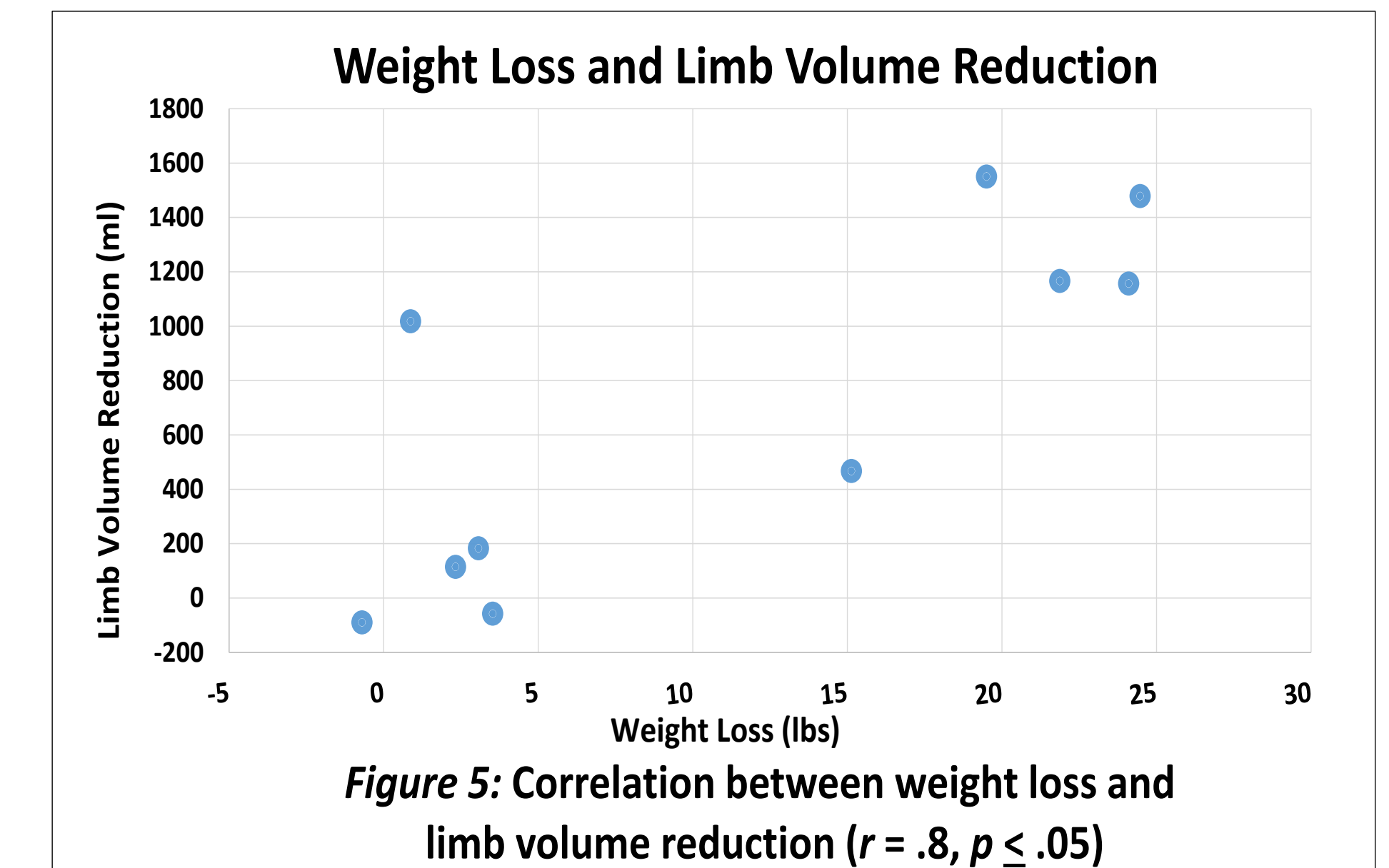
#### Session Topic

- Session 1: Introduction to Lifestyle Change
- Session 2: Eating for Health & Weight Loss – Ketogenic Diet
- Session 3: Eating Routines
- Session 4: Prevention/Management of Chronic Medical Conditions, plus Guest Lecture (Thyroid & Weight Management)
- Session 5: Barriers to Change & Coping Strategies
- Session 6: Eating Out & Social Eating
- Session 7: Field Trip – Meet at Restaurant (TBA)
- Session 8: Physical Activity & Exercise
- Session 9: Stress Management, plus Guest Lecture (Meditation)
- Session 10: The Importance of Sleep
- Session 11: Life Balance & Time Management
- Session 12: Wrap-up & Review: Planning for Sustained Change

### RESULTS



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No relationship was found between the number of groups attended nor individual sessions attended and a change in any of the outcome measures.

### DISCUSSION

- The lifestyle modification program used in this study was feasible, resulting in a high retention rate and good program attendance.
- The program resulted in weight and limb volume reduction and reduced lymphedema-related life impact for participants. The results offer preliminary evidence that this intervention may be a viable adjunct to improved clinical outcomes for lymphedema treatment.
- Further research using a controlled design is needed to confirm efficacy, and to ascertain which elements of the program are key for facilitating positive results and whether the positive results obtained from this study are sustained in the long term.

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