



Baylor University

ROBBINS COLLEGE OF HEALTH AND HUMAN SCIENCES  
Occupational Therapy

# Diving Deep: Exploring the Impact of Community Aquatic Exercise on Health, Well-being, and Participation for Women with Lipedema

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## Lipedema: Challenges & Opportunities

### Key Features<sup>1</sup>:

- A chronic, incurable disorder of subcutaneous fat tissue.
- Primarily affects women, linked to hormonal changes.
- Characterized by painful, symmetrical fat deposits on the hips, thighs, legs, & arms, disproportionate to trunk.
- Unlike typical obesity, lipedema fat:
  - Is highly sensitive to touch.
  - Prone to bruising.
  - Resistant to diet & exercise.
- Progressive condition impacts:
  - Physical well-being.
  - Psychological health.
  - Social participation.

### Challenges:

- <300 studies support lipedema knowledge, many outdated.
- Over 1/2 of the studies were published in the last four years, reflecting a growing research interest<sup>1</sup>.
- Underpowered studies & poor reproducibility.
- Inconsistent diagnostic & treatment standards<sup>2</sup>.
- Treatment guidelines are often borrowed from other chronic conditions, causing mismanagement & confusion<sup>3</sup>.

### Research Gap:

- Chasm between current research & consensus guidelines.
- Aquatic exercise shows potential as a supplemental approach to traditional exercise<sup>4</sup>.
- Highlights the critical need for condition specific, evidence-based interventions individualized to this population.

### Frame of Reference:

- Canadian Model of Occupational Performance & Engagement.

## Purpose: Bridging the Research Gap

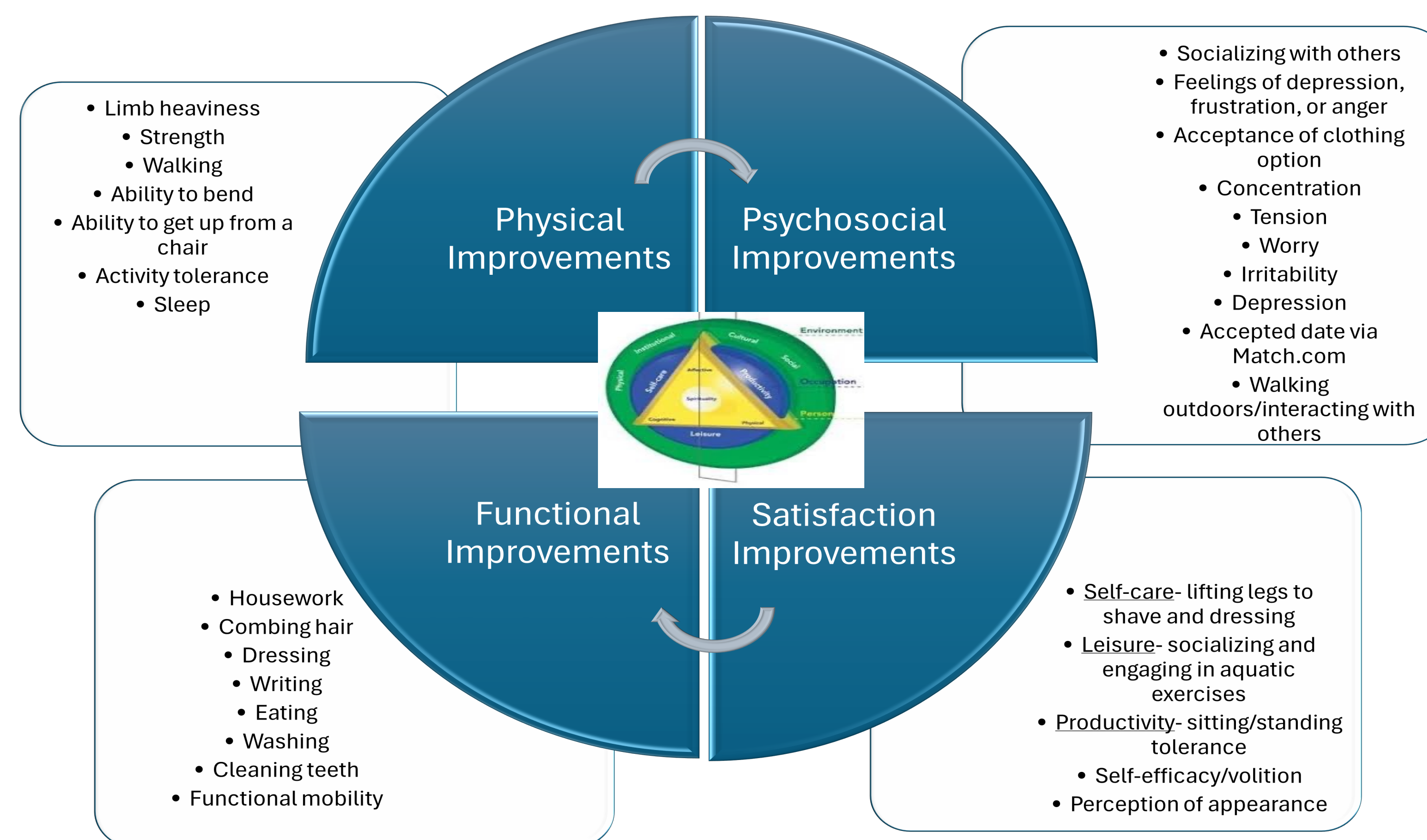
The purpose of this project was to explore the perspectives of women with lipedema and examine the benefits of aquatic exercise in enhancing *health, well-being, and participation in occupational performance* precursory for program development.

## Method: Overview

- **Setting:** Newtown Community Center in Newtown, CT.
- **Participant:** One woman with lipedema, age 50
- **Instruments Used:** Pre/post interview, Lymphedema Life Impact Scale (LLIS), Lymphedema Quality of Life (LYMQOL) Leg/Arm, & Canadian Occupational Performance Measure (COPM).
- **Procedure:** Designed & performed 1:1 aquatic exercise program twice weekly, for 40 minutes for 4 weeks.
- **Data Analysis:** Thematic analyses of qualitative data & quantitative analyses of the outcome measures.

## Results

Figure A: The Benefits of Aquatic Exercise



CMOP-E Model from: Brown, C. (2019). Ecological models in occupational therapy. In B.A. Boyd-Schell & Gillen, G. (Eds.), Willard & Spackman's occupational therapy (pp. 622-632). Wolters Kluwer.

Chart A: Lymphedema Life Impact Scale (LLIS)

Represented are problems associated with Lipedema

Concerns Scale: 0= Normal to 4= Extreme

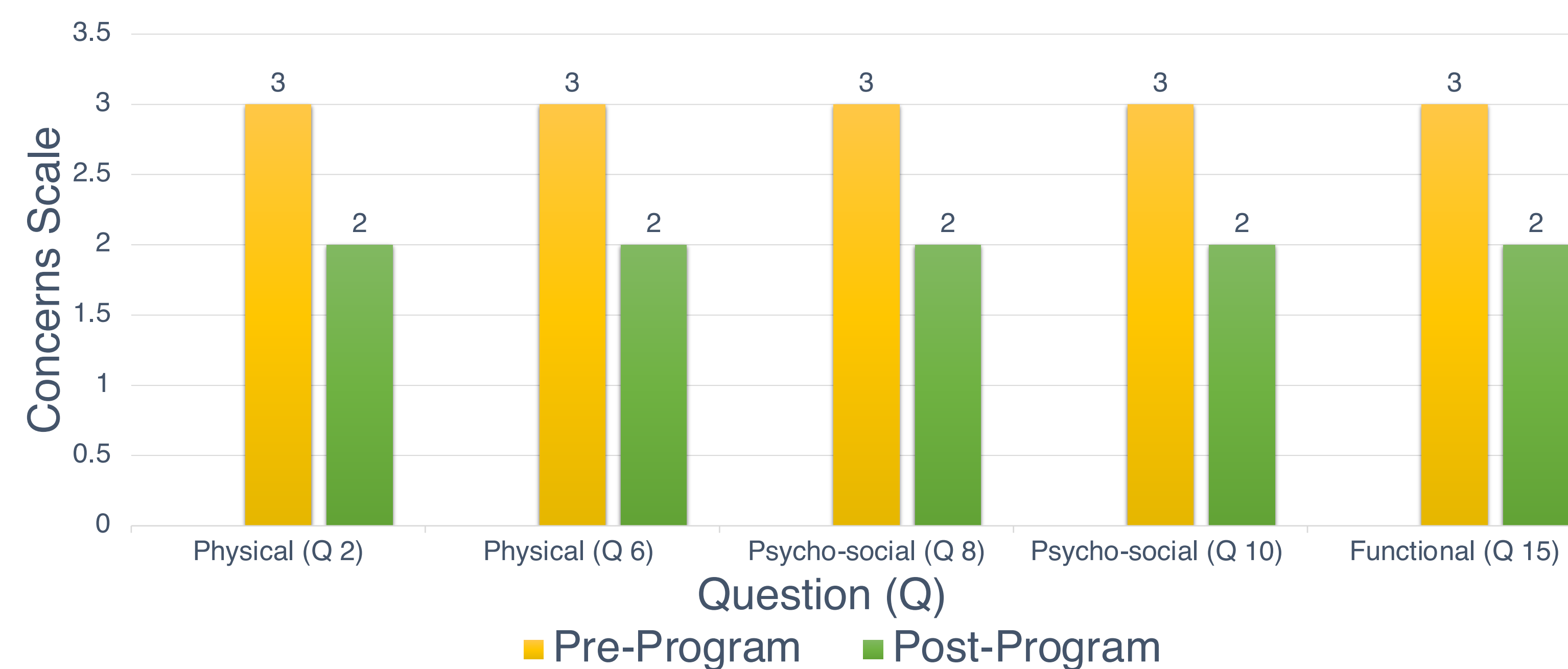


Table A: Outcome Measures

Metric	Initial Value	Final Value	Improvement	Percentage Change
LYMQOL - Leg	3.09	2.63	0.46	11.50%
LYMQOL- Arm	3.33	2.71	0.62	15%
LLIS	60	51	9	9%
COPM- Performance	5.2	4	1.2	12%
COPM- Satisfaction	5.2	3	2.2	22%

Photo 1: Aquatic Exercise Program  
Excerpt for Arms & Legs



## Conclusions

### Interest & Adherence:

- Aquatic exercise as a supplement to traditional exercise may enhance long-term participation.

### Recognized benefits:

- Improvements in physical, psychosocial, & functional.
- Positive impact on self-esteem, occupational performance, & quality of life as benefits seen in other chronic conditions.

### Understanding Aquatic Principles:

- Increased insight of aquatic principles & implications for management.

### Body Image Awareness:

- Greater understanding of perceived attitudes toward body appearance.

### Individualized Programming:

- Importance of personalized exercise programs to meet unique needs of women with lipedema.

### Bridging the Gap:

- Offers a foundation for further research on aquatic exercise benefits for lipedema management & support for program development.

## Implications for Occupational Therapy

### Holistic Approach to Health & Wellness:

- Considers physical, emotional, social, & environmental factors impacting participation.
- Creates programs to meet individual needs, goals, & abilities.
- Incorporates options into a broader therapeutic plan.
- Adapts strategies to address meaningful & purposeful activity

### Evidence-Informed & Advocacy Focus:

- Builds on existing research while exploring less-studied interventions.
- Addresses social, health, & occupational injustices.
- Raises awareness within communities and professional networks.

### Sustaining Participation & Outcomes:

- Supports routines & habits to maintain engagement.
- Promotes health & wellness with occupational therapy focus.

### Limitations:

- Complex implementation & resource constraints.
- Knowledge of OT role in managing lipedema.
- Lipedema specific standardized outcome measures & program guidelines do not exist.

## References

- <sup>1</sup>Eakin, G. S., & Peterson, S. (2023). Lipedema: A current understanding of its pathology and natural history. *Lipedema Foundation*. <https://lipedema.org>
- <sup>2</sup>Ernst, A. M., Bauer, H., Bauer, H. C., Steiner, M., Malfertheiner, A., & Lipp, A. T. (2022). Lipedema research- Quo vadis? *Journal of Personalized Medicine*, 13(1), 98. <https://doi.org/10.3390/jpm13010098>
- <sup>3</sup>Buso, G., Depalron, M., Tomson, D., Raffoul, W., Vettor, R., & Mazzolai, L. (2019). Lipedema: A call to action! *Obesity*, 27(10), 1567–1576. <https://doi.org/10.1002/oby.22597>
- <sup>4</sup>Maccarone, M. C., Venturini, E., & Masiero, S. (2023). Exploring the potential role of health resort medicine in the management of breast cancer-related lymphedema: A viable alternative for innovative rehabilitation opportunities? *International Journal of Biometeorology*, 67, 1505–1507.