

# Clinical Highlights

## Flexitouch® Advanced Pneumatic Compression Device Improves Clinical Outcomes and Reduces Healthcare Costs in Lymphedema Patients

Original Article: The Cutaneous, Net Clinical, and Health Economic Benefits of Advanced Pneumatic Compression Devices in Patients with Lymphedema  
Journal: *Journal of American Medical Association – Dermatology*  
Publication Date: October 2015  
Authors: Pinar Karaca-Mandic, PhD<sup>1</sup>; Alan T. Hirsch, MD<sup>2</sup>; Stanley G. Rockson, MD<sup>3</sup>; Sheila H. Ridner, PhD, RN<sup>4</sup>

### OBJECTIVE

The objective of this study was to examine the impact of the Flexitouch advanced pneumatic compression device (APCD) on 12 month clinical outcomes and healthcare costs in a privately insured population of lymphedema patients.

### METHODS

Investigators conducted a retrospective analysis of a de-identified health claims database of 34 million people to identify patients meeting the following criteria:

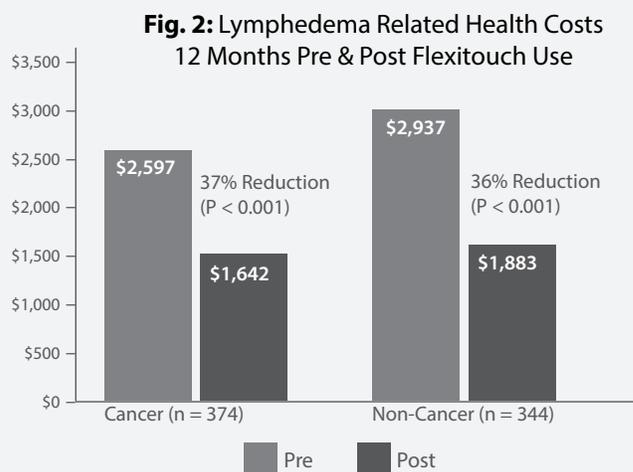
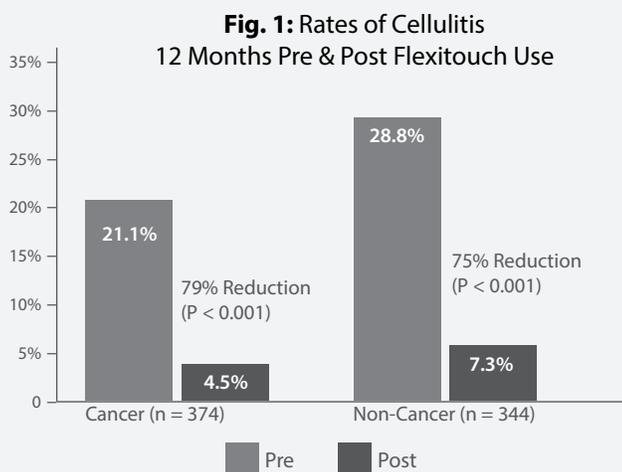
- Diagnosis of lymphedema
- Prescribed and received a Flexitouch System for home use
- Continuous insurance coverage 12 months prior to and 12 months following the receipt of the Flexitouch System
- 718 patients met these criteria. The study included 374 patients with cancer-related lymphedema and 344 with non-cancer-related lymphedema.
- Clinical outcomes and healthcare costs were analyzed for the 12 months prior to receipt of the Flexitouch APCD compared to outcomes and costs in the 12 months post receipt of the APCD.

### RESULTS

In the 12 months following the receipt of the Flexitouch APCD:

- Cancer-related lymphedema patients demonstrated a:
  - 79% decline in the rate of cellulitis (Fig. 1)
  - 29% reduction in the rate of out-patient hospital visits (Fig. 3)
  - 30% reduction in rate of physical therapy
  - 37% reduction in lymphedema-related costs\* (Fig. 2)
- Non-cancer related lymphedema patients demonstrated a:
  - 75% decline in the rate of cellulitis (Fig. 1)
  - 40% reduction in the rate of out-patient hospital visits (Fig. 3)
  - 34% reduction in rate of physical therapy visits
  - 36% reduction in lymphedema-related costs\* (Fig. 2)

\*Excludes APCD costs

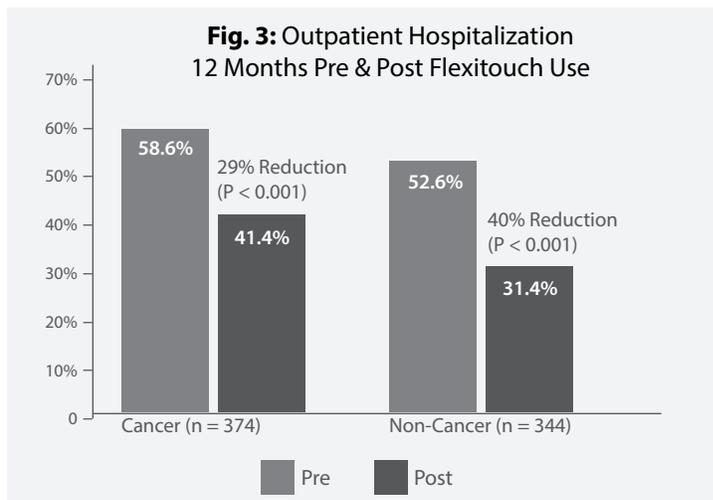


## DISCUSSION

- Flexitouch use significantly reduces the incidence of cellulitis in lymphedema patients
  - Cellulitis is a potentially serious infection of the dermis and soft tissue which may require hospitalization
  - Cellulitis is a common co-morbidity of lymphedema; the incidence was reported in 21-29% of patients in this study prior to Flexitouch therapy
  - Acute cellulitis results in setbacks and postponement of lymphedema treatment
  - Lymphedema is a strong predictor of cellulitis, increasing risk 9-fold<sup>5</sup>
- Flexitouch use helped to reduce outpatient hospital & physical therapy visits in lymphedema patients
- The economic benefits associated with the Flexitouch System are substantial and may go beyond what was measured in the study
  - Patients in the study recognized significant reductions in lymphedema related health costs in the 12-month period following receipt of the Flexitouch System
  - The study did not account for additional monetary and non-monetary benefits from improved physical function, productivity, quality of life, and lower caretaker costs

## KEY POINTS

- This is the largest clinical study ever to measure health outcomes and economic benefits of a specific therapy (the Flexitouch System) used for the treatment of lymphedema
- This landmark study demonstrates that the Flexitouch System improves patient health & reduces lymphedema treatment costs
  - Rates of cellulitis, outpatient visits & physical therapy reduced significantly with the use of the Flexitouch System
  - Lymphedema-related treatment costs decreased significantly with use of the Flexitouch System
    - 37% reduction in costs for cancer-related lymphedema patients
    - 36% reduction in costs for non-cancer-related lymphedema patients
- Avoiding a single episode of cellulitis could save patients more than 4 days of hospitalization<sup>6</sup> and costs in excess of \$16,000<sup>7</sup>
  - The Flexitouch System demonstrated a 79% reduction in the rate of cellulitis in cancer-related lymphedema patients, and a 75% reduction in the rate of cellulitis in non-cancer-related lymphedema patients
- Clinical and economic benefits of therapy with the Flexitouch System will likely extend beyond 1 year
  - Lymphedema is a chronic, life-long condition without a cure



- This study examined patient health and cost outcomes for 1 year following the receipt of the Flexitouch System
- It is reasonable to assume that patients would receive ongoing positive health benefits with continued use of this beneficial at-home therapy

## CONCLUSION

Lymphedema is a chronic disease associated with increased rates of cellulitis and adverse clinical events. The Flexitouch System is the only pneumatic compression device clinically proven to reduce the incidence of cellulitis, stimulate the lymphatic system<sup>8</sup>, and help to reduce healthcare costs in lymphedema patients.

## ABOUT THE AUTHORS

1. Division of Health policy and Management, School of Public Health, University of Minnesota, Minneapolis, MN, United States of America,
2. Cardiovascular Division, University of Minnesota Medical School, Minneapolis, MN, United States of America
3. Stanford Center for Lymphatic and Venous Disorders, Division of Cardiovascular Medicine, Stanford University School of Medicine, Stanford, California, United States of America,
4. Vanderbilt University School of Nursing, Vanderbilt University, Nashville, TN, United States of America

## REFERENCES

5. Tay, E.Y., et al., Cellulitis Recurrence Score: A tool for predicting recurrence of lower limb cellulitis. *Journal of the American Academy of Dermatology*. 72(1): p.140-145.
6. Centers for Disease Control and Prevention. Available at: [http://www.cdc.gov/nchs/data/nhds/2average/2010ave2\\_firstlist.pdf](http://www.cdc.gov/nchs/data/nhds/2average/2010ave2_firstlist.pdf). Accessed May, 2015.
7. The Official Website of New York State. Available at: <https://health.data.ny.gov/Health/Cellulitis-Other-Bacterial-Skin-Infections-Hospita/3med-x5jj>. Accessed May, 2015.
8. Adams KE, Rasmussen JC, Darne C, Tan I, Aldrich MB, Marshall MV, Fife CE, Maus EA, Smith LA, Guilloid R, Hoy S, Sevick-Muraca EM. Direct evidence of lymphatic function improvement after advanced pneumatic compression device treatment of lymphedema. *Biomedical Optics Express*. August 2010 (Vol 1/No 1).



### Tactile Medical

1331 Tyler Street NE, Suite 200  
Minneapolis, MN 55413 USA  
T: 612.355.5100  
F: 612.355.5101

### Customer Service

Toll-Free Tel: 866.435.3948  
Toll-Free Fax: 866.435.3949  
Hours: Monday through Friday, 7 a.m. – 7 p.m. CT  
[www.tactilemedical.com](http://www.tactilemedical.com)