

# Flexitouch® Advanced Pneumatic Compression Device Reduces Phlebolymphe­dema Healthcare Costs Compared to Other Treatment Modalities

Original Article: Health and Economic Benefits of Advanced Pneumatic Compression Devices in Patients with Phlebolymphe­dema  
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**OBJECTIVE**

To evaluate the impact of the Flexitouch (FLX) advanced pneumatic compression device (APCD) on phlebolymphe­dema-related medical resource utilization (MRU) and cost compared to other pneumatic compression modalities and to conservative therapy (CONS) in a representative U.S. phlebolymphe­dema patient population.

**METHODS**

- Investigators conducted a longitudinal matched case-control analysis of de-identified private insurance claims in a dataset of 165 million people to identify patients meeting the following criteria:
  - Diagnosis of lymphedema (primary or secondary)
  - Primary or secondary diagnosis for chronic venous insufficiency (CVI)
  - Continuous health plan enrollment for at least 18 months, with mean follow up by group varying from 1.62 years to 1.9 years
  - At least one claim for (CONS)
- Prior to case matching 1,065 patients met these criteria. 860 (80.8%) received CONS alone. All other groups

received CONS in addition to the PCD treatment modality.

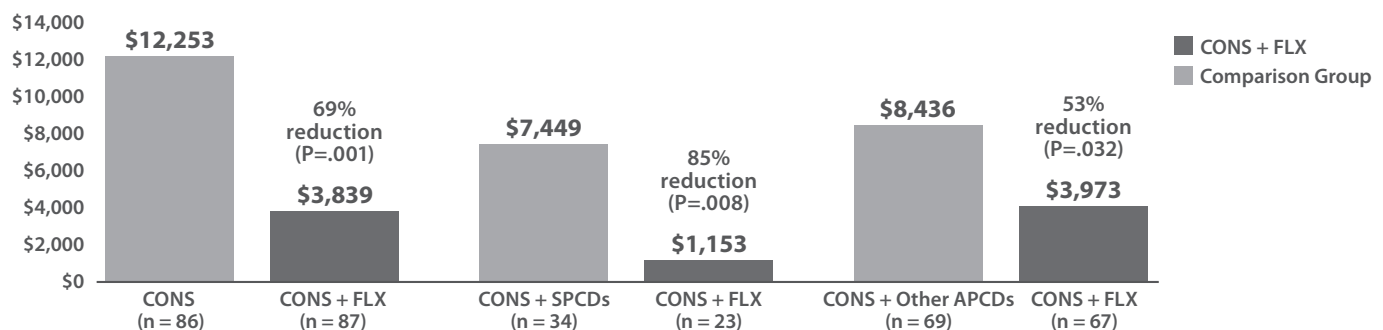
- After case-matching, the study compared these groups: 86 patients CONS (87 on FLX), 34 on Simple Pneumatic Compression Devices (SPCDs) (23 on FLX), and 69 on other APCDs (67 on FLX).
- Direct phlebolymphe­dema- and sequelae-related MRU and healthcare costs were analyzed.

**RESULTS**

Flexitouch use was associated with statistically significant reductions in phlebolymphe­dema- and sequelae-related medical resource utilization (MRU) and costs compared to CONS, SPCDs, and other APCDs.

- FLX demonstrated a 69% reduction vs. CONS alone in per patient per year (PPPY) total costs, driven by 82% reduction in inpatient hospital costs and 55% reduction in outpatient hospital costs.
- FLX demonstrated a 85% reduction vs. SPCDs in PPPY total costs, driven by 93% reduction in inpatient hospital costs and 84% reduction in outpatient hospital costs.

Figure.1: Total Phlebolymphe­dema- and Sequelae-Related Costs (PPPY)



## RESULTS *continued*

- FLX demonstrated a 53% reduction vs. other APCDs in PPPY total costs, driven by 57% reduction in outpatient hospital costs and 58% reduction in other outpatient-related costs.
- Notably, FLX demonstrated a 50% lower rate of cellulitis vs. other APCDs (22.4% vs 44.9%,  $p=.02$ ).

## DISCUSSION

Though the direct costs of phlebolymphe­dema are not well documented<sup>7,8,9</sup> the disease is understood to be common and expensive. This study demonstrates that FLX use reduced PPPY costs by 69% versus CONS alone, 85% versus SPCDs and 53% versus other APCDs.

Earlier diagnosis and more effective phlebolymphe­dema treatment is urgently needed to improve patient quality of life and reduce healthcare costs.

## KEY POINTS

- Venous hypertension and subsequent lymphatic overload are the causes of phlebolymphe­dema.
- Early and effective treatment of phlebolymphe­dema is necessary to prevent complications and reduce overall cost of care.

- Conservative therapy plus Flexitouch use was associated with major, statically significant reductions in per-patient per-year costs compared to use of conservative therapy alone (69%), conservative therapy plus simple pneumatic compression devices (85%) and conservative therapy plus other advanced pneumatic compression devices (53%).
- Flexitouch-related cost reductions were driven by reductions in outpatient and inpatient hospital costs, and other outpatient related costs.
- The data strongly support Flexitouch use with conservative treatment in patients with phlebolymphe­dema compared with conservative therapy alone or simple or other advanced pneumatic compression devices.

## CONCLUSION

Phlebolymphe­dema is a widespread, chronic and underdiagnosed disease associated with high MRU and cost. Flexitouch system use significantly reduces phlebolymphe­dema- and sequelae-related costs in comparison to CONS, SPCDs, and other APCDs.

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**Table 1: Differences in Phlebolymphe­dema- and Sequelae-related MRU and Costs**

	Comparison Group #1 CONS + FLX vs. CONS			Comparison Group #2 CONS + FLX vs. CONS + SPCDS			Comparison Group #3 CONS + FLX vs. CONS + Other APCDS		
	CONS + FLX (n = 87)	CONS (n = 86)	P-value	CONS + FLX (n = 23)	CONS + SPCDS (n = 34)	P-value	CONS + FLX (n = 67)	CONS + Other APCDs (n = 69)	P-value
<b>Total Costs (PPPY)</b>	<b>\$3,839</b>	<b>\$12,253</b>	<b>0.001</b>	<b>\$1,153</b>	<b>\$7,449</b>	<b>0.008</b>	<b>\$3,973</b>	<b>\$8,436</b>	<b>0.032</b>
<b>Inpatient Hospital Costs</b>	\$1,560	\$8,715	0.003	\$297	\$4,215	0.002	\$1,468	\$4,186	0.287
<b>Outpatient Hospital Costs</b>	\$1,129	\$2,534	0.027	\$368	\$2,347	0.02	\$1,320	\$3,062	0.041
<b>Other Outpatient Related Costs</b>	\$1,090	\$2,453	0.029	\$353	\$2,313	0.023	\$1,283	\$3,026	0.038

Costs reported as per patient per year phlebolymphe­dema- and sequelae related costs, excluding all PCD device and accessory costs.

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