

# Lymphedema home treatment improves outcomes, reduces costs, researchers find

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Stanley Rockson found that home therapy could help reduce the severity of lymphedema, a common side effect of cancer treatment. Credit: Norbert von der Groeben

Home therapy helps control symptoms and save on the costs of treating lymphedema, a painful, often debilitating side effect of life-saving cancer treatments, a new study has found.

Patients with swelling caused by cancer-associated lymphedema can both reduce the severity of the disease and the overall cost of [medical care](#) by taking therapeutic steps at home, according to a study by researchers at the Stanford University School of Medicine.

The study looked at the prevalence of lymphedema, a common side effect of cancer treatments, and found that the average annual cost of care for a patient with the condition decreased from \$62,190 to \$50,000 a year when the patient used pneumatic compression devices to treat the swelling.

"Total [health-care](#) costs for these patients are very high, but can be profoundly reduced with treatment intervention, in this case a compression device," said Stanley Rockson, MD, professor of cardiovascular medicine at Stanford and senior author of the study, published online Dec. 3 in *PLOS ONE*. "This is clearly a compelling argument for increased coverage of similar home-care devices to reduce costs."

The first author of the study is Kimberly Brayton, MD, JD, a former cardiovascular fellow at Stanford.

## **Painful, debilitating fluid buildup**

Lymphedema is most commonly caused by the removal of or damage to lymph nodes as a part of [cancer treatment](#). It results from a blockage in the lymphatic system, which is part of the immune system. The blockage prevents lymph fluid from draining well, and the fluid buildup leads to swelling, which can be painful and debilitating. These symptoms can be controlled with various treatments, including treatments done at home and outpatient physical therapy. Home treatments for lymphedema include manual lymphatic massage, multilayer bandaging techniques and application of various compressive garments to reduce tissue fluid.

Researchers chose to examine the use of pneumatic compression devices as an example, primarily because it was an easy therapy method to track through health-insurance coding. "We chose one specific intervention, not because it should supersede the others, but just as a representative,

readily identified treatment intervention," Rockson said.

Pneumatic compression devices are inflatable garments that, when applied to the swollen area, inflate and deflate in cycles to help drain lymph-fluid buildup.

Lymphedema, which is incurable, is common among cancer survivors, although it's unclear exactly how many people suffer from it. The disorder is often ignored and undertreated, said Rockson, who holds the Allan and Tina Neill Professorship in Lymphatic Research and Medicine.

For the study, researchers set out to determine both the prevalence of the disorder and the possible benefits of these home treatments by examining information collected from the health claims database of United Health Care Group/Optum, a private health insurer that operates in 24 states. Those figures were then used to extrapolate nationwide statistics. (The insurance company stripped patients' personal information from the data used by the researchers.)

The researchers evaluated health care claims and other data collected by the insurer from 2007 to 2013. Results showed that in 2007, 9,025 of the 950,333 [cancer patients](#) in the insurance database were diagnosed with lymphedema—a prevalence of 0.95 percent. By 2013, 14,775 of the 1.19 million cancer patients were diagnosed with lymphedema—a prevalence of 1.2 percent.

## **Increasing rates of lymphedema**

Researchers estimated the current number of cancer patients nationwide at 10 million. At a prevalence of 1.2 percent, that would mean about 121,000 lymphedema diagnoses nationwide.

"Cancer rates are expected to continue increasing at significant rates for the next 20 years," Rockson said. "We can expect to see corresponding increasing rates of lymphedema."

Researchers also examined health claims in the year prior to and the year following the initiation of pneumatic compression therapy for lymphedema patients in the insurance company's database. Results showed that annual costs of medical care decreased from \$62,190 in the year prior to the use of the device to \$50,000 in the year after they started using the device. During the year following the use of the devices, there was a reduction in the extent to which the patients used all categories of health care, including the frequency of treatment of soft tissue infection, the study said.

"The potential public health implications of these findings are substantial," Rockson said. "As the American population ages and [lymphedema](#) rates increase, effective home therapies are likely to become increasingly important."

Provided by Stanford University Medical Center

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