

Inadequate peripheral lymphedema screening is a persistent gap in the provision of quality survivorship care at many breast cancer centers. Lymphedema should be identified and treated during the subclinical stage, when it is more likely reversible. The purpose of this project was to integrate a screening process for patients with breast cancer at risk for lymphedema, using bioimpedance spectroscopy via the L-Dex®, in a breast cancer center. A protocol was developed that included specific criteria for early patient referral to physical therapy.

#### AT A GLANCE

- For breast cancer survivors, a screening protocol should be established that uses bioimpedance spectroscopy to identify subclinical lymphedema.
- Advanced practice nurses should provide lymphedema education to patients.
- Early identification and referral to physical therapy based on the screening protocol could reduce the incidence of clinical lymphedema and the associated effects.

#### KEYWORDS

lymphedema; breast neoplasms; prevention and control

#### DIGITAL OBJECT IDENTIFIER

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# Lymphedema

## Improving screening and treatment among at-risk breast cancer survivors

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About 246,660 women were estimated to have been diagnosed with breast cancer in 2016. However, improvements in breast cancer screening and treatment have increased survival rates in the United States, resulting in more than 2.8 million breast cancer survivors (American Cancer Society [ACS], 2016). Cancer survivorship is receiving considerable attention. Lymphedema, a common concern for breast cancer survivors, must be addressed during the survivorship phase (ACS, 2014) because of the profound functional, psychosocial, and medical consequences, including functional movement limitations and loss of strength, self-esteem, and body image, leading to anxiety and depression (Soran et al., 2014). About 20% of the women who undergo axillary lymph node dissection and 6% of women who undergo sentinel lymph node biopsy (SLNB) will develop arm lymphedema (ACS, 2014).

### Lymphedema Screening

A process is needed to ensure that patients at risk for upper-extremity lymphadenopathy receive the prescribed treatment and return for follow-up care, including measurements, management, and risk reduction (American College of Surgeons, 2014). The National Lymphedema Network recommended a written protocol in breast cancer treatment centers for arm measurements and a referral process for patients who qualify for a certified lymphedema therapist. Moreover, preoperative and postoperative measurements should be the standard of care throughout sur-

vivorship, and patients with a 10-point increase in L-Dex® U400 scores should be referred to physical therapy (PT) for conditioning and compression sleeve use (National Lymphedema Network Medical Advisory Committee, 2013).

Bioimpedance spectroscopy (BIS) is an effective, evidence-based screening method for subclinical lymphedema (Soran et al., 2014) using the L-Dex. In one study, BIS-based detection and early subclinical lymphedema treatment in at-risk breast cancer survivors reduced clinical lymphedema incidence (36.4% to 4.4%) over five years (Soran et al., 2014). BIS was highly reliable for detecting subclinical lymphedema in another cross-sectional study (Fu et al., 2013). In a multi-institutional study, BIS detected changed L-Dex scores within six months postoperatively, before the onset of lymphedema-related clinical changes (Vicini et al., 2013). The L-Dex generates a measurement using a low frequency electrical signal that is transmitted from the device to the patient via skin surface electrodes; it is noninvasive, and the patient does not experience any sensation during the measurement (Soran et al., 2014).

### Challenging the Standard of Care

At the University of Cincinnati Cancer Institute (UCCI) Breast Cancer Center, the advanced practice nurse (APN) team recognized that patients were referred to PT only after reporting symptoms consistent with clinical lymphedema. No standard screening process existed for detecting subclinical lymphedema or making appropriate referrals for early