

**PRESENCE OF FUNCTIONAL AXILLARY LYMPH NODES AND
LYMPH DRAINAGE WITHIN ARMS IN WOMEN WITH AND WITHOUT
BREAST CANCER-RELATED LYMPHEDEMA**

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ABSTRACT

This pilot study was designed to investigate lymphatic transport in the arms of women after breast cancer treatment without lymphedema and with mild and severe arm lymphedema. Nineteen breast cancer survivors [6 without (Group 1), 6 with mild (Group 2) and 7 with severe (Group 3) lymphedema] were examined. Lymphatic transport in the arm and to axillary lymph nodes were evaluated using quantitative radionuclide lymphoscintigraphy. The radioactivity ratio between the operated and unoperated axillae (axillary ratio), and both lymphatic transport and tracer disappearance rates (TDR) from the injection sites were calculated. We found that axillary ratio and lymphatic transport were significantly higher in Groups 1 and 2 compared to 3 and that TDR was not affected in any Group. Additionally, lymphoscintigraphy revealed presence of functional axillary lymph nodes within the operated axilla in women without or with mild lymphedema, while in women with severe lymphedema, no axillary lymph nodes were visualized. We conclude from our subjects that breast cancer survivors who did not develop or had mild arm lymphedema have functional lymphatic transport and lymph nodes in the axillary area on the operated side. This suggests that efficient collateral circulation and/or peripheral lymphovenous communications has developed in these subjects which may be preventative for the development of severe lymphedema.