

The following position statement has been under development for the last 2 years. The effort was spearheaded by our Section President, Elizabeth Augustine, who was responsible for the editing of the final document. Kudos to her for her superb efforts toward the production of this important document.

Oncology Section of the American Physical Therapy Association Position Statement—Physical Therapy: Management of Lymphedema in Patients with a History of Cancer

It is the position of the Oncology Section of the American Physical Therapy Association (APTA) that within the scope of practice of physical therapy, physical therapists have acquired, through their professional education, the knowledge and skills necessary to examine, evaluate, screen, diagnose, establish a prognosis and plan of care for the patient/client at risk for development of lymphedema and/or with lymphedema.

To enhance quality of care for patients/clients with lymphedema and incorporate new scientific knowledge and treatment techniques into clinical practice, the Oncology Section encourages physical therapists to review the *Guide to Physical Therapist Practice* on impaired anthropometric dimensions secondary to lymphatic system disorders.¹ After reviewing this document (which represents a scope of practice and not a standard of care) physical therapists, who treat patients/clients with lymphedema, may want to obtain additional post entry-level education and training in lymphedema management techniques.²⁴

Rationale: Rationale for this position is provided in the position paper that follows, published by the Oncology Section of the APTA. The intent of this paper is not to be exclusionary or to establish a standard of care. Rather, the intent of this paper is to inform the reader of new treatment techniques for lymphedema management listed in the *Guide to Physical Therapist Practice*.¹ This position statement and position paper that follow were developed through a process of literature review, best evidence synthesis, and expert opinion by members of the Oncology Section of the APTA. The Oncology Section of the American Physical Therapy Association represents an organization of physical therapists, physical therapist assistants, and students who have a special interest and/or experience in clinical assessment and treatment specific to those patients with a diagnosis of cancer. These physical therapists pursue and sponsor advanced training in oncology in order to provide patients with the most innovative and efficacious rehabilitation techniques available. Many of these physical therapists have published articles, chapters, and text books describing the scientific basis and outcome measures related to either their research or clinical experience.⁷⁻¹¹ They represent knowledgeable and skilled clinicians in the field of oncology physical therapy.

BACKGROUND INFORMATION

Lymphedema is a high protein edema that can occur when-

ever the lymphatic system is damaged or blocked.⁴ Lymphedema is divided into 2 broad classifications: primary (idiopathic) and secondary (acquired).

Primary lymphedema, although less common than secondary lymphedema, can be subdivided into 3 types: congenital, praecox, and tarda. Congenital lymphedema accounts for 10% to 25% of all cases of primary lymphedema and is twice as common in females than males.¹² Lymphedema praecox and lymphedema tarda comprise 80% of all idiopathic cases.¹²

It is estimated that approximately 100 million people in developing countries suffer from secondary lymphedema caused by nematodes (ie, *Wuchereria bancrofti* and *Brugia malayi*).¹³ The leading cause of secondary lymphedema in developed nations like the USA usually occurs after surgical and/or radiation intervention for cancer especially if lymphadenectomy has been performed.¹³ The American Cancer Society estimates that 1 in 8 woman will develop breast cancer at some period in their lifetime.¹⁴ Approximately 25% to 33% of these women will develop lymphedema following breast cancer intervention (surgery, radiation).¹⁵ Based on current projections in the USA it is estimated that 3.3 million women will suffer from lymphedema following breast cancer surgery within their lifetime.³ The incidence of secondary lower extremity lymphedema following surgical intervention for cancer varies from 20% to 80%.¹⁶⁻¹⁸

Physical impairments caused by lymphedema can include increased circumferential limb girth, postural changes, pain, neuromuscular deficits, and integumentary complications. These physical impairments from lymphedema can lead to functional limitations and disability. Also associated with lymphedema is the potential for psychosocial morbidity such as social isolation, depression, and even suicidal ideation.¹⁹ Many patients, who have undergone treatment for breast cancer, and who eventually developed lymphedema, indicated that they were not educated adequately about the risk of developing lymphedema or about lymphedema care.¹⁹

Despite the human cost, lymphedema has not been systematically studied for 2 major reasons.²⁰ Lymphedema usually is not associated with cancer recurrence. Rather, it is a quality of life issue and consequently, has not generated comprehensive research in the past.²⁰ Second, there is often a lengthy time interval from medical/surgical intervention to the onset of lymphedema, necessitating prolonged follow-up.²⁰

THE MEDICAL MANAGEMENT OF CANCER, LYMPHEDEMA AND THE ROLE OF THE PHYSICAL THERAPIST

Medical intervention for patients with cancer often includes surgery, chemotherapy, radiation therapy, and immunotherapy. Each of these modalities represent a significant threat of morbidity to patients with cancer. These modalities when used together or in sequence renders the patient at high risk for impairments, functional limitations, and disabilities. Treatment of the resultant sequelae from these combination modalities requires significant knowledge and skills necessary to assess and formulate the most appropriate, safe, and efficacious intervention to promote the patient's return to function. Patients with a history of cancer, who are referred to a physical therapist, will receive a comprehensive examination consisting of various tests and measurements such as range of motion, gait analysis, motor performance, endurance, muscle strength, sensation, pain analog, girth measurements, activities of daily living, cardiopulmonary status, and posture assessment.¹ Using professional judgment the physical therapist will perform an evaluation of the data gathered to identify which impairments are most likely contributing to the patient's functional limitations. A comprehensive plan of care using physical therapy interventions will be established to restore, improve, or maintain the patient's optimal level of function.¹ Focus of the examination and evaluation is on the whole person.

Surgery

Patients undergo surgery to remove the bulk of available tumor. These surgeries are often complex and sometimes require the removal of surrounding muscles and nerves in order to excise the tumor in such a manner that the peripheral margins of the specimen are free of microscopic disease.^{21,22} Procedures such as lumpectomy, axillary dissection, lymph node dissection, and limb salvage or reconstruction techniques are often accomplished by the most skilled surgeons with advanced training in oncology. Physical therapists are familiar with these techniques and possess the necessary assessment and treatment skills required to provide the most appropriate rehabilitative intervention. Lymphadenectomy is the most common surgical procedure defined as the excision of the regional lymph nodes of a particular extremity or body cavity. The removal of these nodes renders the patient at high risk for the onset and progression of lymphedema.²³ Physical therapists are cognizant of these sequelae and upon referral, institute the necessary therapeutic program while the patient is hospitalized or seen as an outpatient thereby inhibiting the sequelae of severe lymphedema.

Radiation Therapy

Radiation therapy, in particular, teletherapy, is well known to cause significant effects on the connective tissue.^{24,25} Subsequently these effects lead to soft tissue fibrosis resulting in decreased range of motion, pain, and in some cases lymphedema. The effect of the radiation on the circulatory and lymphatic system is typically seen in a loss of elasticity and contractility of the irradiated vessels that are required to transport the blood, lymph, and waste products from the area of the body being

exposed. Again, physical therapists are not only familiar with these acute, subacute and chronic changes which can occur over a period of 6 to 18 months, they perform a valuable service in instructing the patient and family in those procedures to prevent or inhibit the production of high protein lymphedema. Such intervention is essential for maintaining the level of function and cosmesis for these patients to return to a healthy and productive lifestyle.

Chemotherapy

Physical therapists are knowledgeable of the variety of chemotherapeutic regimens commonly prescribed in the treatment of patients diagnosed with cancer. They are also acutely aware of the common side effects of these drugs on the immune system and the resultant effects on the musculoskeletal, neuromuscular, metabolic, and hematological systems.²⁶ Some of the most common effects of these drugs involve peripheral neuropathy and cardiac toxicity. In addition, some of these drugs (ie, biological response modifiers) facilitate high levels of fluid retention and metabolic dysfunction. These effects contribute to the formation of edema throughout the body. Great care must be taken in removing the fluid by the use of diuretics and appropriate manual and bandaging techniques so as not to create significant deviation in the patient's electrolyte balance. Awareness of these effects and the development of innovative physical therapy treatment methods are among the clinical skills and judgement required to manage these patients effectively.

THE ROLE OF THE PHYSICAL THERAPIST IN LYMPHEDEMA MANAGEMENT OF PATIENTS WITH A HISTORY OF CANCER

Patients with lymphedema are often referred to physical therapy for case management including examination, evaluation, and treatment. Physical therapists examine, evaluate, screen, diagnose, establish a prognosis and plan of care for patients/clients at high risk for development of lymphedema and/or with lymphedema. Although there is no curative treatment for lymphedema, early diagnosis and proper management including treatment can significantly reduce its negative effects.²⁷ In the USA, physical therapy curriculum includes education in the pathophysiology of lymphedema and management of lymphedema (See below—Current Lymphedema Management in the United States). To apply the most effective therapeutic techniques, it is important for the clinician to have a broad understanding of the lymphatic system and the pathophysiology of lymphedema.^{28,29} A traditional plan of care in the USA includes patient/client education for skin care precautions, treatment by elevation of the extremity, the use of mechanical compression pumps followed by compression bandaging, and/or fitting of customized "pressure gradient" compression garments.²⁵ Additional modes of treatment may vary according to the education the physical therapist has received in his/her academic program and post entry-level training.³ Internationally, European and Australian physical therapists favor a series of innovative techniques often referred to as Complex Physical Therapy (CPT).^{4,5,31,31} Different countries use different acronyms for CPT

but they all have the same components. The American Cancer Society recommends the use of the term DLT (Decongestive Lymphatic Therapy) instead of CPT.³³ The components of DLT include skin care, lymphatic drainage massage, compression bandaging/garments, and exercise.⁴ Lymphatic drainage massage is used to facilitate the opening of collateral lymphatic vessels to increase drainage from obstructed areas into normal lymphotomes.³⁴

Current Lymphedema Management in the United States

Among American health professionals, there is currently a debate as to which therapy, traditional or DLT, provides the best outcome.^{35,36} Studies have shown compression pumps to produce reduction in lymphedema.^{40,41} Other studies have reported DLT techniques to have equally effective results with both short-term and long-term management of lymphedema.³⁴ As a result, many clinics have incorporated both methods into their care plan. The American Physical Therapy Association (APTA) publication "A Normative Model of Physical Therapist Professional Education: Version 97" requires curriculum in oncology and lymphedema management.⁴² The oncology and lymphedema management information is disseminated throughout the document under the appropriate practice expectations sections such as sections 7.0 Patient and Client Management Expectation: Screening, 8.0 Patient and Client Management Expectation: Examination, Section 9.0 Patient and Client Management Expectation: Evaluation, Section 10.0 Patient and Client Management Expectation: Diagnosis, Section 11.0 Patient and Client Management Expectation: Prognosis, Section 12.0 Patient and Client Management Expectation: Plan of Care, and Section 13.0 Patient and Client Management Expectation: Intervention. For example, manual lymphatic drainage is included in Section 13.0 Patient and Client Management Expectation: Intervention under Sample Interventions by System as a manual therapy technique on page 115.⁴³ Compression therapies are included in this same section under mechanical modalities on page 117.⁴³ This document is referenced in the 1997 revision of "Evaluative Criteria for Accreditation of Education Programs for the Preparation of Physical Therapists" published by the Commission on Accreditation of Physical Therapy Education (CAPTE). Physical therapy students must be graduates of a CAPTE accredited program to sit for the licensure examination in the USA.

THE ONCOLOGY SECTION'S POSITION AND RECOMMENDATIONS ON THE ROLE OF THE PHYSICAL THERAPIST IN LYMPHEDEMA MANAGEMENT

The Section's Position on the Role of the Physical Therapist in Lymphedema Management in Patients with a History of Cancer

The Oncology Section of the American Physical Therapy Association, represents an organization of physical therapists, physical therapist assistants, and students who have a special interest and/or experience in clinical assessment and treatment specific to those patients with a diagnosis of cancer. It is the position of the Oncology Section that within the scope of practice of physical therapy, physical therapists have acquired through their

professional education, the knowledge and skills necessary to examine, evaluate, screen, diagnose, establish a prognosis and plan of care for the patient/client at risk for development of lymphedema and/or with lymphedema.

The Oncology Section recommends that to enhance quality of care for patients/clients with lymphedema and to incorporate new scientific knowledge and treatment techniques into clinical practice, physical therapists, who treat patients/clients with lymphedema, may want to obtain additional post entry-level education and training in lymphedema management techniques.³⁴

The Section's Recommendations on the Role of the Physical Therapist in Lymphedema Management

Based on international research utilizing these innovative lymphedema management techniques, many American physical therapists have been motivated to seek continuing educational courses in these techniques from various instructors. The Oncology Section of the APTA acknowledges that educational preparation for physical therapy students includes lymphedema management.^{2,43}

1. The Oncology Section of the APTA encourages entry-level physical therapy programs to enhance their curricula devoted to treatment of all types and grades of lymphedema.
2. The Oncology Section of the APTA encourages physical therapists, who intend to treat patients with lymphedema, to pursue additional education and training.
3. The Oncology Section of the APTA encourages research studies in the USA on lymphedema to include, but not limited to:
 - 1) frequency and severity of lymphedema following medical treatment interventions (especially lymphadenectomy and/or radiation therapy) for persons diagnosed with genitourinary cancers such as prostate, testicular, uterine, ovarian; melanoma, sarcoma, breast cancer, etc.
 - 2) examination of the effects of lymphedema in the above stated patient populations regarding occurrence of signs and symptoms of impairments, functional limitations, and disabilities including quality of life (QOL).
 - 3) prospective, randomized, controlled trials to examine the efficacy of physical therapist management of lymphedema. These research studies should include measures of efficacy of care regarding: impairments; functional limitations; disabilities including QOL; intra-individual factors such as demographic factors of age, socioeconomic status, social supports; and environmental factors such as means of transportation, types of health insurance or lack of coverage, etc.

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