



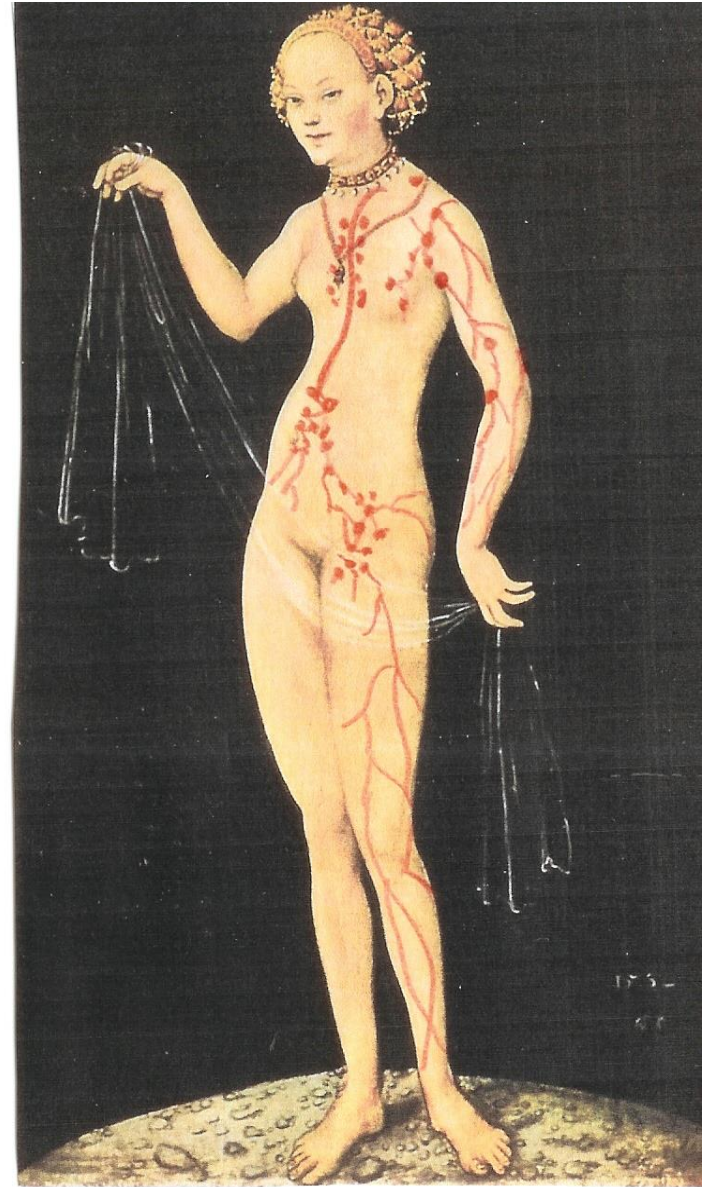
AQUA LYMPHATIC THERAPY

Assoc. Prof. Didem Karadibak, PT, CLT

Dokuz Eylül University, School of Physical Therapy and Rehabilitation

22 March 2013, Izmir

- ▶ Aqua Lymphatic Therapy (ALT) definition
- ▶ Lymphatic mechanism and Lymhedema
- ▶ Complex decongestive physiotherapy
- ▶ Aqua lymphatic Therapy



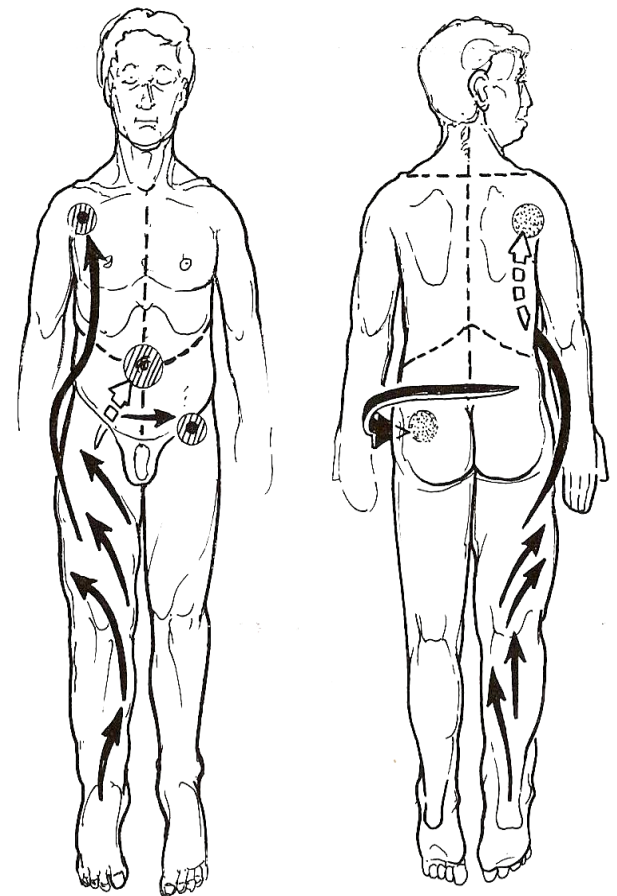
ALT

ALT is based on the principles of the decongestive physiotherapy for lymphedema and is applied in an aquatic environment.



ALT

The method enhances the lymphedema therapy by combining principles of Lymphatic anatomy and physiology with the effect of water immersion



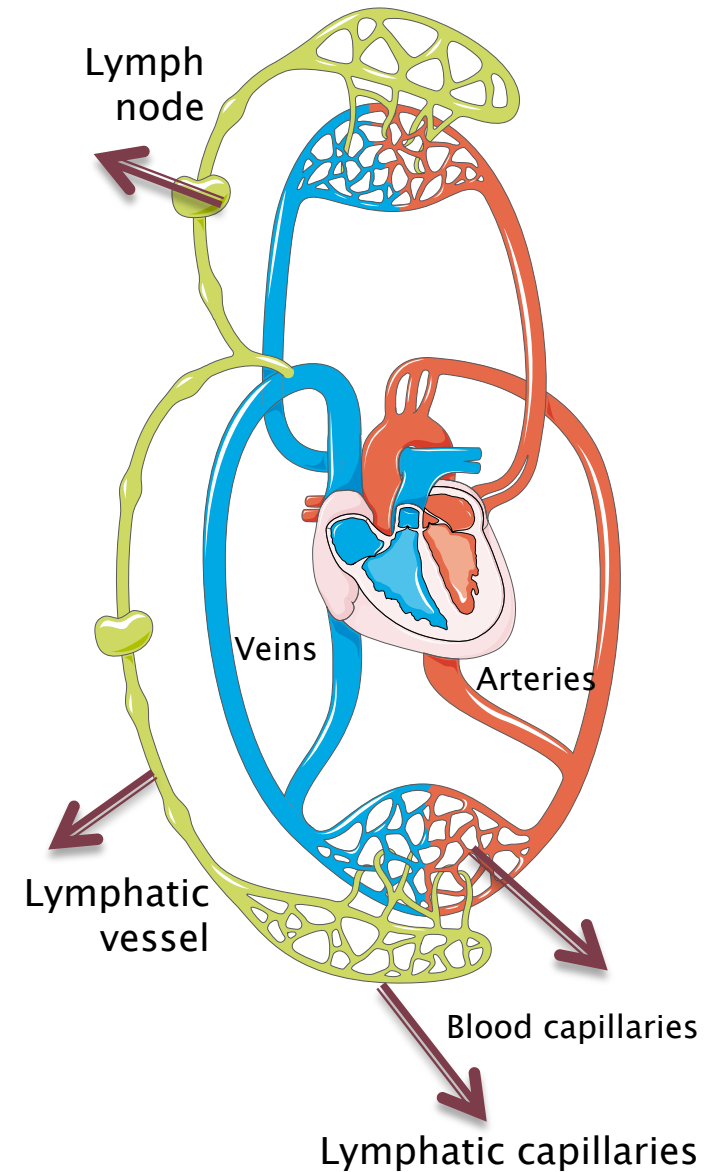
D.Karadibak

LYMPHATIC MECHANISM

The lymphatic system is a transport mechanism for clearing the interstitial spaces of intercellular fluid, protein and blood waste, macromolecules and immunological products

Pulmonary circulation

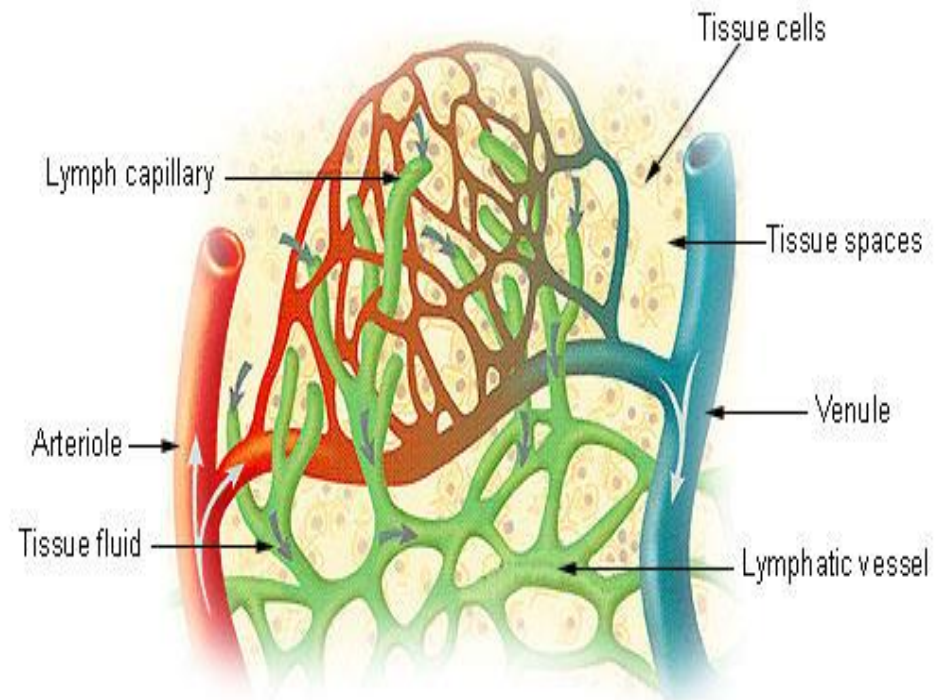
Systemic circulation



LYMPHATIC MECHANISM

Lymph Vessels; absorb and transport lymph Fluid and lymphatic tissues.

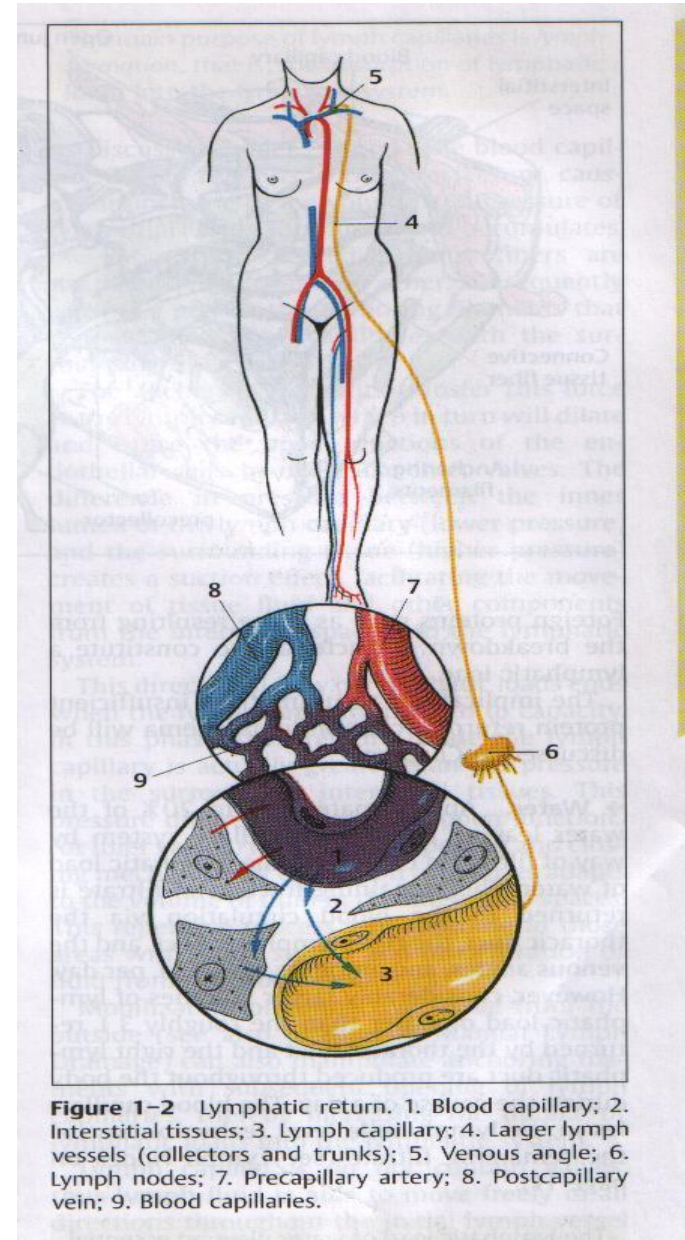
Lymph Capillaries in the Tissue Spaces



D.Karadibak

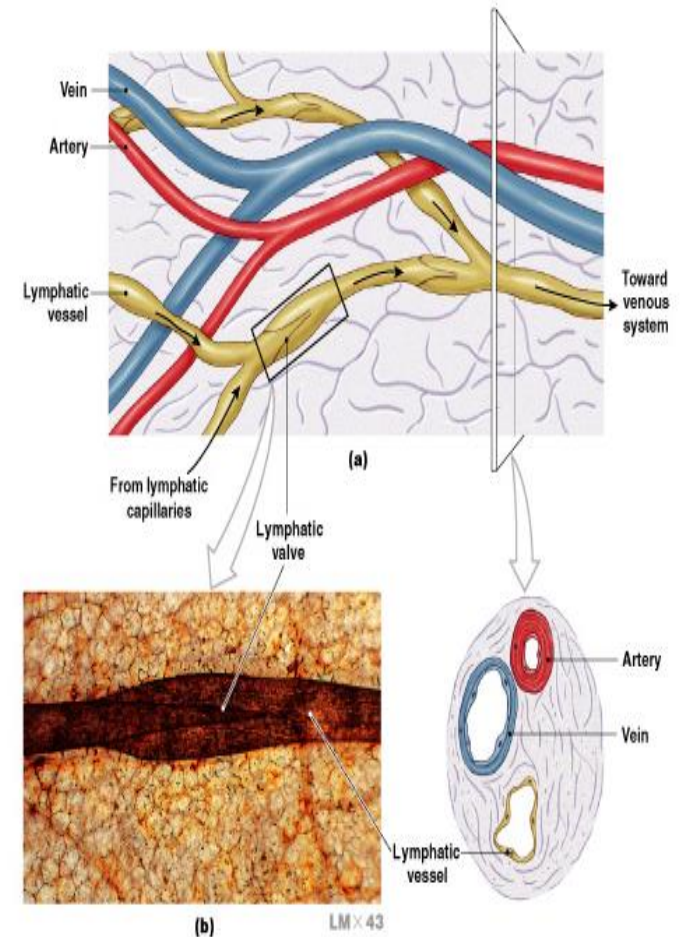
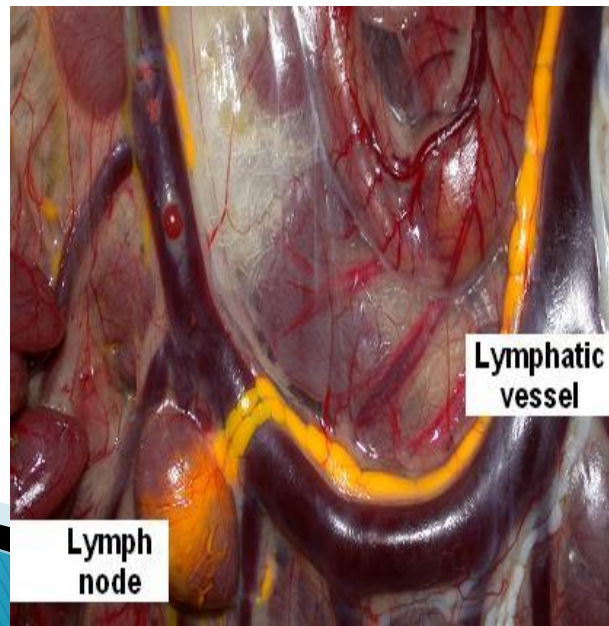
LYMPHATIC MECHANISM

About 10–20% of fluid that leaves the arterial Capillaries is expected to enter the lymphatic System. Lymph fluid is reabsorbed from the Interstitial tissues by the initial lymph capillaries. It is important to know that the larger particles (proteins and Particulate matter) can be removed from the tissue fluid only by the lymphatics.



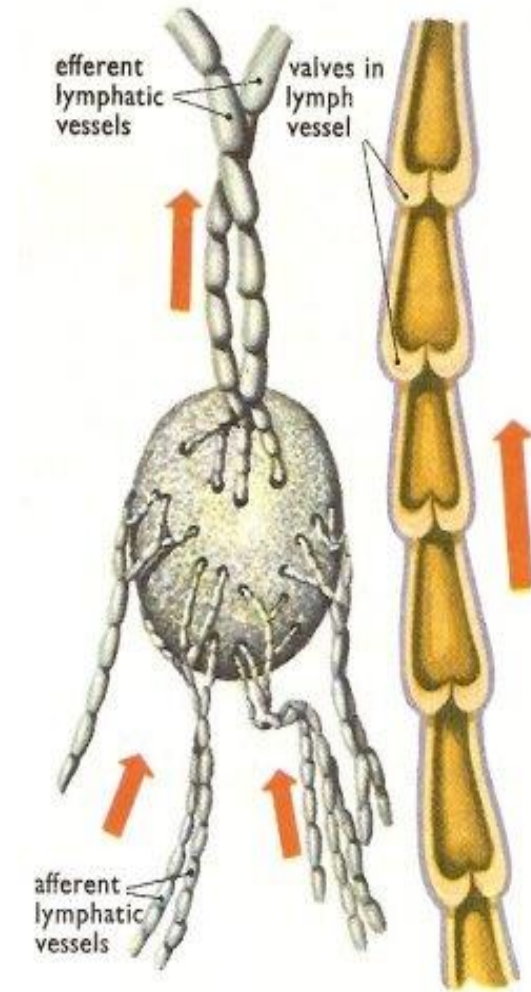
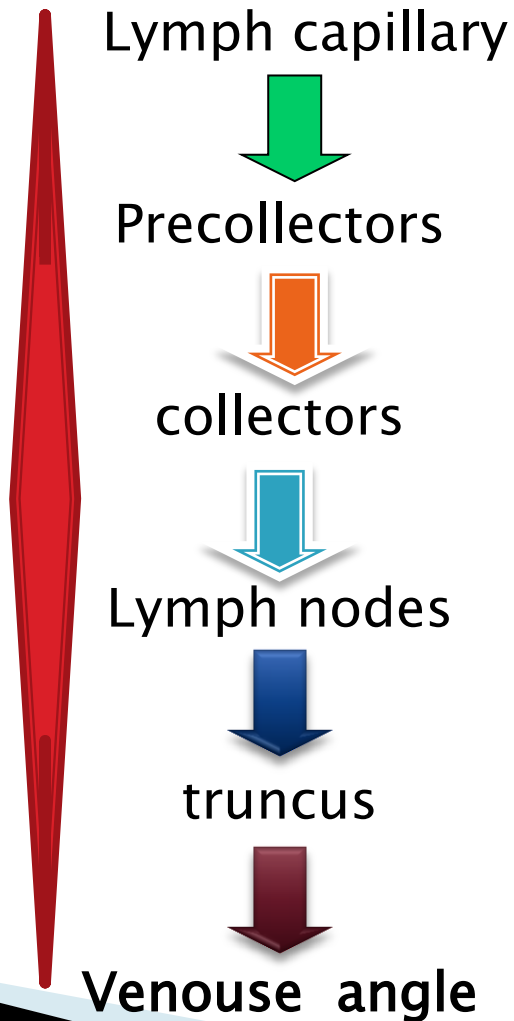
LYMPHATIC MECHANISM

Lymphatic vessels are found in all area with a blood supply.



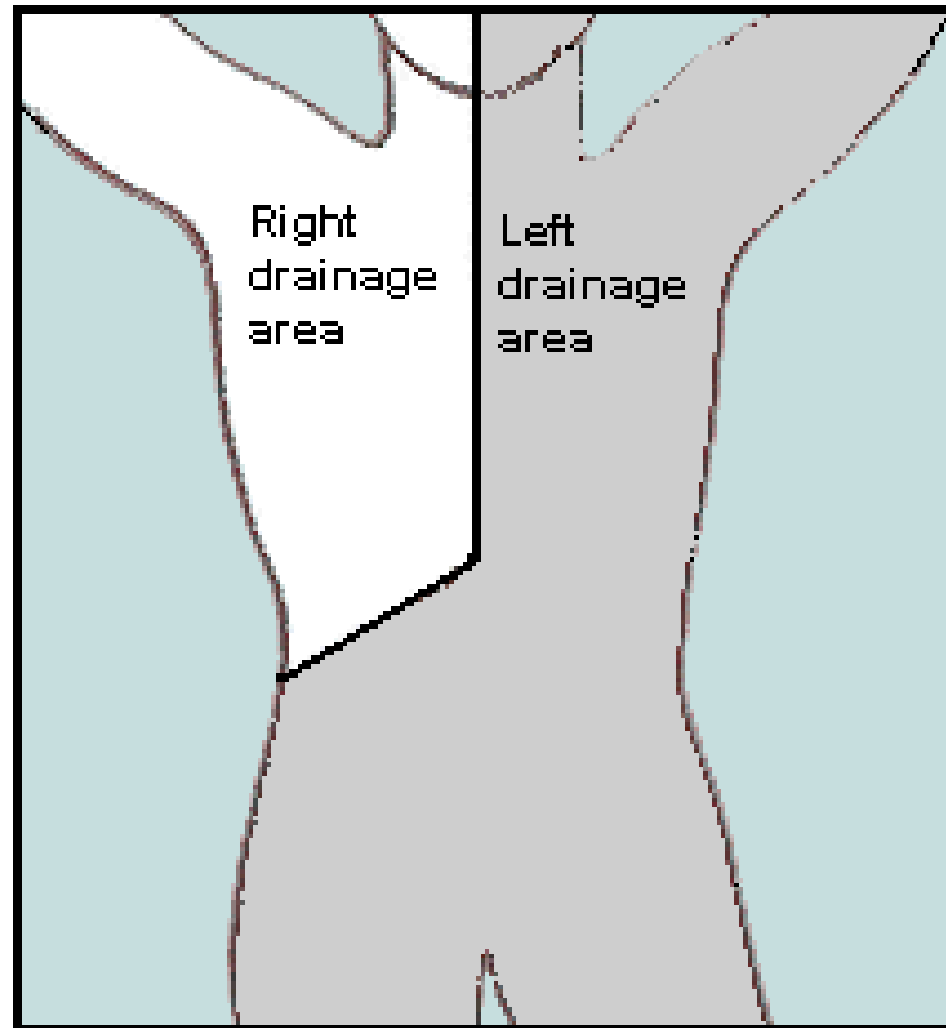
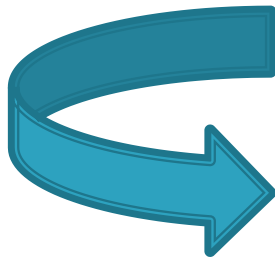
LYMPHATIC MECHANISM

LYMPHATIC PATHWAY

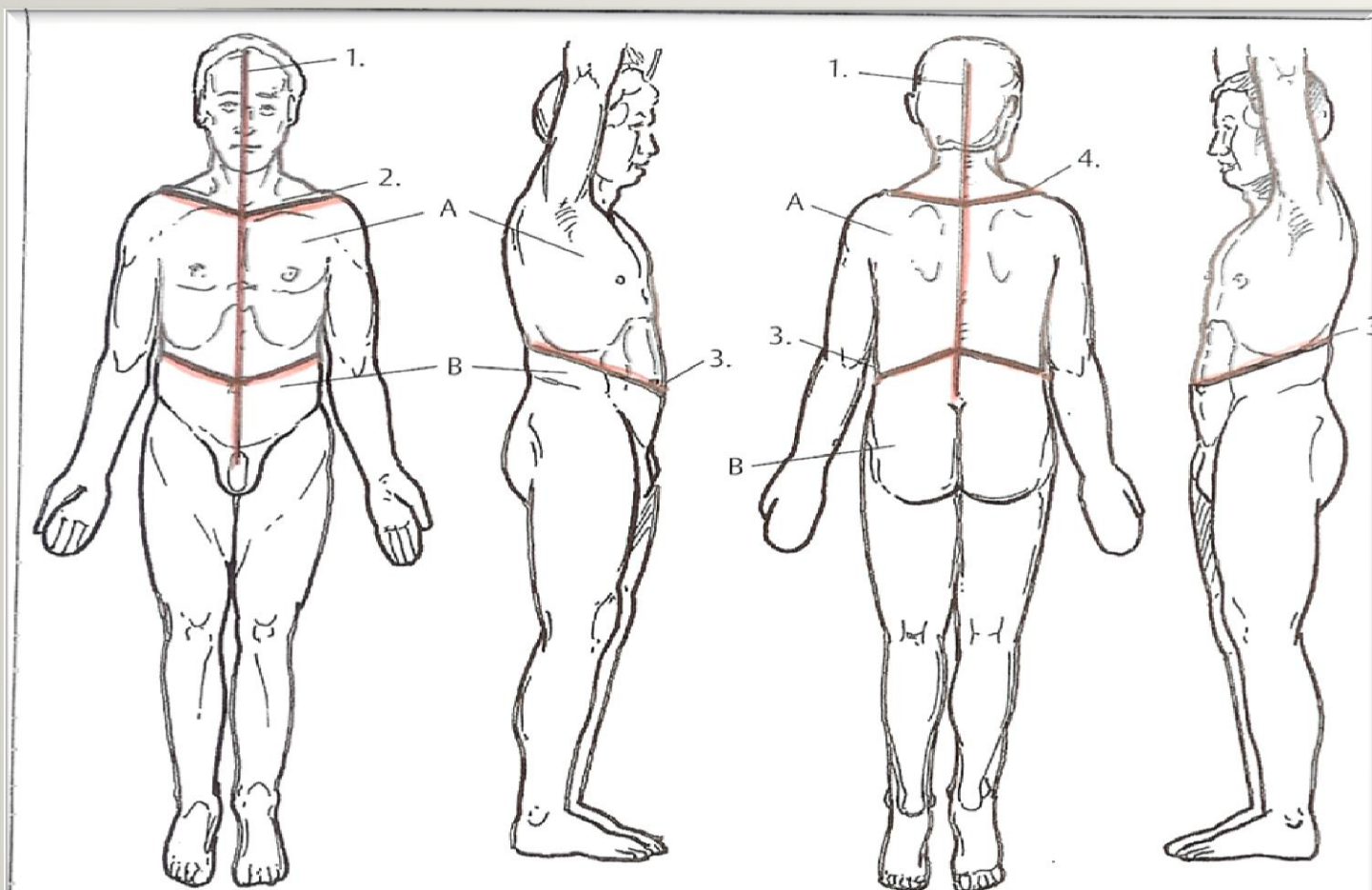


LYMPHATIC MECHANISM

Lymphatic
drainage area



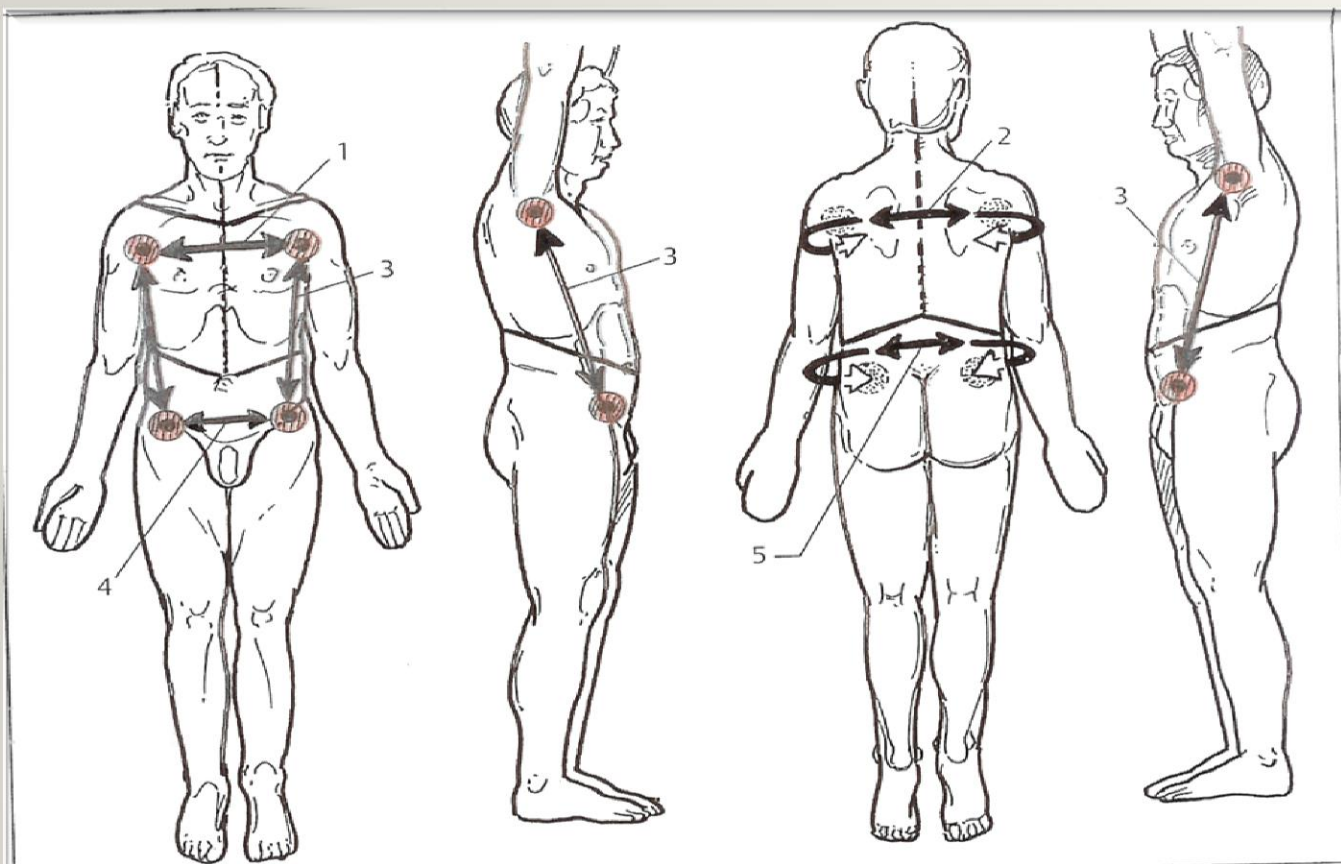
LYMPHATIC MECHANISM



Lymphatic watersheds. 1. Sagittal (median) watershed (anterior and posterior); 2. Upper horizontal watershed (anterior); 3. Horizontal (trans-

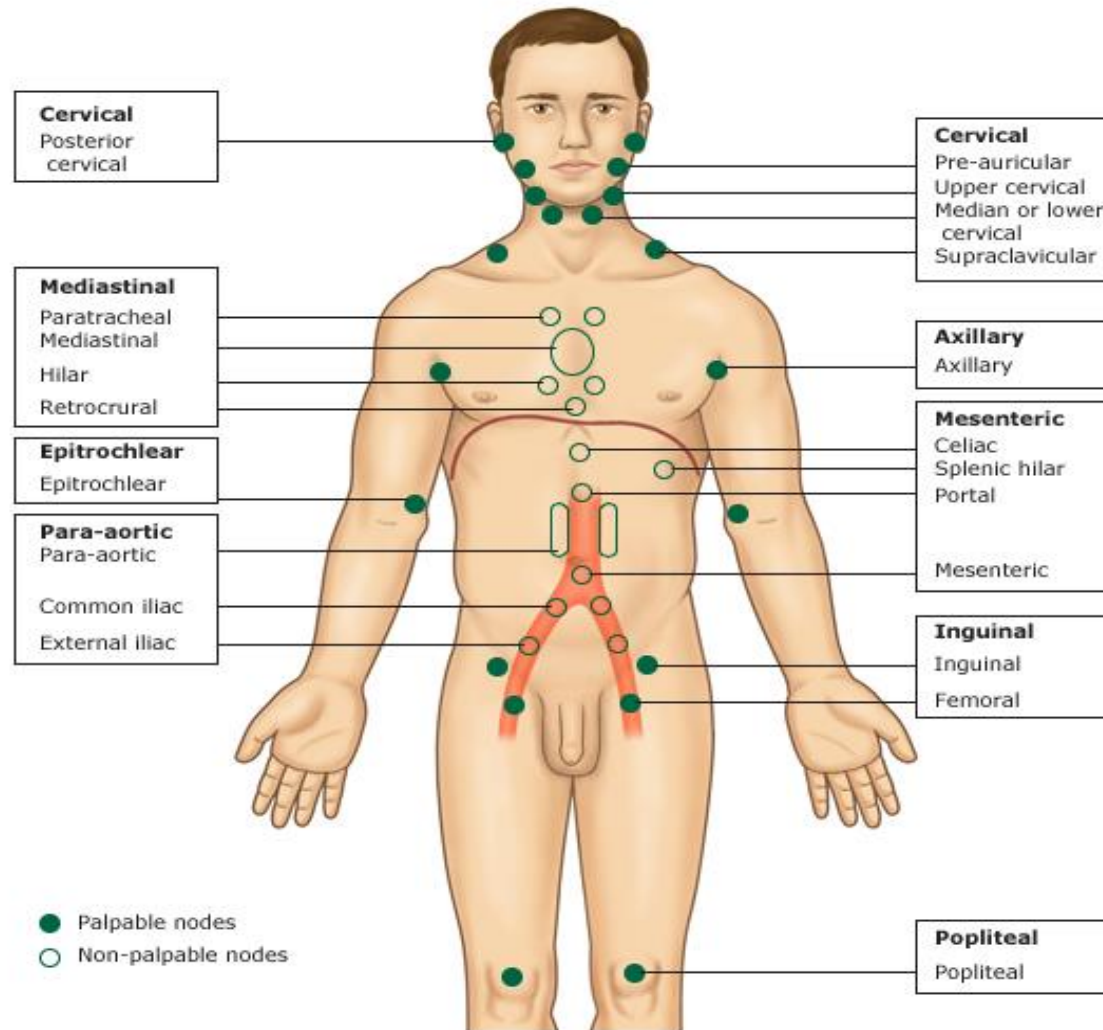
horizontal watershed (posterior); A. Upper quadrant (anterior and posterior); B. Lower quadrants (anterior and posterior).

LYMPHATIC MECHANISM



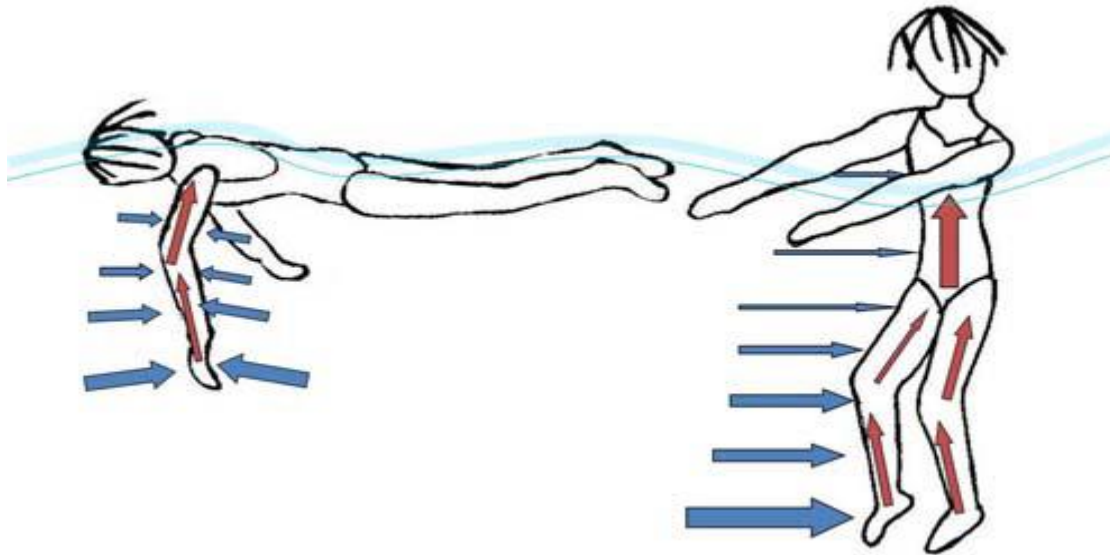
Lymphatic anastomoses. 1. Anterior axillo-axillary (AAA) anastomosis; 2. Posterior axillo-axillary (PAA) anastomosis; 3. Axillo-inguinal (AI) anastomosis, also known as inguinal-axillary (IA) anastomosis; 4. Anterior inter-inguinal (AII) anastomosis; 5. Posterior inter-inguinal (PII) anastomosis.

LYMPHATIC MECHANISM



FORCE OF THE WATER

The hydrostatic pressure of water increases lymph and venous flow, thereby protects the limb from swelling and reduces edema



FORCE OF THE WATER

The hydrostatic pressure of water gradually increases with greater depth, therefore enhancing and influencing the direction of lymphatic flow



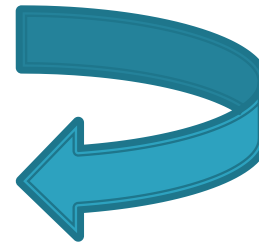
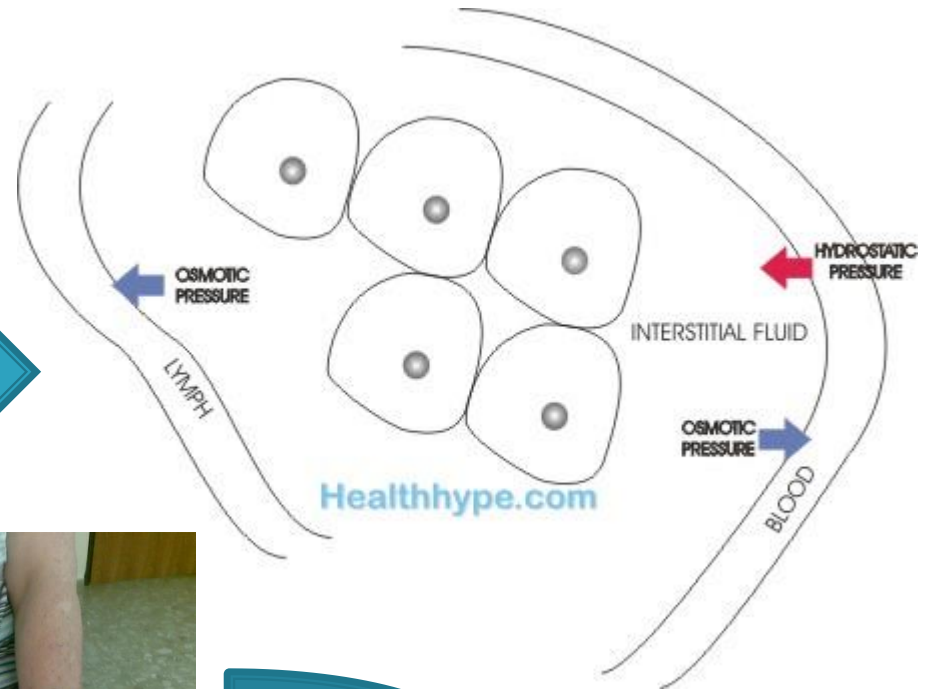
FORCE OF THE WATER

The viscosity of water provides resistance to body movements which promotes strengthening and improves lymphatic clearance.

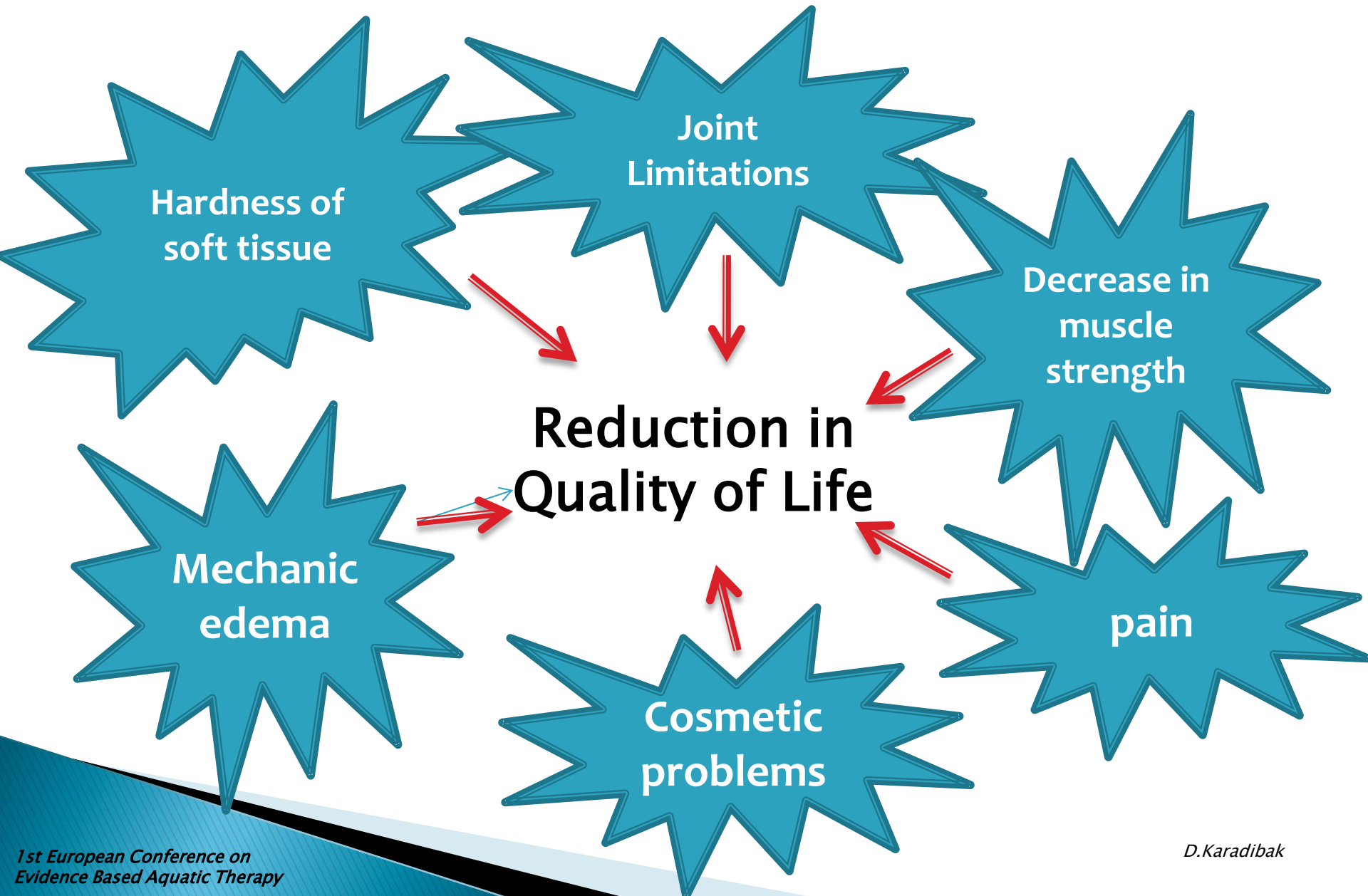


LYMPHEDEMA

Lymphedema is defined as swelling of a body part due to the accumulation of interstitial tissue fluid



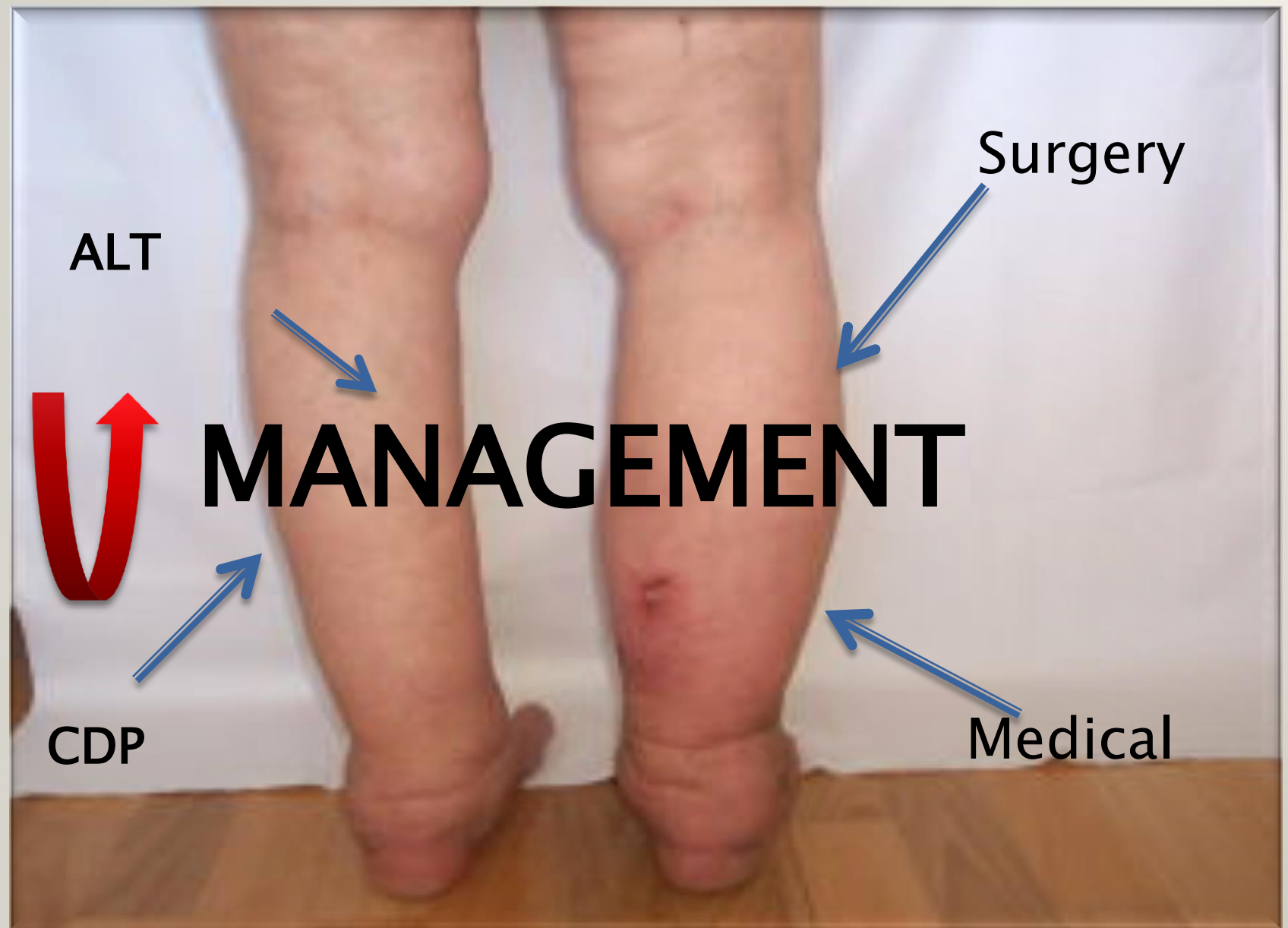
LYMPHEDEMA



Unfortunately, There is no cure

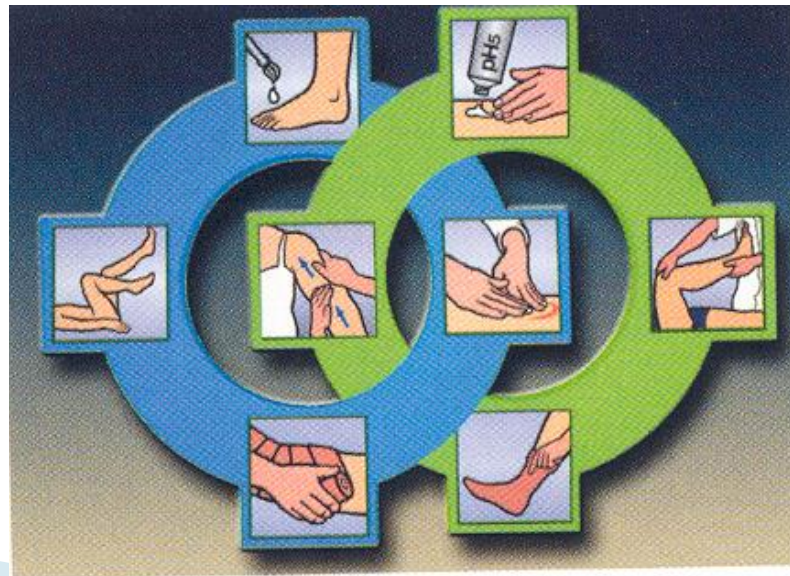


But, edema can be reduced and controlled



COMPLEX DECONGESTIVE PHYSIOTHERAPY(CDP)

The main “gold standard” of treatment for lymphedema is Combined, Complex or Comprehensive Decongestive Therapy



CDP

The Components of CDP

1. Skin and Nail Care education
2. Decongestive Exercises
3. Manual Lymphatic Drainage
4. Therapeutic Compression

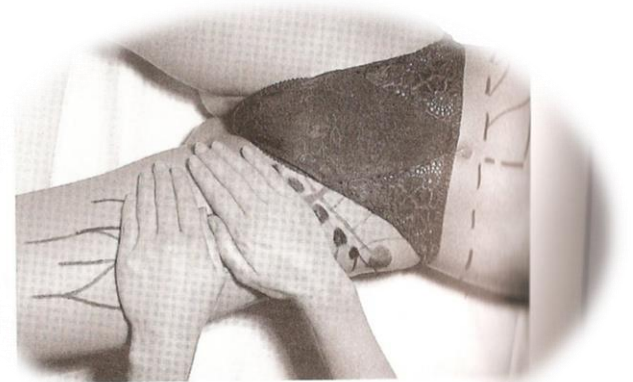


Fig. 9 Ventromedial stationary circles in the area of the lymph nodes. [Source: 5.]



CDP

There are two phases of CDP.

Phase 1, the main goals are to reduce the size of the affected location and to improve the skin



Treatment of the back and lateral

CDP

Phase II is known as the maintenance phase, where the patient self-manages to keep the effects of phase I treatment long term



Report

The comparison of two different physiotherapy methods in treatment of lymphedema after breast surgery

Karadibak Didem^{1,4}, Yurdalan S. Ufuk¹, Saydam Serdar², and Arican Zümre³

¹*School of Physical Therapy and Rehabilitation, Dokuz Eylul University, Inciraltı/Izmir, Turkey;* ²*Department of General Surgery, Dokuz Eylul University, Inciraltı/Izmir, Turkey;* ³*Department of Radiation Oncology, Dokuz Eylul University, Inciraltı/Izmir, Turkey;* ⁴*School of Physical Therapy and Rehabilitation, Dokuz Eylul University, Inciraltı/Izmir, Turkey*

Key words: complex decongestive physiotherapy, lymphedema

Summary

Background. The aim of this study was to compare two different physiotherapy methods in the treatment of lymphedema after breast surgery.

Methods. This study was performed on 53 patients who had developed unilateral lymphedema after the breast cancer treatment. Twenty-seven patients served as the experimental group and were treated with complex decongestive physiotherapy (CDP) applications including lymph drainage, multi layer compression bandage, elevation, remedial exercises and skin care. Twenty-six patients in the control group were treated with standard physiotherapy (SP) applications including bandage, elevation, head–neck and shoulder exercises and skin care. Both groups were recommended a home program consisting of compression bandage exercises, skin care and walking. Patients were taken to a therapy program once a day; 3 days a week for 4 weeks. The range of motion, circumferential measurement, and volumetric measurement were assessed before and after treatment.

Results. The overall improving in the CDP group was shown to be greater than the SP group but when the

ALT



ALT is used to maintain the positive effects of lymphedema reduction that has achieved during the intensive treatment phase of CDP.



ALT

ALT is the combination of remedial aquatic exercises and self-lymphatic drainage performed in a pool directed by a therapist.



ALT

ALT session includes the following elements

- ▶ Skin care  silicone cream
- ▶ Manual lymphatic drainage  self-drainage, and
water massage
- ▶ Compression  the hydrostatic pressure of water
water temperature
- ▶ Remedial exercises  the viscosity of water

ALT

PROPERTIES OF THE POOL

- Water Temperature : 31–33.5 °C
- The depth of the pool: 1.2–1.6m
- The pool size: 11X15m

ALT

It is important to get physical clearance before participating in any pool activity, and to check the sanitary condition of a pool.

Interestingly, the bacteria that causes erysipelas (cellulitis) is not present in pool water, but is actually harbored on the skin. Intact skin preservation is of utmost importance.

ALT

ALT is based on the Casley-Smith remedial Exercises and uses the same principles, yet in an aquatic environment.



ALT

The sequence of exercises in ALT is important.

First, healthy lymphotomes are activated Proximally with breathing exercises in order to clear the reservoir.



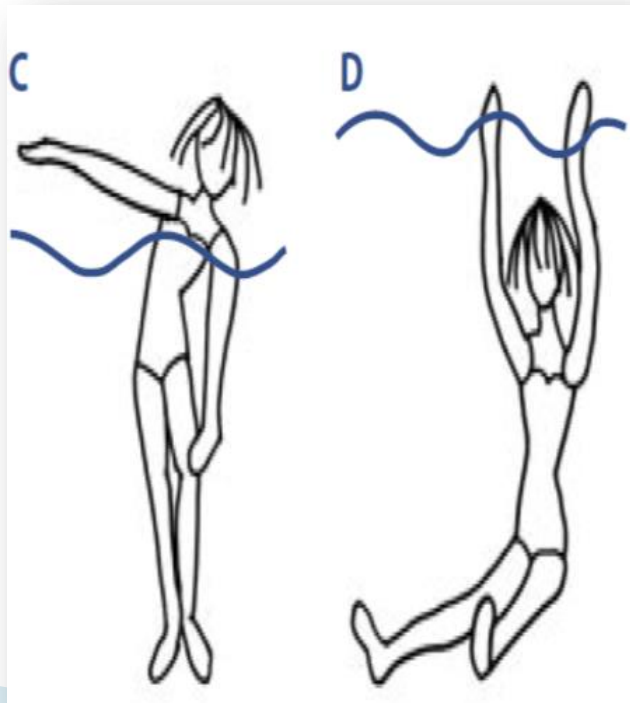
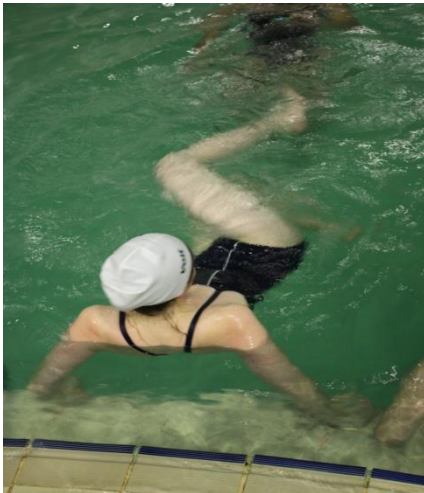
www.NormalBreathing.com



D.Karadibak

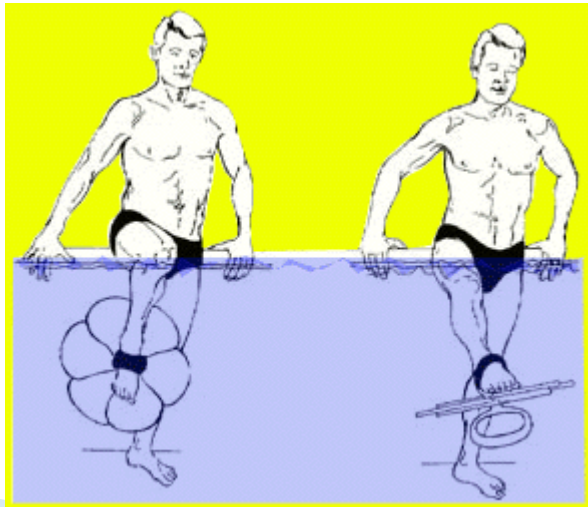
ALT

Second, proximal movements of the thorax, abdomen and shoulder girdle are performed in conjunction with self-massage.



ALT

Finally, exercises are performed to clear the affected lymphotomes into the healthy ones by performing self-massage and movements that involve distal joints of the limbs (ankle, wrist etc)



Aqua lymphatic therapy in women who suffer from breast cancer treatment-related lymphedema: a randomized controlled study

Dorit Tidhar • Michal Katz-Leurer

Support Care Cancer. 2010
Mar;18(3):393

Abstract

Background Lymphedema is an adverse effect of breast cancer surgery. Aqua lymphatic therapy (ALT) is a novel treatment for limb volume reduction.

Objective The aim of this study was to examine whether ALT is a safe method and whether there are differences in adherence, limb volume, and quality of life between women who perform only self-management treatment and women who participate as well in ALT.

Design Design of the study was single-blind randomized clinical trial.

Setting The setting was in a hydrotherapy pool, 1.2 m depth, and a temperature of 32–33°C.

Patients Forty-eight women (56 ± 10 years), with a 12.8% lymphedema relative volume, participated in the study.

Intervention The control group was instructed to perform the self-management treatment. The study group joined a weekly session of ALT for 3 months in addition to the self-management therapy.

Measurements Adherence was assessed by a self-reported diary, limb volume by a water displacement device, quality of life by the Upper Limb Lymphedema Questionnaire (ULL27), prior to, and after the intervention period.

Results There was no episode of arm infection or aggravation in limb volume during the study period. ALT had a positive, statistically and clinically significant immediate effect on limb volume but no long-term effect was noted.

The adherence rate to ALT was significantly higher than the adherence to self-management therapy. QOL improved in the study group.

Conclusion ALT was found to be a safe method, with high adherence, in treating women who suffer from mild to moderate lymphedema. A significant immediate and insignificant long-term effect on limb volume was noted.

Keywords Aqua therapy • Breast cancer • Lymphedema

Introduction

Lymphedema is a rich protein edema that may develop after breast cancer surgery which includes removal of the axillary lymph nodes. The incidence of lymphedema among women who underwent breast cancer surgery with axillary lymph node dissection ranges from 6% to 56% [1–3]. Lymphedema is usually divided into three categories according to severity: mild (up to 20% compared with the healthy arm), moderate (20–40%), and severe (above 40%) [4]. Several factors predict a higher risk for development of lymphedema after breast cancer therapy, including a greater extent of axillary surgery, more positive axillary nodes, a postoperative axillary hematoma, seroma or infection, poor shoulder mobility, the use of nodal radiation, and obesity [5–7]. For women with lymphedema, factors associated with the level of severity include current infection, obesity, and excessive hand use [8].

Aqua Lymphatic Therapy in Managing Lower Extremity Lymphedema

Dorit Tidhar, BPT, Jacqueline Drouin, PhD, PT, and Avi Shimony, MD
Support Oncol 2007;5:179-183

Case Report

A 49-year-old woman (Mrs. J) was diagnosed with vulvar cancer in August 1998. She subsequently underwent vulvectomy with bilateral inguinofemoral lymph node dissection; adjuvant radiotherapy resulted in grade 1 burns to the anus, lower abdomen, and inguinal area. Two months after radiation therapy ended, she developed lymphedema. The limb volume of Mrs. J's lymphadenomatous left lower extremity was 1,739 mL higher than that of her right lower extremity. The initial physical therapy evaluation revealed swelling and fibrosis in the genitals and in the involved lower extremity, especially around the radiated inguinal area. The fibrosis in the inguinal area restricted thigh extension beyond neutral. Her medical history also included atopic urticaria and rhinitis.

Eventually, Mrs. J progressed from low-resistance exercises to high-resistance exercises that included the use of floating devices. After 16 months of ALT, she improved objectively and achieved reduced volume of the involved limb and softening of the fibrosis groin area; as a result, her movements were no longer restricted. Overall, her endurance increased enough that she could work for an entire day. Instead of having to wear her compression garment every day, she eventually was able to wear it only 3 days per week without experiencing swelling of the involved limb. Overall, Mrs. J met her goals for well-being.

RESULT

There are few studies about the effect of ALT on the lymphedema . So,further clinical research is needed to provide evidence on its usefulness in patients with lymphedema





THANK YOU