

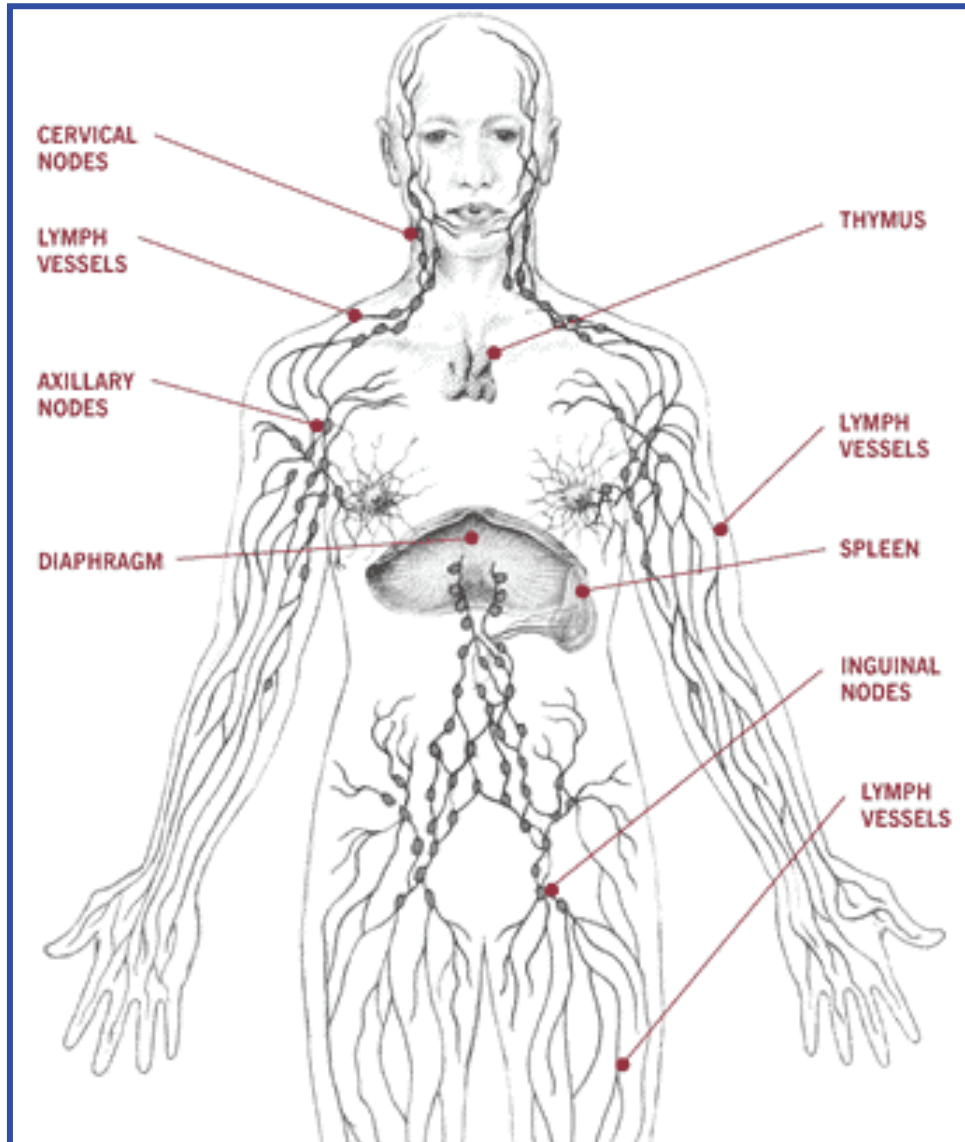
7. LYMPHOEDEMA

7.1 The Lymphatic System

7.2 Lymphoedema; assessment, prevention
and management strategies

7.3 Key Points

The Lymphatic System



Acknowledgements:

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[7.2 Lymphoedema](#)

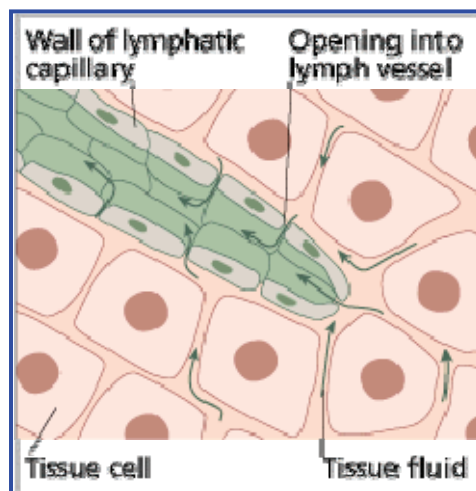
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What is the Lymphatic System?

The lymphatic system is a system of thin tubes that runs throughout the body. These tubes are called 'lymph vessels'. They are also called 'lymphatic vessels'.

The lymphatic system is like the [blood circulation](#) - the tubes branch through all parts of the body like the arteries and veins that carry blood, except that the lymphatic system carries a colourless liquid called 'lymph'.

Lymph is a clear fluid that circulates around the body tissues. It contains a high number of lymphocytes ([white blood cells](#)). [Plasma](#) leaks out of the [capillaries](#) to surround and bathe the body tissues. This then drains into the lymph vessels.



The fluid, now called lymph, then flows through the lymphatic system to the biggest lymph vessel - the thoracic duct. The thoracic duct then empties back into the blood circulation.

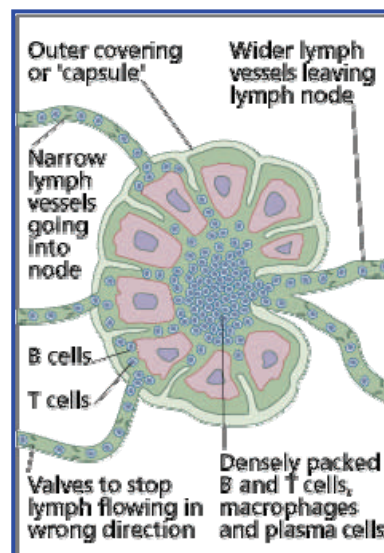
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Lymph glands

Along the lymph vessels are small bean-shaped lymph glands or 'nodes'. It is usually possible to feel some of the lymph nodes.



There are lymph nodes

- Under each arm, in the armpits
- In each groin (at the top of the legs)
- In the neck

There are also lymph nodes that cannot be felt in

- the abdomen
- the pelvis
- the chest

What does the lymphatic system do?

The lymphatic system does three main jobs in the body. It

- [Drains fluid](#) back into the bloodstream from the tissues
- [Filters lymph](#)
- [Fights infections](#)

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Draining fluid into the bloodstream

As the blood circulates, fluid leaks out into the body tissues. This fluid is important because it carries food to the cells and waste products back to the bloodstream. The leaked fluid drains into the lymph vessels. It is carried through the lymph vessels to the base of the neck where it is emptied back into the bloodstream. This circulation of fluid through the body is going on all the time.

Filtering lymph

This is the job of the spleen. It filters the lymph to take out all the old worn out red blood cells. These are destroyed and replaced by new red blood cells that have been made in the bone marrow.

Fighting infection

When people say "I'm not well, my glands are up" they are really saying they have swollen lymph nodes because they have an infection. The lymphatic system helps fight infection in many ways such as:

- Helping to make special white blood cells (lymphocytes) that produce antibodies
- Having other blood cells called macrophages inside the lymph nodes which swallow up and kill foreign particles, for example germs.

Acknowledgments:

This information was developed by [CancerHelp UK](#)

Further Information:

Websites:

The [lymphatic system illustration](#) on the previous page

The [Cancer Help UK lymphatic system](#) UK

The [Better Health lymphatic system](#) Victorian Government

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What is Lymphoedema?

Reproduced with permission from the National Breast Cancer Centre (NBCC website) : www.nbcc.org.au

- Lymphoedema is a swelling of the arm and hand which may occur immediately or at any time after surgery or radiation therapy.
- Lymph is a normal colourless fluid which forms in the body and drains into the blood through a network of vessels and nodes. Lymph nodes are filter stations which play an important part in the body's defence against infection. Muscle movements help move lymph fluids.
- Most women who have surgery for breast cancer have some lymph nodes under their arm removed. This surgery interferes with the natural flow of lymph.
- If the lymph nodes are removed by surgery or damaged by radiotherapy, fluid can accumulate in the tissues and swelling (oedema) occurs. This is known as lymphoedema. Untreated, this swelling may become difficult to control. Most women have symptoms of swelling, numbness, discomfort and shooting pains in the arm, breast and armpit immediately after surgery. This is not lymphoedema.

Key points:

- Most breast cancer patients do not get lymphoedema.
- Experts believe that removing only the sentinel node (sentinel node biopsy) will reduce the incidence of lymphoedema (at this stage the procedure is only being done as part of a clinical trial).
- Lymphoedema can be managed and prevented/reduced. The earlier lymphoedema is diagnosed and treated, the more successful the results.
- You may wish to take extra care in your daily life to reduce your risk of lymphoedema. This does not mean that you have to stop living a normal active life.

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What is Lymphoedema? *cont'd*

Early signs of lymphoedema

The person may experience the following symptoms in the arm on the side of the operation:

- A heavy, tight arm
- Pins and needles in the arm, swelling of the arm or breast or any part of these
- Numbness, temperature changes and aches in the arm and/or shoulder
- Indentations in the skin from tight clothing, wearing a watch or jewellery
- Rings or jewellery which feel tighter than normal
- an appearance of swelling in the arm

What triggers lymphoedema?

Some factors have a much greater probability of causing or increasing lymphoedema than others.

The most important ones are:

Infections in the arm: Perhaps resulting from cuts, injections, insect bites, scratches, burns or sunburn. Keeping skin moisturised and supple reduces the risk of infection. Treat any possible infections promptly with antiseptic. If the arm becomes red or swollen and the person feels unwell, perhaps with flu-like symptoms, they should see their medical practitioner immediately.

Being overweight: Excess weight may slow the lymph flow.

Too little or too much exercise: Gentle muscle movement increases lymph flow and reduces the risk of fluids accumulating. It is better to do gentle regular exercise than occasional bursts of intense exercise. If the person wants to exercise vigorously, they should work up to it and keep an eye on the swelling. Find the exercise routine which suits.

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What is Lymphoedema? *cont'd*

Other factors include:

Overheating the arm: Sun, hot baths, spas, saunas, excessive exercise, sprains and bruises - all these cause lymph flow to increase and may overload the lymph vessels.

Travelling: Sitting still on long car or bus trips and pressure variations in planes may reduce lymph flow. There are precautions that can be taken - the person should ask a lymphoedema therapist.

Holding heavy parcels: This can reduce lymph flow. Work up to carrying heavy items and check for swelling.

Constrictions to the upper body or arm: For example, blood pressure cuffs, tourniquets, bras with narrow straps, clothes which are tight around the chest or arm, and tight jewellery or watches may reduce lymph flow.

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Lymphoedema: Key Points

Women who have lymphoedema, or who have had both surgery and radiotherapy to the axilla resulting in a high risk of developing lymphoedema, need to look after their arm as the risk of infection is high. Women should be advised that the risk of problems associated with lymphoedema may be decreased by adhering to the following:

- If the arm on the same side as the surgery is cut or infected, or becomes hot, red, or swollen, immediate medical advice should be sought, the area cleaned and oral antibiotics commenced at the earliest sign of infection
- If possible, avoid: having blood taken in the affected arm, blood pressure checked, a drip inserted or injections or vaccinations
- Avoid cuts, burns and insect bites
- Avoid washing the dishes without gloves
- Avoid letting the arm get sunburnt
- Avoid gardening without gloves and long sleeves
- Avoid carrying anything heavy with the affected arm
- Wear loose clothing and loose jewellery
- Use skin cream to keep the skin of the arm moist
- Keep cool during hot weather
- Eat a healthy diet to maintain body weight within reasonable limits

Any intervention in the affected arm should be very carefully considered.

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Lymphoedema

Further Information:

[Lymphoedema checklist](#)

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Websites:

[The Lymphoedema Association of Australia](#)

[Lymphoedema](#) - Breast Cancer Network Australia

[Lymphoedema](#) - NSW Breast Cancer Institute

[Adelaide Lymphoedema Clinic](#)

[Living with Lymphoedema after breast cancer treatment](#) (UK site)

[What is lymphoedema?](#) (UK site)

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