Lymphoedema
Lymphoedema is characterised by swelling of certain parts of the body, caused by problems with the lymphatic system. Any part of the body can be affected by lymphoedema, but it tends to target the arms and legs. Around 300,000 Australians will experience lymphoedema at any given time.

Normally, fluid and proteins leak into the body tissues regularly from the blood. This tissue fluid bathes the cells, supplies their nutritional needs and receives back the products of their metabolism. The lymphatic system is a network of tubes throughout the body that drains this fluid (called lymph) from tissues and empties it back into the bloodstream. When this system is not working properly, lymphoedema can occur.

Women who have undergone surgery and radiotherapy for treatment of breast cancer are particularly susceptible to lymphoedema of the arm and, sometimes, the adjacent chest wall on the affected side. Men and women who have had surgery and radiotherapy for the treatment of cancer of the prostate, bowel or reproductive systems are also prone to lymphoedema of the legs or groin areas.

Symptoms of lymphoedema

The symptoms of lymphoedema may include:

- the affected area feels heavy
- the skin feels tight and close to bursting point
- the skin is hotter than other areas of the body
- aching
- pins and needles
- darting pains
- painful joints
- swelling.

The lymphatic system

The main roles of the lymphatic system include managing the fluid levels in the body, filtering out bacteria, and housing types of white blood cells crucial to the body’s ability to fight infection. Muscular movements and contractions of the larger lymph vessels pump the lymph through the network of tubes. One-way valves in the vessels prevent the lymph from travelling backwards. The lymph is cleared of micro-organisms in glands of tissue called lymph nodes, located around the body. The lymph is eventually returned to the bloodstream, mainly through blood vessels in the neck.

Swelling, inflammation and risk of infection

Oedema (temporary swelling) occurs when the lymphatic system can’t efficiently remove excess fluid from tissues. A sprained ankle, for example, may be swollen for a few days or weeks. Lymphoedema occurs when the lymphatic system is injured or obstructed. The excess fluid and proteins in the tissue cause swelling and decrease the amount of oxygen available to the cells.

The extra proteins cause inflammation, which leads to fibrosis if lymphoedema is not treated.

The combination of extra proteins and body heat provides a perfect breeding ground for bacteria and fungus. These infections place greater stresses on the already labouring lymphatic system and hospital admission may be required in severe cases.

Primary lymphoedema

Primary lymphoedema is characterised by structural problems with the lymphatic system. The vessels may pump sluggishly or there may be insufficient numbers of vessels, or both may occur. Primary lymphoedema may be present before birth (congenital lymphoedema) or may develop during puberty (lymphoedema praecox) or middle age (lymphoedema tarda).

For those people who have a structural problem with the lymphatic system, the risk of developing a secondary lymphoedema overlying it is higher if they have surgery or radiotherapy for cancer treatment or other surgeries.

Secondary lymphoedema

Secondary lymphoedema is caused by obstructions in the lymphatic drainage system. This may be due to:

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• surgery – particularly cancer-related surgery where lymph nodes are removed
• radiotherapy – the x-rays used to kill cancer cells may damage or destroy the nearby lymph nodes
• trauma – an injury to a lymphatic vessel may not heal properly
• parasites – such as worms, which may inhabit and block a lymphatic vessel
• lack of movement – muscular contractions are required to help pump the lymph through the vessels. Lack of movement allows the lymph to pool, particularly in the legs
• allergy – allergic reactions may affect the lymphatic system.

Lymphoedema after treatment for breast cancer

Swelling of the arm, the remaining breast tissue or the chest can follow breast cancer surgery if the nearby lymph nodes in the armpit are removed. Radiotherapy can also cause swelling. Although the incidence varies – depending on the number of lymph nodes removed, whether radiotherapy was given and a range of other factors – around 10 per cent of women will experience lymphoedema to some degree with radiotherapy alone, while up to one-third of women who undergo both radiotherapy and surgery (and have other risk factors) will be affected. Lymphoedema can occur at any stage after the intervention, even 20 years later.

Diagnosis of lymphoedema

Lymphoedema is diagnosed with a number of different tests, including:

• Physical examination – taking into account the person’s prior medical history.
• Scans – specialised x-rays, including CT scans and especially lymphoscintigraphy (which gives a functional picture of the lymphatic system).
• Bioimpedance – to detect fluids.
• Perometry – to detect limb volume and circumference changes.
• Tonometry – to detect changes in the toughness (fibre) of the limb.

Treatment for lymphoedema

Lymphoedema can be treated in a number of ways, including:

• complex physical therapy (CPT) – combining compression, lymphatic draining, special exercises and skin care techniques
• compression bandages – to promote lymph flow
• lymphatic drainage massage – to manually move the lymph to a previously cleared, unaffected area and increase what drainage is present in the limb
• special exercises – muscular movement helps to pump lymph
• medications – such as benzopyrones (Paroven) to help remove excess proteins and associated fluid from the tissues
• massage – the person or their carer can be taught massage techniques
• low-level laser therapy – which can soften fibrotic tissue and help stimulate poorly functioning lymph vessels
• electrical stimulation – of the muscular elements of the lymph vessels and surrounding musculature
• various forms of vibratory massage – all of which in some way vary the tissue pressure and encourage uptake of fluids and their contents into the lymph vessels.

Financial assistance to purchase compression garments is available for people who are pension card holders through the Lymphoedema Compression Garment Program (Tel. 03 8458 4988).

Surgery for lymphoedema

Surgical procedures are not suitable for everyone and are best considered when all other efforts fail. The different types of surgery that may be used include:

• Lymphatic transplant operations – lymphatic vessels from a normal limb are surgically transferred into the affected area.
• Lympho-venous anastomosis – an existing, but blocked lymphatic vessel is joined to a vein.
• Liposuction – excess superficial tissue is sucked out between the skin and muscle layers. (This is most beneficial in the middle, fatty stage of lymphoedema.)

Self-help for lymphoedema

Areas of the body affected by lymphoedema are prone to infection. Suggestions to manage lymphoedema include:

• Pay particular attention to skin care to reduce the risk of infection.
• Avoid cuts, abrasions or other tissue injuries in the affected area.
• Don’t allow your skin to be sunburned.
• Avoid direct heat, such as hot baths, saunas and sunbathing.
• Have your bra professionally fitted.
• Don’t wear tight jewellery.
• Try not to sit down for long periods of time or, if you do, elevate the affected limb.
• Take regular and gentle exercise. (Tai chi and chi gong have recently been shown to be very effective for arm lymphoedemas). Even higher levels of exercise can be beneficial but talk to your health professional before starting any new activity.
• Make sure that any medical procedures such as injections, blood tests or blood pressure readings are taken from the unaffected arm if possible. If this is not possible, make sure that any wound site is well cleaned and signs for any early infection are reacted to.
• Avoid carrying heavy loads for any length of time, as this does not allow good lymph fluid clearance from the tissues.

Where to get help

• Your doctor
• NURSE-ON-CALL Tel. 1300 60 60 24 – for expert health information and advice (24 hours, 7 days)
• Australasian Lymphology Association Tel. (03) 9895 4486
• Lymphoedema Compression Garment Program Tel. 03 8458 4988

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Things to remember

- Lymphoedema is characterised by swelling of certain parts of the body, caused by problems with the lymphatic system.
- Women who have undergone surgery and radiotherapy for treatment of breast cancer are particularly susceptible.
- Treatment options include massage, medications, compression bandages, special exercises and surgery.

References

- What is lymphoedema? [online], Lymphoedema Association of Australia. More information here.
- How can lymphoedema be treated? [online], Lymphoedema Association of Australia. More information here.
- Lymphoedema: An information guide for patients [online] (479kb, pdf), Westmead Breast Cancer Institute, NSW. More information here.
Send us your feedback

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More information

Cancer

The following content is displayed as Tabs. Once you have activated a link navigate to the end of the list to view its associated content. The activated link is defined as Active Tab

- A-Z of cancer conditions
- Cancer explained
- Cancer risk factors
- Screening and early detection
- Cancer treatments
- Living with cancer

A-Z of cancer conditions

- Bladder cancer
  Bladder cancer affects twice as many men as women.
- Bone cancer
  Bone cancer is a rare form of cancer that is treated with chemotherapy, radiotherapy or hormone therapy.
- Bowel cancer
  Bowel cancer is highly curable if found at an early stage.
- Brain tumours - cancer
  Brain cancer symptoms and treatment depend on which part of the brain is affected.
- Brain tumours - gliomas
  Gliomas are brain tumours associated with the three types of glial cell in the brain.
- Breast cancer
  Breast cancer is the most common cancer in Australian women.
- Breast Cancer - Early Diagnosis (video)
  Being diagnosed with breast cancer can be overwhelming. Women, their partners and families need support to cope with the emotional impact of the illness on their daily lives. In this video clip...
- Cervical cancer
  All women aged between 25 and 74 are advised to have Cervical Screening Tests every 5 years, new tests help identify HPV or cervical cancer.
- Fallopian tube cancer
  Fallopian tube cancer is one of the rarest gynaecological cancers.
- Kidney cancer
  Most kidney cancers are found when the doctor is checking for something else.
- Leukaemia
  Most children and many adults with acute leukaemia can expect to be cured, while chronic leukaemia can be successfully managed.
- Liver cancer
  Liver cancer can be a primary cancer that starts in the liver, or a secondary cancer that starts in another part of the body and spreads to the liver.

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- Living with Bowel Cancer - Treatment and Surgery (video)
  Participants discuss their surgery, chemotherapy and radiotherapy. Each person's situation is different as are their treatment options. Participants share some of the side effects and also their...

- Lung cancer
  Lung cancer occurs most often in adults between the ages of 40 and 70 who have smoked cigarettes for at least 20 years...

- Lymphoma
  Lymphoma is a general term for a cancer that begins in the lymphatic system...

- Melanoma
  If untreated, melanomas can spread to other parts of the body and may be fatal...

- Mesothelioma
  Mesothelioma is a rare type of cancer that can develop decades after exposure to asbestos...

- Molar pregnancy
  Most molar pregnancies are diagnosed when bleeding early in pregnancy prompts an ultrasound scan...

- Mouth cancer
  Smoking increases the risk of mouth cancer six-fold...

- Multiple myeloma
  Multiple myeloma is cancer of plasma cells in the bone marrow...

- Ovarian cancer
  Many women with early stage ovarian cancer may not have any symptoms...

- Pancreatic cancer
  The causes of pancreatic cancer are unknown, but smokers are at greater risk...

- Pituitary tumour
  Generally, pituitary tumours are benign and slow growing, and pituitary cancers are extremely rare...

- Prostate cancer
  Prostate cancer can be treated in a variety of ways, so discuss treatment options with your doctor...

- Prostate Cancer - Diagnosis (video)
  In this video clip, participants discuss the events that led to them being tested for prostate cancer, whether that was regular PSA testing or in response to a GP recommendation...

- Rectal cancer
  If treated in its earliest stages, rectal cancer is highly curable...

- Skin cancer
  Check all of your skin, not just sun-exposed areas. If you notice anything unusual, including any change in shape, colour or size of a spot, or the development of a spot, visit your doctor as soon as...

- Skin cancer - children
  Encourage your child to be SunSmart? whatever their age...

- Stomach cancer
  The symptoms of stomach cancer are usually vague and can be common to other medical conditions...

- Testicular cancer
  Early diagnosis and treatment can cure almost all cases of testicular cancer...

- Throat cancer
  Risk factors for throat cancer include smoking and heavy alcohol consumption...

- Uterine cancer
  Uterine cancer is one of the most common gynaecological cancers...

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- **Vaginal cancer**
  Some vaginal cancers have no symptoms in their early stages, and only cause symptoms once they have invaded other parts of the body.

- **Vulvar cancer**
  In its early stages, vulvar cancer often has no symptoms because the cancer is so tiny.

**Cancer explained**

- **Breast Cancer - Early Diagnosis (video)**
  Being diagnosed with breast cancer can be overwhelming. Women, their partners and families need support to cope with the emotional impact of the illness on their daily lives. In this video clip...

- **Cancer Council Victoria**
  Cancer Council Victoria aims to reduce the impact of all cancers for all Victorians.

- **Cancer explained**
  There are about 200 different types of cancer and most areas of the body can be affected.

- **Living with Bowel Cancer - Treatment and Surgery (video)**
  Participants discuss their surgery, chemotherapy and radiotherapy. Each person's situation is different as are their treatment options. Participants share some of the side effects and also their...

- **Prostate Cancer - Diagnosis (video)**
  In this video clip, participants discuss the events that led to them being tested for prostate cancer, whether that was regular PSA testing or in response to a GP recommendation.

**Cancer risk factors**

- **Breast Cancer - Early Diagnosis (video)**
  Being diagnosed with breast cancer can be overwhelming. Women, their partners and families need support to cope with the emotional impact of the illness on their daily lives. In this video clip.

- **Cancer and asbestos**
  Long-term exposure to asbestos is a cause of lung cancer and other serious illnesses.

- **Cancer and food**
  Diet can influence your risk of developing some cancers, but there is no evidence that specific foods can cause or cure cancer.

- **Cancer and heredity**
  Latest research suggests that most cancers are caused by environmental rather than genetic factors.

- **Disease clusters**
  Disease clusters are rare but can cause community concern about the possible effects of exposure to environmental hazards.

- **Prostate Cancer - Diagnosis (video)**
  In this video clip, participants discuss the events that led to them being tested for prostate cancer, whether that was regular PSA testing or in response to a GP recommendation.

- **Skin cancer - protecting outdoor workers**
  People who work outdoors are in one of the highest risk groups for skin cancer.

- **Skin cancer - risk factors**
  The major cause of skin cancer is over exposure to ultraviolet radiation from the sun or other sources, such as solariums.

- **Skin cancer - tanning**
  A suntan is a sign of skin damage - there is no such thing as a 'safe' tan.

- **Smoking kills**
  Tobacco causes more illness and death than any other drug.

**Screening and early detection**

- **Biopsies**

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Before a biopsy, you need to discuss a range of issues with your doctor or surgeon...

- **Bowel cancer screening**
  The National Bowel Cancer Screening Program (NBCSP) offers kits for free to Australians between the ages of 50 and 74 years of age...

- **Breast Cancer - Early Diagnosis (video)**
  Being diagnosed with breast cancer can be overwhelming. Women, their partners and families need support to cope with the emotional impact of the illness on their daily lives. In this video clip...

- **Breast screening**
  A breast x-ray or mammogram every two years is recommended for women aged 50 to 69...

- **Cancer screening**
  The aim of cancer screening is to find cancer in its early stages...

- **Cervical screening tests**
  The cervical screening test protects up to 30 per cent more women than the Pap test...

- **Genetic testing for inherited cancer**
  A predisposition to certain cancers can be inherited via altered genes...

- **Living with Bowel Cancer - Treatment and Surgery (video)**
  Participants discuss their surgery, chemotherapy and radiotherapy. Each person’s situation is different as were their treatment options. Participants share some of the side effects and also their...

- **Prostate Cancer - Diagnosis (video)**
  In this video clip, participants discuss the events that led to them being tested for prostate cancer, whether that was regular PSA testing or in response to a GP recommendation...

- **Prostate cancer testing**
  Men with a family history of prostate cancer, or men who have had a raised test result in the past, will benefit most from regular testing...

### Cancer treatments

- **Breast cancer and oestrogen**
  There are different types of breast cancer, and around 70 per cent are sensitive to the female sex hormone oestrogen...

- **Breast Cancer - Early Diagnosis (video)**
  Being diagnosed with breast cancer can be overwhelming. Women, their partners and families need support to cope with the emotional impact of the illness on their daily lives. In this video clip...

- **Cancer pain management**
  A person with cancer who obtains pain relief is likely to sleep better and have more energy during the day...

- **Cancer treatments - chemotherapy**
  Chemotherapy is the use of drugs to destroy cancer cells...

- **Cancer treatments - radiotherapy**
  Radiotherapy uses precisely targeted x-rays to destroy cancer cells while reducing the impact of radiation on healthy cells...

- **Living with Bowel Cancer - Treatment and Surgery (video)**
  Participants discuss their surgery, chemotherapy and radiotherapy. Each person’s situation is different as were their treatment options. Participants share some of the side effects and also their...

- **Palliative care – dealing with common symptoms**
  Some people prefer having palliative care at home because of the familiar environment, feeling of independence and close access to family, friends and the local community...

- **Prostate cancer - androgen deprivation therapy**
  One of the treatments for prostate cancer is androgen deprivation therapy (previously called hormone therapy)...

- **Prostate Cancer - Diagnosis (video)**
  In this video clip, participants discuss the events that led to them being tested for prostate cancer, whether that was regular PSA testing or in response to a GP recommendation...
Prostatectomy - for cancer

The aim of a radical prostatectomy is to remove the cancer before it spreads to other parts of the body.

Living with cancer

Breast Cancer - Early Diagnosis (video)

Being diagnosed with breast cancer can be overwhelming. Women, their partners and families need support to cope with the emotional impact of the illness on their daily lives. In this video clip...

Cancer and malnutrition

It is important for the health of people with cancer to eat well before, during and after cancer treatment.

Cancer - exercise to help you cope

People with cancer should be as physically active as their abilities and condition allow.

Cancer pain management

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Lymphoedema

Women who have undergone treatment of breast cancer are particularly susceptible to lymphoedema of the arm.

Prostate Cancer - Diagnosis (video)

In this video clip, participants discuss the events that led to them being tested for prostate cancer, whether that was regular PSA testing or in response to a GP recommendation.

Related Information

Lymphoma

Lymphoma is a general term for a cancer that begins in the lymphatic system.

Fluid retention (oedema)

Fluid retention (oedema) occurs when fluid isn't removed from the body tissues, including the skin. Causes include the body's reaction to hot weather, a high salt intake, and the hormones associated.

Cancer and malnutrition

It is important for the health of people with cancer to eat well before, during and after cancer treatment.

Lymphatic system

The lymphatic system manages fluid levels in the body, filters out bacteria and houses types of white blood cells.

Cancer - exercise to help you cope

People with cancer should be as physically active as their abilities and condition allow.

Related information on other websites

Cancer Australia.

Lymphoedema Compression Garment Program

Support Groups

Lymphoedema Association of Victoria

Content Partner

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