

# Compression garment selection, fitting and monitoring education resource

## Component 1: Self guided learning package

Version 5.0 June 2014

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For more information contact:

Allied Health Professions,

Office of Queensland, Department of Health,

GPO Box 2368, Fortitude Valley QLD 4006,

tel (+61) 07 3328 9298 email [Allied\\_Health\\_Advisory@health.qld.gov.au](mailto:Allied_Health_Advisory@health.qld.gov.au)

An electronic version of this document is available at

<http://www.health.qld.gov.au/ahwac/docs/self-guided-learn.pdf>

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# 1. Introduction

## 1.1 Background

This education resource has been developed to support the implementation of the Queensland Health guideline:

# QH-HSDGDL-030-1:2013, [Guideline for Compression Garments for Adults with Malignancy Related Lymphoedema: Eligibility, Supply and Costing](#).

In addition the [Queensland Health Lymphoedema Clinical Practice Guideline 2014](#) (CPG) provides practical, evidence based recommendations for the use of compression therapy to treat adult lymphoedema.

## 1.2 Aims

The target population for this resource is therapists working in urban, rural and/or remote areas who have a generalist case load which includes patients/consumers with stable malignancy-related lymphoedema.

This compression garment education resource aims to:

- Provide sustainable, accessible, capability-based education for generalist Occupational Therapists and Physiotherapists implementing the Guideline for Compression Garments for Adults with Malignancy-related Lymphoedema.
- Consolidate generalist therapist knowledge and skill base in compression garment selection, fitting and monitoring for patients with uncomplicated (established) malignancy-related lymphoedema.
- Increase support of generalist therapists by lymphoedema therapists through a supported practice framework via Telehealth.

## 1.3 Pre-requisites

The following are pre-requisites for the completion of this educational program.

Participants must:

- Have a Bachelor degree in Occupational Therapy or Physiotherapy or equivalent entry level qualification in Occupational Therapy or Physiotherapy.
- Be registered with the Australian Health Practitioners Regulation Agency.
- Have access to an occupational therapist or physiotherapist who has completed lymphoedema training and will act as a mentor or coach.
- Have support from their line manager to:
  - complete the self guided learning package;
  - engage with a mentor or coach for the duration of the program;
  - provide compression garments to patient/consumers with malignancy-related lymphoedema as part of usual service delivery.

## 2. Education resource components

This education resource is comprised of 2 main components:

- Component 1: Self guided learning package
- Component 2: Supported Practice Period

### 2.1 Component 1

Component 1 is a self guided learning package that is completed independently and provides background knowledge about key topics related to lymphoedema and compression garments. This component consists of:

- A self guided learning package with web links to learning resources. The internet is required to access some learning resources and some web links may need a Queensland Health computer to access the resource.
- Accompanying PowerPoint slideshows and audio recordings to be used with the package.
- A work book for recording reflections and responses to activities in the education package. This workbook will also be used to guide and inform the coaching component of the education resource.

### 2.2 Component 2

Component 2 consists of a period of supported practice where the therapist undertaking the education package enters into a coaching relationship with a lymphoedema therapist. Interactions between the therapists can take place via Telehealth or face to face. This component has a two tiered approach and consists of:

- A review of the components of the self-paced workbook including the identification of any areas that require clarification or elaboration.
- A process of practice, demonstration and evaluation of clinical skills via telehealth or face to face coaching sessions. These will involve:
  - Demonstration of practical skills (e.g. measuring, fitting) with a volunteer prior to a patient/consumer consultation.
  - Coaching support provided to the generalist therapist by a lymphoedema therapist during a patient/consumer consultation. Three supported sessions with patients/consumers are recommended depending on variation and complexity of patient/consumer presentation.
  - Ongoing coaching support and review of patients/consumers where there are concerns or variations in patient /consumer presentation.

Further details of the coaching component can be found in the accompanying Supported Practice Period Framework.

### 3. Education resource scope

This education package has been developed as part of a response to address service gaps in the provision of compression garments to people with stable (uncomplicated malignancy related) lymphoedema who live in urban, rural and remote locations.

The completion of a recognised lymphoedema training course is a basic requirement for health professionals providing the full scope of lymphoedema assessment and treatment. Lymphoedema training provides health professionals with knowledge about the pathophysiology of lymphatic function and disorders, and training in manual techniques and compression bandaging principles, along with other components of intensive treatment.

While best practice guidelines from the UK-based British Lymphology Association<sup>1</sup>, the US-based National Lymphoedema Network<sup>2</sup>; the Australian-based Australasian Lymphology Association<sup>3</sup> and the [Queensland Health Lymphoedema Clinical Practice Guideline 2014](#) support the need for specialist lymphoedema training, this model of service delivery is not easily maintained in urban, rural and remote areas.

The Compression Garment Selection, Fitting and Monitoring Redesign Trial is designed to promote a different model of care to patient/consumers with malignancy related lymphoedema who live in urban, rural and remote locations. The trial provides scope for generalist therapists in urban, rural and remote areas to offer patients/consumers with stable lymphoedema compression garment, selection, fitting and monitoring services.

This education package is designed to consolidate generalist knowledge and skills in this one aspect of lymphoedema management. Australian and International Guidelines recommend that other aspects of lymphoedema management such as manual lymphatic drainage, providing advice on self lymphatic drainage and providing lymphoedema compression bandaging should only be carried out by therapists with lymphoedema training.<sup>1,2,3</sup>

Information about recognised Australian-based training courses is available from the [Australasian Lymphology Association](#).

Completion of this educational package will enable generalist allied health professionals, with the support where needed from lymphoedema trained therapists to:

Provide information about lymphoedema, including risk reduction guidelines

Educate patients/consumers in aspects of self management including advice on positioning, elevation and movement and care of the skin including prevention and management of cellulitis

Select, fit and monitor compression garments for stable lymphoedema

Direct patient/consumers to the most appropriate lymphoedema services (with lymphoedema-trained health professionals) when required.

## 4. Component 1: Self guided learning package

The self guided learning package has been developed to provide foundation theoretical knowledge about lymphoedema and its assessment and treatment. The self guided learning package is presented as four discrete modules:

- Module 1: Overview of the lymphatic system and lymphoedema
- Module 2: Assessment of lymphoedema
- Module 3: Management of lymphoedema
- Module 4: Compression therapy and garments

Each module has:

- Readings and other resources, often with links embedded in the text.
- PowerPoint and supporting audio.
- Workbook activities in the accompanying wordbook.

These resources will assist you to get the most value from each module.

## 5. Instructions for use of the self guided learning package

The self guided learning package is designed to be used in the following way:

1. Work through each module with the accompanying PowerPoint and audio presentation.
2. Complete the workbook activities for the module.

The following symbols are used throughout the modules:



This symbol indicates there is a writing activity to complete.



This symbol indicates points where you should listen to the audio and go through the PowerPoint presentation.



This symbol indicates there is information for you to watch or read (usually from the internet).

Each module will require approximately 1.5 hours to complete.



## 6. Using mind-mapping as a learning tool

Throughout this learning package you will be encouraged to use mind maps for your written activities. This will assist to maximise your learning as:

*‘The most important single factor influencing learning is what the learner already knows – ascertain this and teach him accordingly’ (David Ausbel).*

Meaningful learning is about assisting individuals to relate new knowledge to relevant existing knowledge they already have. Mind maps are an attempt to ascertain what the learner knows and bring this to the forefront. New knowledge is then provided and organisation of new knowledge into the learners existing knowledge is facilitated. The mind map provides a visual road map of how each person organizes their knowledge.

The following process is recommended if you wish to use mind-mapping to assist your learning:

1. At the start of each module take an initial brief look at the presentation, readings and/or resources.

Do not review the material in depth, and then put it away.

Now start your mapping task.

For each topic:

- Brainstorm anything you know about the topic. Write these down without worrying about order or category.
  - Once you have exhausted the information decide which items can be grouped together in some logical manner. You may like to place them in categories and number them category 1, category 2 etc.
  - Next label these groups with a heading which describes the category and transfer them to a new page with groupings according to their relationship to each other. In the context of lymphoedema they may be aetiology, signs and symptoms etc.
  - If a clear hierarchy exists then place groupings from top to bottom.
  - Finish by drawing arrows between the groups to depict the relationship between the groupings – they may be uni-directional or bi-directional arrows.
2. Once you have completed this task it is time to listen to the audio with the PowerPoint and read the readings.
  3. After you have finished the module construct a second mind map which illustrates the integration of the new information into your existing knowledge on that topic.

Mind maps have been around in many forms from the 1970s. Early exponents were *Tony Buzan* and *Edward de Bono* and we acknowledge their work.

*There is free software available at <http://mindmapfree.com/> to assist you in developing your mind map. More information and an example are provided in the Workbook.*

## 7. Module 1: Overview of the lymphatic system and lymphoedema

### 7.1 Intended learning outcomes

At the end of this module, you will be able to:

- describe the basic anatomy and physiology of the lymphatic system
- identify risk factors for malignancy related lymphoedema and the grade of lymphoedema
- identify the functional and psychosocial impact of malignancy related lymphoedema.

### 7.2 Capabilities

The table below identifies the knowledge (Knowing WHAT), skills (Knowing HOW) and therapeutic approach that this module addresses.

Knowing WHAT	Knowing HOW	Therapeutic APPROACH
Basic workings of the lymphatic system	Identify signs of lymphoedema	Provide clear explanations to patient/consumer to assist their understanding of lymphoedema
Risk factors for malignancy related lymphoedema	Apply lymphoedema grading system	
Functional and psychosocial impact of having lymphoedema		

This module is estimated to take approximately 1.5 hours to complete.

## 8. Self guided learning

### 8.1 Mind mapping- What I know about lymphoedema



**Activity 1:** Draw a mind map to illustrate what you know about the lymphatic system and lymphoedema.

Mind mapping (or concept mapping) involves writing down a central idea and thinking up new and related ideas which radiate out from the centre. Mapping information in this way helps to identify key ideas and connections between these ideas. Mind maps are tools to assist in understanding and remembering information. Click on this link to find out further information about how to do a Mind Map:

[Mind Mapping Resource Link](#)

Further information on Mind Maps can be found in your workbook.

#### 8.1.1 The lymphatic system - review



Listen to the accompanying audio presentation for slides 1–18 of the PowerPoint presentation.



Click here: [Oxford Textbook of Medicine](#) and accept the conditions  
Type in the search bar: Chronic peripheral oedema and lymphoedema.

Read the following sections:

- Essentials
- Introduction
- Pathophysiology
- Aetiology



**Activity 2:** Following your review of the above information, write down a summary of key information that you have identified about the lymphatic system. You can use your mind map to do this.

## 8.1.2 What is lymphoedema and how does it develop?

Damage to or impairment of the lymphatic system can result in the development of lymphoedema.



Listen to the accompanying audio presentation for slides 19-end of the PowerPoint presentation.



Click here and watch: Ups and Downs: Life with lymphoedema [\(Link TBA\)](#)

Watch: 0-5.45minutes:



Click here and read: [What is lymphoedema?](#) The Australasian Lymphology Association.



Activity 3: Consider the following scenario.

You are a generalist therapist working in a small rural town. The local CWA are going to have a 'Biggest Morning Tea' event and have invited you to come and speak. They have asked that you specifically talk about what lymphoedema is, what causes it and how people can tell if they are developing lymphoedema.

Plan the main points of your talk either using a mind map or by writing a summary of the main points you will include in your talk.

### 8.1.3 Stages of lymphoedema

The progression of lymphoedema is commonly described using a staging system as shown in Table 1.1. Individual severity determinations may also be affected by factors such as<sup>4</sup>:

- extensiveness
- presence of cellulitis attacks
- inflammation
- quality of life issues (social, emotional, physical disabilities, etc.)

**Table 1 Staging of lymphoedema<sup>4</sup>**

Stage	Description
Stage 0: Latent or sub-clinical condition	Swelling is not yet evident despite impaired lymph transport, subtle changes in tissue fluid/composition, and changes in subjective symptoms. This stage may be present for months or years before overt lymphoedema occurs
Stage I: Early accumulation	Early accumulation of fluid relatively high in protein content which subsides with limb elevation. Pitting may occur. An increase in various proliferating cells may also be seen.
Stage II	Limb elevation alone rarely reduces tissue swelling and pitting is present.  Late Stage II: the tissue in the limb may or may not be pitting as excess fat and fibrosis take over.
Stage III	Encompasses lymphostatic elephantiasis where pitting can be absent and trophic skin changes such as acanthosis, further deposition of fat and fibrosis, and warty overgrowths have developed.
Within each Stage, a limited but nonetheless functional severity assessment has utilized simple volume differences assessed as minimal (<20% increase in limb volume), moderate (20-40% increase), or severe (>40% increase).	

### 8.1.4 Psychosocial impact of lymphoedema

The presence of lymphoedema is associated with psychosocial challenges. Negative perceptions related to body image, appearance, sexuality, and social barriers have been reported.<sup>5</sup> Previous research has consistently described a negative psychological impact (negative self-identity, emotional disturbance, and psychological distress) and negative social impact (marginalization, financial burden, perceived diminished sexuality, social isolation, perceived social abandonment, public insensitivity, and non-supportive work environment) for people with lymphoedema.<sup>5</sup> Health Professionals providing long term interventions such as compression garment provision can play an important role in the provision of supportive psychosocial care for this population.



Click on the following link and read the section on 'Everyday Life' (pages 24-33).

Link: [Lymphoedema Stories: The Untold Truth](#)

(NOTE: you can make the print bigger using the sliding button on the top of the screen.)



Activity 4: From your reading, what are some of the main issues that people with lymphoedema have to deal with on a day to day basis?

In your own practice, what have patients/consumers told you about living with lymphoedema?

### 8.1.5 Summary

This module has reviewed the lymphatic system and the risk factors, types and progression of lymphoedema as well as the functional and psychosocial impacts of lymphoedema.



To consolidate your learning you should read the first chapter of the [Queensland Health Lymphoedema Clinical Practice Guideline 2014](#).



Activity 5: The following activities will assist you to consolidate your knowledge.

Draw a mind map for each of the following questions:

- What is the lymphatic system and how does it work?
- What are the types, risk factors and stages of lymphoedema?
- How does having lymphoedema impact on everyday life?

## 9. Module 2: Assessment of lymphoedema

### 9.1 Intended learning outcomes

At the end of this module, you will be able to:

- Describe the components of a comprehensive assessment of a client with lymphoedema.
- Outline the roles of the generalist and lymphoedema therapists within the assessment process.
- Identify signs of the clinical presentation of lymphoedema.
- Classify the clinical presentation of lymphoedema into stages/grades.
- Measure and monitor stable malignancy related lymphoedema.

### 9.2 Capabilities

The table below identifies the knowledge (Knowing WHAT), skills (Knowing HOW) and therapeutic approach that this module addresses.

Knowing WHAT	Knowing HOW	Therapeutic APPROACH
Causes of and contributors to malignancy-related lymphoedema Knowledge of differential diagnosis including metastasis Contraindications for compression	Accurately conduct circumferential measurements and pitting test Complete a thorough and accurate lymphoedema assessment Evaluate history to determine suitability for compression Identify a suitable referral pathway to tertiary services	Provide a thorough assessment of the status of the patient/consumer with stable lymphoedema. Identify when the patient/consumer requires intervention from a lymphoedema therapist.

## 9.3 Self guided learning



Activity 1: Draw a mind map to illustrate what you know about diagnosis, assessment and monitoring of lymphoedema.

### 9.3.1 Diagnosis of lymphoedema

This education package has been developed to support the implementation of the Guideline for Compression Garments for Adults with Malignancy Related Lymphoedema: Eligibility, Supply and Costing. Following the completion of the education package and with appropriate support from a lymphoedema therapist, it is anticipated that a generalist therapist will provide support to patients/consumers with stable malignancy related lymphoedema. Oedema is a symptom of many conditions including lymphoedema. It is important to be aware of these other conditions as their presence may alter the required treatment and/or the expected lymphoedema treatment outcomes.



Listen to the accompanying audio presentation for Module 2 slides 1–8 of the PowerPoint presentation.



Click here and read: [How to recognise lymphoedema](#) The Lymphoedema Support Network.

Further reading on differential diagnosis of Lymphoedema can be found at the following link: [Differential diagnosis](#) BMJ Best Practice Lymphoedema

### 9.3.2 Assessing and monitoring stable lymphoedema



Activity 2: Consider the following scenario:

You have been referred a patient/consumer who has been in a large metropolitan health service for cancer treatment. She has returned to her home town in a rural area and has stabilised lymphoedema of her (L) arm.

- In your workbook, outline the main topics/areas that you will cover in your initial appointment with her. You can use a mind map for this activity.

Now look at the Lymphoedema Assessment form found in Appendix 1. What are the similarities and differences between this form and your assessment plan? Are there areas not included on the form that you will include in your assessment? Are there any areas that you have missed that are included in the form?



Read the following information and listen to the accompanying audio presentation for Module 2 slides 9-19 of the PowerPoint presentation.



## Palpation

The texture of lymphoedema can be examined using palpation. Textures are described using the staging system in Table 1.1 (e.g. soft, pitting, fatty, fibrotic). Pitting indicates the presence of excess interstitial fluid. A pitting test is conducted by pressing firmly on the area being examined with a finger or thumb for a count of at least 10 seconds.<sup>6,7</sup> If an indentation remains when pressure is removed, then pitting is present. The depth of the indentation reflects the severity of the lymphoedema. Pitting results may be described using the measurement of the depth of any resulting indentation, the duration until the indentation resolves or the time taken to create an indentation.

Results of a pitting assessment can be documented on the lymphoedema assessment form (see Appendix 1).

- Palpation is also used to examine a patient/consumer for signs of circulatory impairment:
  - Skin temperature changes.<sup>8</sup>

Cold indicates limited perfusion

- Warm temperature indicates well/over perfused tissue.
- Capillary refill limitations
  - Push on the tip of the great toe or nail bed until blanching occurs
  - Release and note the amount of time for red colour to return
  - >2-3 seconds is considered indicative of arterial insufficiency



Read the following information and listen to the accompanying audio presentation for Module 2 slides 20-26 of the PowerPoint presentation.

## Limb volume or circumferential measurements

Limb volume and circumferential measurements are considered to be de facto gold standard measurements for lymphoedema. Limb volume and circumference are interchangeable and therefore lymphoedema can be reliably assessed using either measure.<sup>9</sup> Circumferential measurements are the most commonly used lymphoedema assessment performed by generalist Health Professionals in Queensland Health.

Circumferential measurements should be performed at each review to monitor a patient's progress over time. Measurements can be compared to previous measurements and to the unaffected contralateral limb (in the case of unilateral lymphoedema). Weight should be recorded in combination with circumferential measurements as weight change will affect limb size.



Click here: [Measuring guidelines](#) Australasian Lymphology Association

Click here: [Measuring standards](#) Australasian Lymphology Association



**Activity 3:** With a colleague, perform circumferential measurements as described in the ALA Measuring standards document. Use the circumferential measurement form in Appendix 2 to record your measurements.

Repeat the set of measurements three times to determine your accuracy.

### 9.3.3 When to refer to a lymphoedema therapist?

Generalist therapists that have completed or are completing the Compression Garment Prescription Fitting and Monitoring program will be involved in the provision of compression garments for people with stable lymphoedema. Stable lymphoedema is uncomplicated malignancy related lymphoedema with swelling which is:

*“... affecting a limb(s) which has been present for over 3 months and is not relieved by bed rest or elevation. Subcutaneous tissues are soft and normal shape of the limb preserved. Swelling does not affect the head and neck, trunk or genital regions of the body.”<sup>1:8</sup>*

Stable lymphoedema has the following characteristics<sup>1</sup>:

- The lymphoedema is confined to one or two limbs and does not extend to the proximal root of the limb
- The subcutaneous tissue is predominantly soft and/or pits on pressure in a small and localised area
- The affected limb has maintained a normal shape
- The skin on the affected limb is healthy and intact
- There is no arterial insufficiency
- There is no known malignancy in the quadrant of the trunk which is adjacent to the affected limb

Renal, cardiac, liver and thyroid problems have been excluded as contributing factors or if present, these conditions are well controlled

If your assessment of a patient/consumer identifies they do not meet the above criteria, referral to or consultation with a lymphoedema therapist is indicated. The following resources will assist you to identify an appropriate practitioner.



Click here: [National Lymphoedema Practitioners Register](#) Australasian Lymphology Association



Click here: [Treatment Facilities and Resources Directory](#) Lymphoedema Association of Queensland



**Activity 4:** Plan the referral pathway that you will use if you need to refer onto a lymphoedema therapist. Consider the following aspects:

- Who are the lymphoedema therapists in your local area?
- Where is your closest tertiary lymphoedema centre?
- How you will make the referral (what format will you use)?
- What information will be required for the referral?
- Are there any specific forms or requirements at a local level?



Can you develop a flow chart that reflects this in your workbook?

## 10. Case study 1: Henry

Henry is a 72 y.o. male, who lives at home in a small rural town. He lives alone. He was admitted to the local hospital with lower limb recurrent cellulitis.

Past Medical Hx:

- hypertension, osteoporosis, type II DM, hypercholesterolaemia
- Past Surgical Hx:
  - # L) NOF 2007, melanoma left leg 2008, inguinal lymph node dissection 2009, CABG x 3 2005, MVA 2001 with # R) tibia

Medications: Lipitor, Cardaprin, Diuretics

He presents with thickened but low volume left leg swelling. He has not had any previous odemea management.

Consider:

- What risk factors does Henry have for the development of oedema?
- What risk factors does Henry have for the development of lymphoedema?
- What steps would you take to determine the cause of Henrys' oedema? Include the resources you might need and the members of the health team you would involve.

Write you answers in your workbook.

# 11. Module 3: Management of lymphoedema

## 11.1 Intended learning outcomes

At the end of this module, you will be able to:

- Describe the full scope of malignancy related lymphoedema management
- Outline the scope of practice for generalist therapists in the management of malignancy related lymphoedema
- Identify contraindications and precautions to compression therapy
- Develop appropriate self-management plans with clients with malignancy related lymphoedema, including the use of compression garments, risk reduction strategies, skin care and exercise advice.

## 11.2 Capabilities

The table below identifies the knowledge (Knowing WHAT), skills (Knowing HOW) and therapeutic approach that this module addresses.

Knowing WHAT	Knowing HOW	Therapeutic APPROACH
Overview of the full scope of management of malignancy related lymphoedema.  Role of generalist therapists in management of malignancy related lymphoedema.  Contraindications and precautions to compression therapy.	Determine the appropriateness of compression therapy for an individual patient/consumer.  Provide individualised information relating to use of compression garments, risk reduction strategies, skin care and exercise advice.	Partner with patients/ consumers in the development and monitoring of individualised self - management plans.

This module is estimated to take approximately 1.5 hours to complete.

## 11.3 Self guided learning



Activity 1: Draw a mind map to illustrate what you know about the management of lymphoedema.



Read the following information and listen to the accompanying audio presentation for Module 3 slides 1-8 of the PowerPoint presentation.

### 11.3.1 What is 'full scope lymphoedema management'?

There are many treatments provided for lymphoedema. Full scope of lymphoedema treatment is taught via lymphoedema training courses and may involve the following treatment modalities<sup>3</sup>:

- Manual lymphatic drainage
- Lymphoedema compression bandaging
- Active exercises including breathing exercises
- Skin care
- Laser therapy
- Hydrotherapy
- Drug therapy
- Surgical treatment
- Intermittent pneumatic compression pumps
- Hyperbaric treatment
- Lymphoedema taping
- Lymphoedema compression garment therapy

A broad understanding of the full scope of lymphoedema treatment is necessary for health professionals to understand the treatment trajectory for their patients.



Click here and read: [Lymphoedema Management](#) Australasian Lymphology Association

### 11.3.2 Facilitating long-term management of stable lymphoedema

Generalist health professionals perform an important role in supporting people in the long term management of lymphoedema. A key role they play is in supporting people with stable lymphoedema in the continued self management of their condition. Aspects of this role can include:

- Providing and monitoring compression garments
- Providing information about lymphoedema risk and exacerbation
- Providing education about skin care
- Providing education about exercise/ movement

Each of these aspects of the generalist role are discussed below.

### 11.3.3 Compression garments: contraindications and cautions

Compression garments are used across the treatment trajectory in lymphoedema.<sup>10</sup> The use of compression garments is one type of compression therapy. Other forms of compression therapy, such as compression bandaging and intermittent pneumatic compression, may be used during intensive stages of management. Compression garments are usually used for long term management once swelling is stabilised.<sup>11</sup> During the long term management phase, patients should be stable with their self-management regime, but will require provision of replacement compression garments every 6-12 months. The long term management phase is the phase targeted by the Compression Garment Selection, Fitting and Monitoring Statewide Service Redesign Trial.

The next module will provide detailed information about the provision of compression garments however it is essential that when undertaking a lymphoedema assessment, the therapist gives consideration to potential contraindications and precautions for compression therapy.



Listen to the accompanying audio presentation for Module 3 slides 9-14 of the PowerPoint presentation.



Click here and read: [Queensland Health Lymphoedema Clinical Practice Guideline.](#)

Read the following sections:

- Section 3.5 Contraindications
- Section 3.6 Precautions
- Section 3.8 Compression garment use in lymphoedema treatment



Click here and read: [Oxford Textbook of Medicine](#) and accept the conditions

Type in the search bar or click: [Peripheral arterial disease](#)

Read section 16.14.2 Peripheral arterial disease

- Essentials
- Introduction
- Aetiology and epidemiology
- Clinical features of leg ischaemia
- Investigation of the patient with leg ischaemia



Activity 2: Based on the information above, complete the following activity in your workbook.

List the absolute contraindications and precautions for compression and the possible implications of applying compression in the presence of these conditions.

### 11.3.4 Lymphoedema education

The provision of ongoing education about the lymphatic system, lymphoedema and its treatment is an essential role for all health professionals.



Click here: [Lymphoedema- what you need to know](#). Cancer Australia.

This resource is available for multiple cultural groups including Greek, Arabic, Italian, Vietnamese, Chinese, Aboriginal and Torres Strait Islanders.

### 11.3.5 Risk reduction for lymphoedema exacerbation

Those at risk of lymphoedema and those who have developed lymphoedema, are advised to reduce the demand on their lymphatic system. Increase load on the lymphatic system may overwhelm its capacity and result in the development or exacerbation of lymphoedema. A list of risk reduction practices has been developed to guide patients and health professionals in activities to reduce demand on the lymphatic system.

The lymphoedema risk reduction guidelines are based on anatomical and physiological principles but the strength of the research evidence for each recommendation is mixed. Stronger evidence exists for the recommendations about body weight and exercise. Research has shown a consistent association between the development of lymphoedema and increased body weight.<sup>12-18</sup> Many studies have found that exercise does not cause or increase lymphoedema and carefully controlled exercise may improve lymphoedema.<sup>19,20</sup>



Listen to the accompanying audio presentation for Module 3 slides 15-27 of the PowerPoint presentation.



Click here and read: [Risk Reduction Practices](#) and [Risk Reduction Summary](#) from the National Lymphoedema Network



Activity 3: Consider the following scenario and write your response in your workbook.

- You have a long standing client who has stable lymphoedema and wears a compression garment as part of her long term management. She reports she is intending to travel to see family in Canada, and will also be traveling throughout Alaska on a holiday. She has asked you to provide a written list of ways she can best manage her lymphoedema while traveling.
- Compile instructions for her for her holiday to reduce the risk of exacerbating her lymphoedema while she is traveling and away from home.
- How would your advice differ if it was her upper limb rather than her lower limb?

### 11.3.6 Exercise/ Movement

Exercise is not contraindicated in patients with lymphoedema and may improve the condition.<sup>19</sup> Exercise has the dual benefit of increasing lymph flow and maintaining a healthy body weight. Slowly progressive exercise of varying modalities is not associated with the development or exacerbation of lymphoedema and can be safely recommended with proper supervision.<sup>21</sup> Specific lymphoedema exercises may be provided by lymphoedema therapists. All health professionals can encourage people with lymphoedema to participate in general exercise and movement and to monitor the impact of exercise on lymphoedema.



Click here and watch 0–9.27 minutes of: [Exercise and lymphoedema risk reduction](#) Memorial Sloan Kettering Cancer Centre



Activity 4: Write answers to the following questions in your workbook:



- A client with stable lymphoedema wants to start exercising. They ask you for advice about the benefits of exercising and if there are any types of exercise that are better than others for lymphoedema. What advice do you give?
- They ask if they should wear their compression garment when exercising? What advice do you give?

### 11.3.7 Skin care advice

Advice about skin care is important to maintain skin integrity in order to prevent infection. People using compression garments also need education about the interaction between their compression garment regimen and skin care regimen.



Click here and watch the section on Skin Care Treatment Advice (6.54–11.50 minutes): [Lymphoedema Arm](#) Australasian Lymphology Association



Click here and read the section on Skin Care and Cellulitis p24-27: [Practice for the Management of Lymphoedema](#).

Further reading can be found here: [Management of Cellulitis in Lymphoedema](#) Australasian Lymphology Association



Activity 5: Answer the following questions in your workbook:

- What skin care advice would you provide for a person with lymphoedema?
- How would you explain cellulitis to a patient/consumer?
- What signs should you or a patient/consumer look for if they thought they may have cellulitis?
- What advice would you give to that person if you thought they may be developing cellulitis?



Activity 6: Slides 28–35 of the PowerPoint presentation have been reproduced in your workbook. Match the skin features on the slides to the conditions listed.

## 12. Module 4: Compression therapy and garments

### 12.1 Intended learning outcomes

At the end of this module, you will be able to:

- Explain the purpose of compression therapy
- Describe, compare and contrast the range and characteristics of compression garments available
- Apply knowledge to select and order a compression garment for a patient with malignancy-related lymphoedema
- Evaluate the fit of a compression garment
- Decide on appropriate donning and doffing methods and equipment and use of other accessories
- Develop an education and follow up plan for use, care and replacement of compression therapy garments

### 12.2 Capabilities

The table below identifies the knowledge (Knowing WHAT), skills (Knowing HOW) and therapeutic approach that this module addresses.

Knowing WHAT	Knowing HOW	Therapeutic APPROACH
<p>Principles of compression therapy.</p> <p>Range and characteristics of compression garments including: Correct fitting principles and consequences of poor fit; donning/ doffing strategies; garment care and wearing precautions.</p>	<p>Determine appropriate compression garment prescription based on assessment outcomes.</p> <p>Fit and evaluate the compression garment prescribed.</p> <p>Provide a regime for wearing, care instructions and precautions for compression garments.</p> <p>Apply professional reasoning to emergent problems with compression garment wear and identify appropriate resolution strategies.</p>	<p>Using a patient centred approach the clinician will support the individual patient/consumer in the long term self-management of stable lymphoedema.</p>

This module is estimated to take approximately 1.5–2 hours to complete.

## 12.3 Self guided learning



Activity 1: Draw a mind map to illustrate what you know about compression therapy and compression garments.



Read the following information and listen to the accompanying audio presentation for Module 4 slides 1-6 of the PowerPoint presentation.

### 12.3.1 Role of compression garments in lymphoedema

The use of compression garments is a primary treatment for people with lymphoedema.<sup>4</sup>



Click on the link and read the following resource: Australasian Lymphology Association: [The use of compression garments in the management of lymphoedema](#)



Click on the link and read the following sections: [Queensland Health Lymphoedema Clinical Practice Guideline](#)

Sections 3.1-3.6

- Mechanism of action
- Common indications
- Effectiveness
- Contraindications
- Cautions



Activity 2: Write down your response to the following situation in your workbook.

You are seeing a client with stable lymphoedema who is due for replacement of his compression garments. He asks you why they have to be so tight. How would you answer him?




### 12.3.2 Compression garment characteristics

There is a wide range of compression garments available for the treatment of lymphoedema. Health professionals must develop an understanding of the characteristics of different garments to ensure garment selection is individualised for each patient.



Listen to the accompanying audio presentation for slides 7-14 of the PowerPoint presentation.

Methods used to manufacture lymphoedema garments include circular knit, flat knit and cut and sew. The manufacturing method and fabric used will determine the characteristics of the garment produced.

Circular Knit	Flat Knit	Cut and Sew
		

Compression garments can be made with pre-determined sizing as a ready-to-wear garment (RTW) or custom made to the patient's exact measurements. Due to their lower cost and faster delivery times, RTW garments should be investigated as a first option. Where clinical indications or limb size fall outside the RTW range provided, custom made garments may be required.

Compression garments are made with different compression levels as required for the different stages of lymphoedema. Compression levels can be referred to using their Compression Class (Ccl1, 2, 3, 4) and more specifically by the amount of pressure at the ankle (millimetres of mercury - mmHg).

Measurement for compression garments should be undertaken when lymphoedema is at its lowest volume. This may be after a period of intensive treatment, early in the morning or after a period of elevation.



Click on the link and read the following sections of the [Queensland Health Lymphoedema Clinical Practice Guideline](#).

Sections 3.7-3.14: Compression garment characteristics

- Compression garment use in lymphoedema treatment
- Determining compression garment levels for garments
- Garment prescription
- Comorbidities
- Garment measuring
- Garment wearing regimen








Click here and read pages 39-42 of the [Best Practice for Management of Lymphoedema](#) from the International Lymphoedema Framework about compression garment measurements for ready-to-wear or custom made garments







### 12.3.3 Compression garment styles

Multiple compression garment styles are available to suit each patient's lymphoedema presentation. Common styles for lower limb and upper limb garments are described below in Tables 2 and 3.

**Table 2 Lower limb compression garment styles**

Lower Limb Styles	Indications	Image
Toe glove	<ul style="list-style-type: none"> <li>☛ For use when there is consistent or fluctuating lymphoedema in the toes.</li> <li>☛ Might not be tolerated all day, every day</li> </ul>	
Knee High	<ul style="list-style-type: none"> <li>☛ For use with ankle/lower leg lymphoedema</li> </ul>	
Thigh High	<ul style="list-style-type: none"> <li>☛ For use with lymphoedema up to distal/mid thigh</li> <li>☛ This garment is best fit for thighs without excessive proximal adipose tissue</li> </ul>	
Thigh high with waist attachment	<ul style="list-style-type: none"> <li>☛ For use with lymphoedema up to distal/mid thigh – as for thigh high</li> <li>☛ Attachment piece has no compression</li> <li>☛ Waistband provides a gentle/ gradual end-point to the garment for thighs with excessive proximal adipose tissue</li> </ul>	
Waist high	<ul style="list-style-type: none"> <li>☛ For use with bilateral LL lymphoedema including lymphoedema over the hip region</li> <li>☛ Panty section has reduced or no compression</li> </ul>	

**Table 3 Upper limb compression garment styles**

Upper Limb Styles	Indications	Image
Gauntlet	<ul style="list-style-type: none"> <li>☛ For use with very minimal hand lymphoedema</li> <li>☛ Not for use in the presence of finger lymphoedema</li> </ul>	
Glove	<ul style="list-style-type: none"> <li>☛ For use with hand and/or finger lymphoedema</li> </ul>	
Sleeve (wrist - axilla)	<ul style="list-style-type: none"> <li>☛ For use with arm lymphoedema</li> <li>☛ Can be used in isolation or in combination with a hand piece if mild hand swelling is present</li> </ul>	
Sleeve (hand – axilla)	<ul style="list-style-type: none"> <li>☛ Attached hand pieces are used when there is excessive hand lymphoedema present that is obstructed by the layering of a separate sleeve and handpiece</li> <li>☛ These garments can be more challenging to don than separates</li> </ul>	
Sleeve with bra strap attachment	<ul style="list-style-type: none"> <li>☛ Reduces the pressure at the proximal edge of the garment</li> <li>☛ May cause bra strap to slip off</li> <li>☛ No compression in shoulder piece</li> </ul>	
Sleeve with body strap	<ul style="list-style-type: none"> <li>☛ Reduces the pressure at the proximal edge of the garment</li> <li>☛ Strap may be visible under clothing or may rub on chest</li> <li>☛ No compression in shoulder piece</li> </ul>	

### 12.3.4 Garment fixation

Some people have challenges maintaining the position of their compression garment. Fixation options may assist with positioning and include the following:

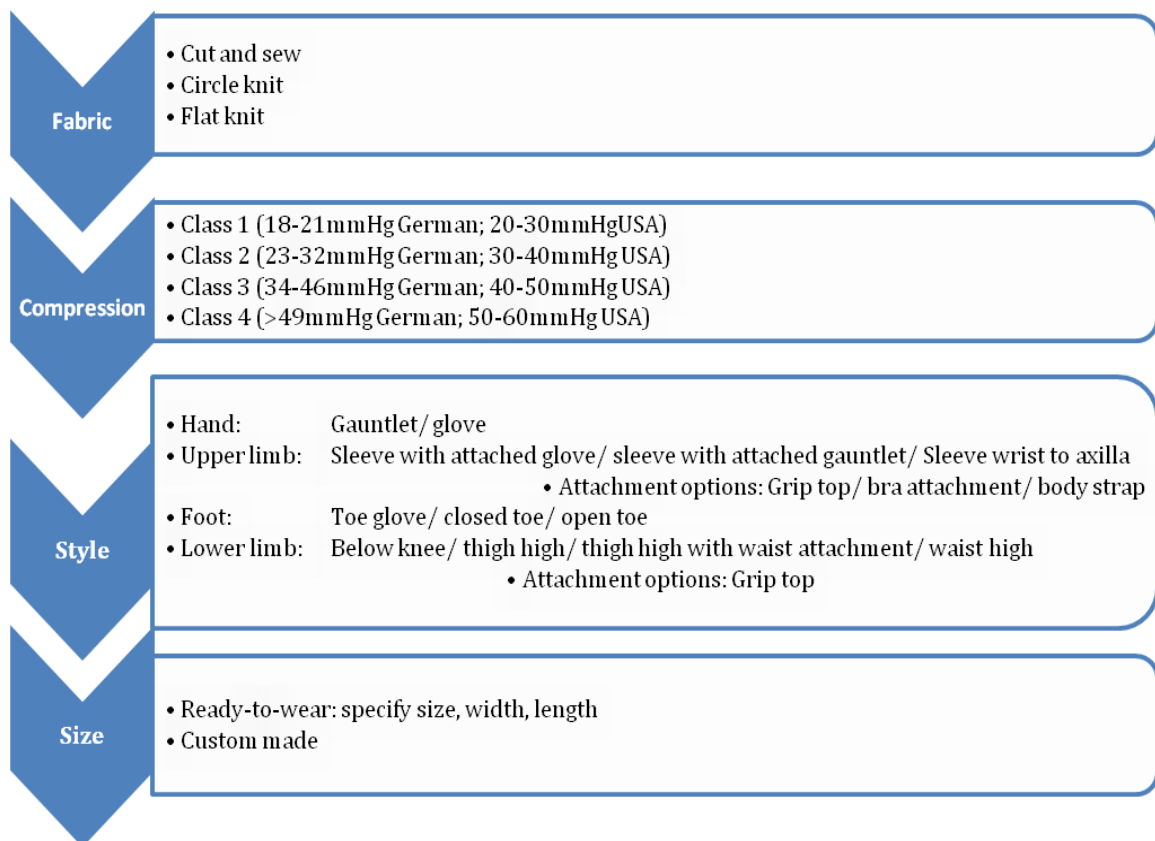
- Attachment pieces (e.g., thigh high with waist attachment)
- Silicone bands at the proximal end of the garment provide a non-slip point to resist garment movement. Silicone irritation can occur, particularly in hot and humid climates due to the interaction of perspiration and silicone. Although it is rare, a more severe silicone allergy may also occur.
- Garment glue is a water-based substance applied to the skin prior to the application of a garment to assist with positioning. Most compression garment manufacturers produce their own garment glue. Jobst It Stays garment glue available via [SOA QH742](#).



### 12.3.5 Choosing a compression garment

There are many factors discussed above to consider when choosing a compression garment for your patient. The decision tree below outlines the key factors to consider.

Figure 4.1 Compression Garment Decision Tree





### 12.3.6 Ordering compression garments

Eligible patients are able to receive Queensland Health funded compression garments under the Queensland Health Guideline, [Guideline for Compression Garments for Adults with Malignancy Related Lymphoedema: Eligibility, Supply and Costing](#).

Queensland Health has a Standing Offer Arrangement (SOA) which guides the purchase of compression garments by the organisation. An SOA is a formal agreement between Queensland Health and suppliers to supply products at an agreed price for an agreed period, as a result of a competitive offer process. The purpose of an SOA is to obtain value for money (most suitable clinical product for the best price). An SOA is,

“...mandatory for use by all Queensland Health facilities under the control of hospital and health services throughout Queensland”<sup>22</sup>

[SOA QH742](#) lists compression garments and related products available for order by Queensland Health, Health professionals. The contact information for each compression garment distributor is located on the second page of the SOA. These suppliers can provide additional information about the garments they distribute. A summary of the compression garments listed on [SOA QH742](#) is provided in Table 3.1



Read: [Standing Offer Arrangement QH742](#). Queensland Health. Contact your Clinical Product Advisory Committee (CPAQ) representative or see the website if you cannot find a suitable compression garment on the SOA or if you wish to lodge a complaint about a product on the SOA or alternatively see the [CPAQ website](#).



**Activity 3:** Your resource kit contains measurement forms and fabric swatches to provide additional information about all garments available on SOA742.

Use the compression garment guides in your resource kit to identify:

- A circular knit class 2 below knee garment from Sigvaris
- A flat knit class 2 below knee garment from Smith and Nephew



**Table 4** Compression garments on [SOA QH742](#)

Supplier	Brand	Country of Manufacture		Product Description
<b>Lower limb garments</b>				
Biomet	Venosan	Switzerland	- Custom - RTW	Venosan 6000 Venosan 5000 Venosan 4000 Venosan 7000
Medical Stockings	Therafirm	USA	- RTW	Therafirm Women Therafirm Men Therafirm Unisex
Morris Medical	Sigvaris	Switzerland	- Custom - RTW	Cotton (CM, CX) Comfort (CF) Magic (MG) Top fine (TF) Traditional (503/4/5)
Orthopaedic Appliances	OFA Bamberg	Germany	- RTW	OFA Bamberg
Prius Healthcare Solutions	Ellipsis	Taiwan	- RTW	Ellipsis Pro Ellipsis Therapy
Reis Orthopaedic and Surgical	Medi	Germany	- Custom - RTW	Duomed Mediven Plus Mediven Forte Mediven Ulcer
Smith and Nephew	Jobskin Jobst Elvarex Jobst	Australia Germany Germany USA	- Custom - RTW	Jobskin Jobst Elvarex Jobst Ulcer care Jobst Ultrasheer Jobst for Men Jobst Relief
<b>Upper limb garments</b>				
Biomet	Venosan	Switzerland	- Custom - RTW	Venosan 4000 Venosan 7000 Venosan 2000
Morris Medical	Sigvaris	Switzerland	- RTW	Advance Traditional
Reis Orthopaedic and Surgical	Medi	Germany	- Custom - RTW	Medi Harmony Mediven Esprit
Smith and Nephew	Jobskin Jobst Elvarex Jobst	Australia Germany USA	- Custom - RTW	Jobskin Jobst Elvarex Jobst Bella lite



**Activity 4:** Write responses to the following questions in your workbook

1. Describe the primary aim of compression garment use for a person with stable lymphoedema.
2. During which phase of lymphoedema management are compression garments most commonly used as the primary treatment modality?
3. Under what circumstances is it appropriate to use compression garments during the initial management phase?
4. Describe the characteristics of a limb suitable for fitting with a compression garment.
5. When is the best time to measure for a compression garment in terms of lymphoedema volume, time of day and stability of lymphoedema?
6. When considering if a person will successfully use a prescribed compression garment what aspects do you need to consider?
7. Do all class 2 compression garments have the same compression value (mmHg)? Why/ why not?
8. Compare the recommended levels of compression for upper and lower limbs. What differences do you see? What are the reasons for different levels of compression between upper and lower limbs?
9. Populate the table in your work book with the appropriate manufacturing technique. When complete, each column in the table should have cut and sew, circle knit and flat knit listed.

### 12.3.7 Fitting a compression garment

Compression garments should ideally be fitted when lymphoedema volume is similar to the volume at the time of compression garment selection. All new compression garments should be examined for their fit on the patient.



Listen to the accompanying audio presentation for slides 15-37 of the PowerPoint presentation.



Click here and read: [The Role of Hosiery in Lower Limb Lymphoedema](#) p19.

- Fitting and Evaluation
- Problem solving



Click here and read: [Best Practice for Management of Lymphoedema](#). International Lymphoedema Framework p43-46.



Familiarise yourself with the Lymphoedema compression garment provision record form (Appendix 3).

### 12.3.8 Wearing regimen

People with lymphoedema most commonly wear garments during the day. Garments are most commonly applied after waking and removed just before sleep. Patients should be prescribed an individually designed wearing regimen depending on their clinical needs.



Click here and read [Queensland Health Lymphoedema Clinical Practice Guideline](#). Section 3.14.1 p40: Application/Frequency

### 12.3.9 Care instructions

Regular laundering of garments is essential for two reasons:

1. Hygiene of the compression garment – compression garments will become soiled during wear. Irritants may build up in the garment causing damage to skin (e.g. sweat under a silicon band).
2. Re-tensioning of the compression garment – compression garments stretch with wear, particular at joint articulation points. Laundering garments will re-tension the fabric and remove the creases that have developed. This will assist to maintain the fit and sizing of the garment.

Patients should be educated about the above rationale to encourage regular laundering.

Each manufacturer has slightly different instructions about the appropriate care of their garments.



Click here and read [Queensland Health Lymphoedema Clinical Practice Guideline](#). Section 3.14.4 p42: Care of Garments.

A manufacturer care instruction card is included with all garments and should be provided to patients.



Familiarise yourself with the Lymphoedema compression garment patient information handout (Appendix 4).

### 12.3.10 Application and removal of garments (donning/doffing)

The patient's ability to don (apply) or doff (remove) a garment is critical to the safety and success of the garment. Consequences of improper garment donning/doffing can include skin damage or impaired circulation, and even damage to the garment. A patients' application/removal technique should be observed and assessed before a garment is provided. The don/doff capacity of a patient should also be monitored over time.<sup>11</sup>




Many people will require training, modifications or assistive devices to successfully manage their garments. The provision of an assistive device does incur a cost however this device may be the difference between the success and failure of a garment. It may also be the difference between the requirement for a custom made or ready-to-wear garment.





Local procedures should be investigated for funding of assistive devices. The Queensland Health [SOA QH742](#) contains information about assistive devices for donning/doffing of garments. A summary of these assistive devices is listed in Table 5



Donning and doffing aids available on [SOA QH742](#). Information is available via QHEPS. All supplier contact information is located on the second page of the SOA.

**Table 5** Compression garment accessories on [SOA QH742](#)

	Product description	Brand	Supplier	
Donning devices	Easy slide	Arion	Morris Medical	
	Export Butler	Medi	Reis	
	Easy As applicator	Easy As	Sutherland Medical	
	Stocking frame applicator	Venosan	Biomet	

				
Donning gloves	Therafirm	Medical Stockings		
Rubber gloves	Sigvaris	Morris Medical		
Doffing devices	Butler off	Medi	Reis	

### 12.3.11 Patient education

Patients/consumers require written and verbal education about all of the above compression garment instructions. This is particularly important if patients are new to the use of compression garments.

Patients/consumers should be advised to monitor their swelling and their skin under the compression garment. They should be provided with contact details for their therapist to report any significant changes in swelling or skin condition.



Familiarise yourself with the Lymphoedema compression garment patient information handout (Appendix 4).

### 12.3.12 Garment evaluation

Although compression garments are effective, patient compliance is often poor because garments may be uncomfortable and cause social morbidity.<sup>10</sup> Due to potential changes in a patient's condition or circumstances, garments require regular re-evaluation. Each garment evaluation should examine the following factors at a minimum:

- Does the compression garment maintain the lymphoedema when worn?
- The primary indicator of effective compression is the maintenance of lymphoedema reduction/stabilisation.
  - Effective compression = stable lymphoedema volume and indicates the garment is appropriate for the patient

- If the volume of lymphoedema is unstable troubleshooting is required. The garment selection should be reviewed to consider whether the fabric, level of compression, style and size require modification.
  - Has the garment caused any skin damage/irritation?
  - Has the patient been concordant with the wearing regimen and garment care instructions?
  - Does the patient have any concerns about their garment wear, donning or doffing?
- Have they experienced any lifestyle or psychosocial issues associated with wearing the compression garment?



Familiarise yourself with the Compression Garment Evaluation Form (Appendix 5).

### 12.3.13 Review schedules

Patients should be reviewed four to six weeks after initial fitting of the compression garment and then after three to six months if the response is satisfactory.<sup>11</sup> All patients should be provided with contact details for the prescribing therapist to facilitate contact if problems arise with the fit or management of their compression garment between appointments.

The need for replacement garments should be reviewed every three to six months, or when the garments start to lose their elasticity.<sup>11</sup> The patient should be reassessed at each garment renewal point.<sup>11</sup>

Garment replacement rates will vary between individuals. People who are hard wearing with their garments may require replacement more frequently than others. For example, people who are very active, obese, or are wearing garments in a humid environment. Garments which are worn infrequently also have a limited lifespan. The common shelf-life for a garment is three years. The shelf life time is indicated on the compression garment packaging.



Click here and read the [Queensland Health Lymphoedema Clinical Practice Guideline](#) Section 3.14.5 p42: Garment replacement



Activity 5: Write responses to the following questions in your workbook

- You have placed an order for a compression garment and the patient/consumer asks you to post it out to them when it arrives. What response do you give to their request?
- A patient/consumer asks why it is necessary to wash the garments so regularly. What is your response?
- You have just provided a compression garment to a new patient/consumer with stable lymphoedema.
  - What are the key points you will take note of at the initial fitting?

- What are the key factors you will go through about the use of their new garment?
- What is your follow up plan (frequency/mode) for this person?
- What key questions are you going to ask them when you contact them for follow up?
- If they are wearing their garment daily, what timeframe should they consider for garment replacement?
- When you see this person again in 6 months, they have had a significant increase in lymphoedema even though they are wearing their garment daily. What strategies/plan of action do you consider?

## 13. Case studies

The following case studies are designed to provide you with the opportunity to apply and consolidate the information presented in this learning package. They can also be used as the basis for discussion/clarification during the Supported Practice meetings.

## 13.1 Case study: Helen

Helen is 55 years old and works part time in a child care centre in a fairly large regional town. She lives with her husband Ben and has 2 adult children, the youngest living at home.

### Medical History

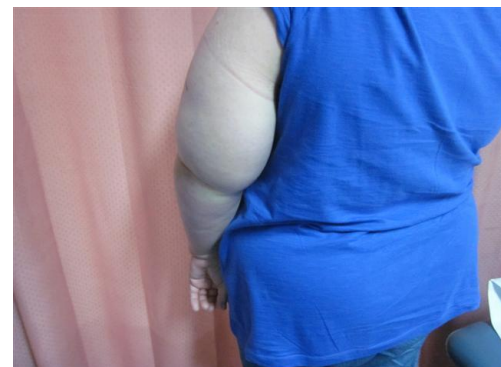
- 5 years ago Helen was diagnosed with breast cancer and underwent axillary lymph node dissection and radiotherapy.
- She developed malignancy related (L) upper limb (non-dominant) lymphoedema which has been stable for the past 3 years.
- She reports that her (L) arm aches and feels heavy most days.

### Assessment information

- Sum of arm circumference (SOAC) – L > R 12.5 cm
- Texture: Non-pitting soft swelling throughout upper arm with small area of pitting proximal forearm
- Lymphoedema stage classification - ISL Stage 2
- BMI 35 (Obesity classification)

### Questions for discussion:

1. What are the characteristics of Stage 2 lymphoedema?
2. What is Helen' self management plan likely to involve?
3. Provide details of the type of compression garment you might consider appropriate for Helen.
  - Type of fabric?
  - Style of garment?
  - Level of compression?





## 13.2 Case study: Joyce

Joyce is a 68 year old widow who lives in a small rural town about a 1 hour drive from a larger regional centre. She has lived in this town for a number of years and has a strong social network. She is a pensioner and has family (a son) who lives close by and helps keep her yard and garden in order. Joyce is able to manage all of her self-care and household tasks. She drives to access her many social events.

### Medical History

- Left dominant and left sided breast cancer with axillary lymph node dissection about 2 years ago.

### Current presentation

- Swelling present past 18 months
- Responds completely to elevation overnight then re-accumulates throughout the day to feel heavy and aching
- Location: hand, forearm
- Texture: Soft, fluctuant, non-pitting oedema
- SOAC L>R 6cm
- ISL stage: 1

### Questions for discussion:

1. What are the characteristics for Stage 1 lymphoedema?
2. Provide details of the type of compression garment you might consider appropriate for Joyce.
  - Type of fabric?
  - Style of garment?
  - Level of compression?
3. What other intervention are you going to provide to Joyce?



## 13.3 Case study: Jack

Jack is a 60 year old man who recently retired having worked for most of his life running his own business. He lives with his wife Rona in a large regional city. They spend much of the winter traveling with their caravan around Australia but usually spend the summer months at home near their family.

### Medical History

- Melanoma left calf with inguinal lymph node dissection and radiotherapy 3 years ago

### Current presentation

- Malignancy-related lymphoedema past 2 years
  - Heavy, aching leg
  - Limits mobility
  - Texture: Mild thickening, adipose proliferation
  - ISL Stage: 2
- Wears compression garment some days but finds it uncomfortable

### Questions for discussion:

1. What are the characteristics for Stage 2 lymphoedema?
2. Provide details of the type of compression garment you might consider appropriate for Jack.
  - Type of fabric?
  - Style of garment?
  - Level of compression?

### GARMENT SELECTION



## 14. Case studies

Which garments would suit these patients?

### 14.1 Case 1

- 50 year old female
- R) WLE and ALND 0/7 +ve and XRT to breast 1 year ago
- Subjective- heaviness in upper arm, ache in forearm
- Objective- mild soft oedema distal upper arm and proximal forearm, No finger/hand oedema
- Left handed
- BMI 24

	Left	Right
MCP	19.0	19.4
Mid P	19.0	19.7
0	15.8	16.0
10	20.4	19.7
20	24.9	25.0
30	25.1	25.5
40	30.1	32.0
SOAC	154.3	157.3



## 14.2 Case 2

- 55 year old female
- BMI 28; Right handed
- Melanoma right upper trapezius
- WLE right arm and ALND 1/32
- XRT 48 Gy 20# to R axilla
- History of bilateral frozen shoulders
- Soft non-pitting oedema right forearm and hand

	Left	Right
MCP	22.9	21.7
Mid P	19.0	18.5
0	19.2	17.6
10	24.3	22.0
20	30.4	28.2
30	37.2	36.5
40	40.1	40.3
SOAC	193.1	184.8
Length	43cm	



### 14.3 Case 3

- Myxoid Sarcoma 2007
- Radiation L) thigh 2008 30# 60Gy
- Occupation: Chef
- Other: on feet long hours, allergic to silicone
- Oedema presentation: oedema calf and ankle when working, nil oedema upper leg

	left	right
MTP	23.2	23.1
TMT	24.5	24.5
DAC	33.0	32.3
10	27.1	25.6
20	28.9	27.5
30	40.9	38.6
40	33.5	33.5
50	36.1	37.5
60	39.5	41.7
70	47.0	47.3
Sum	333.7	331.6




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## 15. Appendices

# Appendix 1 Assessment

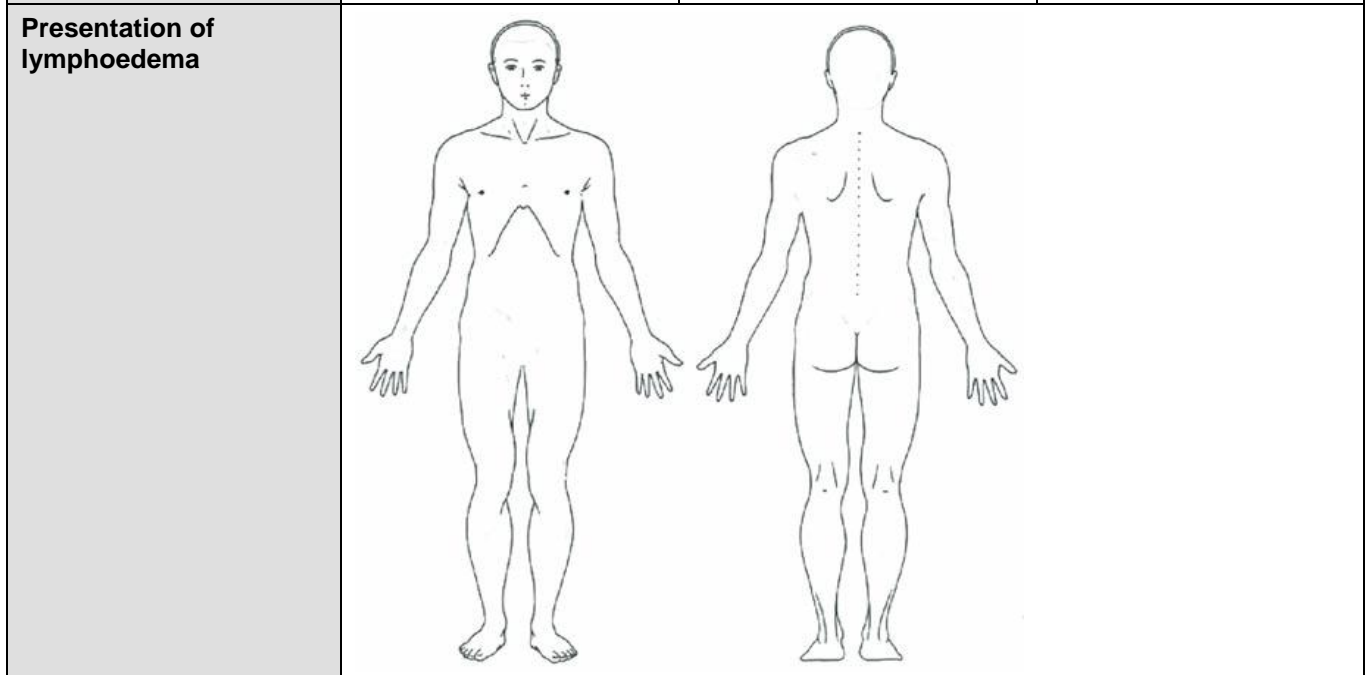
## For Stable Established Malignancy-Related Lymphoedema

 <b>Queensland Government</b> <b>Assessment for Stable Established Malignancy-Related Lymphoedema</b>		(Affix patient identification label here) URN: Family name: Given name(s): Date of birth: Sex: M F
<b>Date of referral:</b>		<b>Date of initial assessment:</b>
<b>Referring Practitioner</b>		<b>General Practitioner</b>
Name:		Name:
Clinic:		Clinic:
Phone:		Phone:
<b>Social History</b>		
Occupation		
Social history/ Family supports		
<b>Medical History</b>		
<b>Cancer Diagnosis</b>		
<input type="radio"/> Surgery	Type:	
	Date:	
	Lymph node dissection	
	Date:	
	Site:	
	Nodes positive/ removed	
	Post operative complications:	
<input type="radio"/> Radiotherapy	Date:	
	Details:	
	Complications:	
<input type="radio"/> Chemotherapy	Date:	
	Details:	
	Complications:	
<input type="radio"/> Other cancer therapy		
<b>Other medical / surgical history</b>		
<b>Subjective lymphoedema report</b>		

<b>Details of onset</b> (date, possible trigger)			
<b>Affected area</b>			
<b>Increasing factors</b>			
<b>Reducing factors</b>			
<b>Lymphoedema</b>	<input type="radio"/> Fluctuating	<input type="radio"/> Persistent	<input type="radio"/> Reduces overnight
<b>Sensations</b>	<input type="radio"/> Tightness <input type="radio"/> Heaviness	<input type="radio"/> Aching <input type="radio"/> P&N/Numb	<input type="radio"/> Stiffness <input type="radio"/> Other
<b>History of infection/ cellulitis</b>			
<b>Pain</b>	<input type="radio"/> Pain (when/ where/ when doing what/ severity - rate out of 10):		
<b>Psychosocial impact</b>			
<b>Functional limitations</b>	<input type="radio"/> ADL/ IADL (including community services): <input type="radio"/> Community/ medical access: <input type="radio"/> Home environment: <input type="radio"/> ROM/ Strength/ sensory limitations:		
<b>Treatment</b>	<b>Previous</b>	<b>Current</b>	
<input type="radio"/> Massage			
<input type="radio"/> Bandaging			
<input type="radio"/> Garments			
<input type="radio"/> Exercise			
<input type="radio"/> Other			
<b>Objective assessment</b>			
<b>Skin issues</b>	<input type="radio"/> Intact <input type="radio"/> Shiny / Taut <input type="radio"/> Blisters/ ulcers	<input type="radio"/> Fragile <input type="radio"/> Discoloured <input type="radio"/> Fungal signs	<input type="radio"/> Dry <input type="radio"/> Lymphorrhoea/ leaking



			<input type="checkbox"/> Wounds <input type="checkbox"/> Scarring
<b>Venous impairment</b>	<input type="checkbox"/> Nil venous signs <input type="checkbox"/> Telangectasia	<input type="checkbox"/> Varicose veins <input type="checkbox"/> Purple colour	<input type="checkbox"/> Haemosiderin staining <input type="checkbox"/> Warm temperature
<b>Arterial impairment</b>	<input type="checkbox"/> Nil identified <input type="checkbox"/> Ischemic rest pain	<input type="checkbox"/> Cold temperature <input type="checkbox"/> Pale colour	<input type="checkbox"/> Claudication with exertion <input type="checkbox"/> ABPI required yes/no/ previous score.....



**Therapist Assessment**

<b>Compression Contraindications</b>	<input type="checkbox"/> severe arterial insufficiency <input type="checkbox"/> uncontrolled heart failure <input type="checkbox"/> severe peripheral neuropathy	
<b>Compression Cautions</b>	<input type="checkbox"/> extreme limb shape distortion <input type="checkbox"/> very deep skin folds <input type="checkbox"/> extensive ulceration. <input type="checkbox"/> an ABPI <0.8 or >1.2 <input type="checkbox"/> high arterial blood pressure <input type="checkbox"/> cardiac arrhythmia or cardiac stenosis <input type="checkbox"/> controlled heart failure <input type="checkbox"/> scleroderma <input type="checkbox"/> chronic polyarthritis	<input type="checkbox"/> complex reg <input type="checkbox"/> malignant ly <input type="checkbox"/> acute cellulit <input type="checkbox"/> diabetes me <input type="checkbox"/> paralysis <input type="checkbox"/> sensory deficit <input type="checkbox"/> fragile or damaged skin <input type="checkbox"/> lymphorrhoea or other weeping skin conditions

Record on diagram: <input type="checkbox"/> Soft oedema <input type="checkbox"/> Firm oedema <input type="checkbox"/> Pitting (10+ seconds) <input type="checkbox"/> Fibrosis <input type="checkbox"/> Adipose
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<b>Lymphoedema staging</b>	<input type="checkbox"/> Stage 0 (latency – no objective signs) <input type="checkbox"/> Stage 1 (reversible with elevation, may be pitting) <input type="checkbox"/> Stage 2 - early (irreversible with elevation, pitting, adipose proliferation) <input type="checkbox"/> Stage 2 - late (pitting may be absent, fibrosis more evident) <input type="checkbox"/> Stage 3 (non-pitting, fibrotic tissue, trophic skin changes)
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<b>Summary of findings</b>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<b>Treatment provided</b>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<b>Treatment plan</b>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>

	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<b>Follow up plan/ next review appointment</b>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<p><b>Therapist's signature:</b> .....</p> <p><b>Therapist's name (print):</b> ..... <b>Date:</b> .....</p>	

## Appendix 2 Circumferential measurement forms

<b>CIRCUMFERENTIAL UPPER LIMB MEASUREMENTS</b>					(Affix identification label here) URN: Family name: Given name(s): Address: Date of birth: <span style="float: right;">Sex: <input type="checkbox"/> M <input type="checkbox"/> F</span>				
<b>Position of patient:</b>	<input type="checkbox"/> Sitting	Variations:	<input type="checkbox"/> Abd. 90	Variations:					
<b>Board levels:</b>	<input type="checkbox"/> Right	Tip 3 <sup>rd</sup> finger:	Mid point MCP:	Mid point MCP radial:		Mid ulna styloid:			
	<input type="checkbox"/> Left	Tip 3 <sup>rd</sup> finger:	Mid point MCP:	Mid point MCP radial:		Mid ulna styloid:			
<b>Dominance:</b>	<input type="checkbox"/> Right <input type="checkbox"/> Left <input type="checkbox"/> Ambidextrous								
<b>DATE</b>									
Weight/ Height/ BMI									
<b>Side</b>									
MCP									
Mid palm									
Ulna styloid									
10cm									
20cm									
30cm									
40cm									
50cm									
60cm									
<b>Sum</b>									
<b>Difference</b>									
<b>Fingers</b>	1.								
	2.								
	3.								
	4.								
	5.								
<b>Therapist and time of day</b>									

## CIRCUMFERENTIAL LOWER LIMB MEASUREMENTS

(Affix identification label here)

URN:

Family name:

Given name(s):

Address:

Date of birth:

Sex:  M  F

<b>Position of patient:</b>	<input type="checkbox"/> Supine			<input type="checkbox"/> Variations:						
<b>Board levels:</b>	Right	MTP med:	lat:	TMT med:	lat:	Mid-point malleoli med:	lat:			
	Left	MTP med:	lat:	TMT med:	lat:	Mid-point malleoli med:	lat:			
<b>Dominance:</b>	<input type="checkbox"/> Right <input type="checkbox"/> Left <input type="checkbox"/> Ambidextrous									
<b>DATE</b>										
Weight/height/BMI										
<b>Side</b>										
MTP										
TMT										
DAC										
10cm										
20cm										
30cm										
40cm										
50cm										
60cm										
70cm										
80cm										
<b>Sum</b>										
<b>Difference</b>										
<b>Toes</b>	1.									
	2.									
	3.									
	4.									
	5.									



Therapist and time of day										
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## Appendix 3 Lymphoedema compression garment provision record

LYMPHOEDEMA Garment Log							(Affix patient identification label here)	
							URN:	
							Family Name:	
							Given Names:	
							Date of Birth:	
							Sex: <input type="checkbox"/> M <input type="checkbox"/> F	
Date	Qty	Manufacturer	Style and details	Size	mmHg	Wearing regimen	Comments/ Issues	Therapist details
								Name:..... Signature: ..... Designation: ..... Date: .....
								Name:..... Signature: ..... Designation: ..... Date: .....
								Name:..... Signature: ..... Designation: ..... Date: .....
								Name:..... Signature: ..... Designation: ..... Date: .....

## **Appendix 4**

# **Lymphoedema compression garment patient information handout**



## 16. Compression garment

### 16.1 Instructions

You have been fitted with a compression garment to assist in managing your lymphoedema. For the best results it is important that you wear your garment as instructed by your therapist.

#### Wearing regime

Your compression garment is to be worn:

.....  
.....  
.....

#### Applying your garment

Your therapist will show you the best way to apply your garment. Remember that your garment is supposed to be firm, so may take a little time to get on and off each day.

Some tips for applying your garment:

- Ensure you skin is free from moisturizer / creams / moisture when you apply the garment
- Use rubber gloves to get a good grip and prevent tearing the garment
- If needed, try a small amount of powder to help the garment slide
- Use an aid to assist (your therapist can show you these)
- If the garment seems too long, do not fold over the top or bottom of the garment. Use your rubber gloves to redistribute the fabric.
- Look for wrinkles in the garment and smooth these out of the garment.

### 16.2 Precautions

Observe your limb for the following symptoms:

- New onset or increase in swelling / puffiness
- Pins and needles
- Cold / blueness
- Rash or skin changes
- Pain or discomfort
- Skin indentations – when you remove your garment it is normal to see indentations in your skin where the garment has been fitting firmly. However, if a mark persists

longer than one hour after removing the garment or if the skin becomes inflamed/broken, this may indicate a problem.

If you observe any of the above symptoms, discontinue use of the garment and contact your lymphoedema therapist as soon as possible

### 16.3 Care instructions

- Wash your garments after each wear. This helps to re-tension the garment to improve its fit
- Handwash your garment or wash in a hosiery bag or pillow case on a gentle cycle using cold or warm water (no hot water).
- Use a mild pure liquid laundry detergent and rinse the garment out well. Do not use powder, wool mix or hand soap.
- Roll or place the garment in between two towels to remove excess water (don't wring)
- Dry the garment flat in the shade. Do NOT tumble dry or dry near direct heat or in the sun

For further information contact:

**Name:** .....

**Location:** .....

**Contact hours:** .....

**Contact details:** .....

## Appendix 5      Garment evaluation form

### Site Location

Therapist Initials:

Date:

**This evaluation should be administered by phone by your therapist one week after fitting of a new garment and at your face to face review.**

1. Since you started wearing your new garment have you experienced any new and/or different pain, sensation or discomfort?

No  Yes – If yes, please describe.....

2. Since you started wearing your new garment have you experienced any reduction in circulation (i.e. fingers/toes change colour, pins and needles/numbness)?

No  Yes – If yes, please describe.....

3. Have you experienced any increase in swelling since you started wearing your new garment?

No  Yes– If yes, please describe.....

If yes, do you think the increase in swelling is related to the new garment?

No  Yes– If yes, please describe.....

4. When you remove your new garment do you have any skin irritation or redness?

No  Yes– If yes, please describe.....

5. Are you able to wear the garment for the prescribed timeframe?

Yes  No– If no, please describe.....

6. How does this garment compare to previous garments you have been prescribed?

- The new garment is much better
- The new garment is a little better
- The new garment is the same as previous garments
- The new garment is a little worse than previous garments
- The new garment is a lot worse than previous garments
- Not applicable this is the first garment prescribed

## Appendix 6

# Self guided learning resource evaluation

Site Location:

Therapist Initials:

Date:

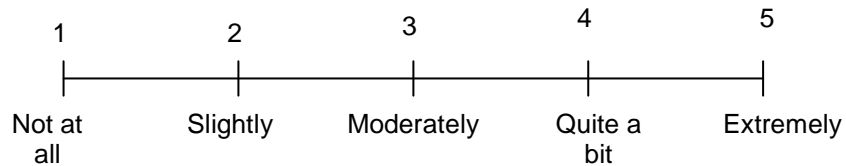
### Feedback and Evaluation form for self guided learning package.

Your feedback is important to inform the future design and implementation of this package.

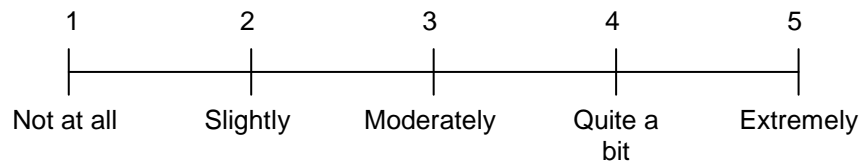
*Please circle the appropriate response and write answers in spaces provided.*

#### Learning Package

1. Overall did you find the content appropriate?



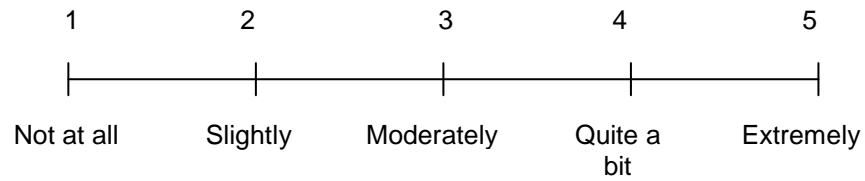
2. Overall did you find the content interesting?



3. Please comment on aspects of the learning package that worked well and facilitated your learning.
4. Please comment on aspects of the learning package that could be improved and did not facilitate your learning.

## Workbook Activities

5. Overall did you find the workbook activities assist your learning and knowledge about prescription, fitting and monitoring of compression garments?



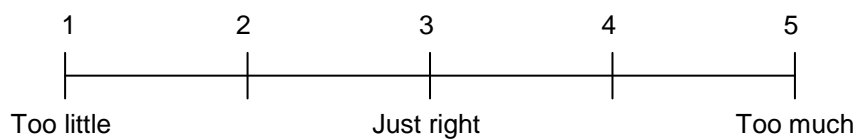
## Content

6. Please rate the modules in terms of their relevance to your work as a generalist therapist.

1= not at all relevant; 2= slightly relevant; 3= moderately relevant; 4 = very relevant; 5 = extremely relevant.

Module	1	2	3	4	5
Module 1: Overview of lymphatic system and lymphoedema					
Module 2: Assessment of lyphoedema					
Module 3: Management of lymphoedema					
Module 4: Compression therapy and garments.					

7. The workload for this learning package was .....

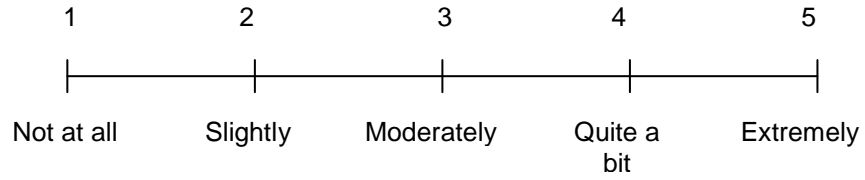


1. Please record the time it took to complete each module

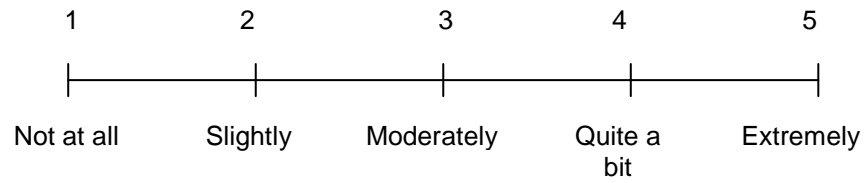
Module 1:  
 Module 2:  
 Module 3:  
 Module 4:

## PowerPoint Presentations

2. Overall did you find the PowerPoint presentations assist your learning and knowledge about prescription, fitting and monitoring of compression garments?



10. Would having an audio of the transcript for the PowerPoint presentation be useful?



Please use the space below to make any other comments about the self guided learning package.

**Thank you for completing this evaluation.**

## 17. Glossary

Assessment for compression garment	<p>A process of subjective and objective information gathering for the purpose of decision-making regarding the sourcing and supply of a compression garment. The minimum components of the assessment for a compression garment are described in Compression Garment, Selection, Fitting and Monitoring Education Resource, Section 1: Assessment Module. It includes history taking with a focus on changes in signs and symptoms since the supply of a previous garment, the presence of contra-indications and precautions, information about the Clinical Prescription of the garment, patient/ consumer reports of tolerance and issues with the current garment, and on objective assessment of the affected limb including circumferential measurements using a standardised measurement process.</p> <p>NOTE: An assessment for a compression garment is not the same as a comprehensive lymphoedema assessment undertaken for the purpose of diagnosis and development of a comprehensive lymphoedema intervention plan. A comprehensive lymphoedema assessment should form part of an Episode of Care for malignancy-related lymphoedema.</p>
Clinical prescription	<p>A written description of specific parameters of compression garment style including class, fit, fabric and size for the purpose of sourcing through a supplier / vendor. Clinical prescriptions for compression garments should be made by appropriately trained and experienced clinicians (including public and private sector practitioners).</p> <p>Clinical prescriptions should be for ready-to-wear garments, unless custom-made garments are clinically indicated.</p> <p>Non QH Hospital health service providers are responsible for provision of current prescriptions.</p>
Compression garment review	<p>To examine a patient's response to the prescribed compression garment following supply. This includes information collection from the patient/consumer (supplemented by information from carers or other members of the multi-disciplinary team). Review differs from "re-assessment" as the purpose is primarily to gain information on the specific response to the intervention (garment supply), rather than more broadly gathering clinical information for the purpose of developing or modifying a diagnosis or care plan as part of a current episode of care.</p>
Education	<p>To provide information that allows a patient/consumer or carer to optimise benefit and minimise risks associated with wearing the supplied compression garment. Education also includes information about garment care and must include information and practice of donning and doffing the garment including the use of relevant aids. Education should be broadly consistent with the <i>Lymphoedema compression garment patient information handout</i> Compression Garment, Selection, Fitting and Monitoring Education Resource, Appendix 4.</p>
Fit / fitting	<p>An Occasion of Service provided for the purpose of supplying and checking the fit of a compression garment.</p>

Generalist therapist	A physiotherapist or occupational therapist who has not completed a formal lymphoedema training program (e.g. Level 1 or 2 course), but has undertaken, or is currently undertaking the Compression Garment, Selection, Fitting and Monitoring Education Resource as part of the Statewide Compression Garment Trial
Lymphoedema therapist	Holders of a Level 1 Lymphoedema Training Certificate accredited by the Australasian Lymphology Association (ALA) and have recency of practice by demonstration of clinical experience in compression garment prescription within the previous two years and have completed 50 points of Continued Professional Development in the previous two years as set out in the ALA Lymphoedema Continuing Professional Development Program and/or have Eligibility for Category 1 registration on the National Lymphoedema Practitioners Register of the Australasian Lymphology Association
Clinician who provides compression garment care	A health practitioner who will either be (1) a Lymphoedema Therapist (private or public), (2) Generalist Therapist with supervision by a Lymphoedema Therapist, consistent with the requirements of the supported practice period outlined in the Compression Garment, Selection, Fitting and Monitoring Education Resource, or (3) a Generalist Therapist who has completed the supervised practice period of the Compression Garment, Selection, Fitting and Monitoring Education Resource.
Malignancy-related lymphoedema	Lymphoedema which develops as a result of damage to the lymphatic system caused by cancer or its treatment.
Self guided learning package	Component 1 of the Compression Garment Selection, Fitting and Monitoring Education Resource. This component is completed independently by the generalist therapist participating in the Compression Garment Selection, Fitting and Monitoring Redesign Trial.
Supported practice component	Component 2 of the Compression Garment Selection, Fitting and Monitoring Education Resource. This component consists of a period of supported practice provided by a lymphoedema therapist to the generalist therapist participating in the Compression Garment Selection, Fitting and Monitoring Redesign Trial. The Support Practice Framework uses a coaching approach and is intended to consolidate the application of learning from the self guided learning package. The Supported Practice Period will primarily be provided via Telehealth.
Source	For patients/consumers meeting the eligibility criteria under Section 3 of the <i>Guideline for Compression Garments for Adults with Malignancy Related Lymphoedema: Eligibility, Supply and Costing</i> this means the health service directly sources (orders) the garment from the supplier for the patient/consumer including meeting the cost of the garment.
Stable lymphoedema	Uncomplicated malignancy-related lymphoedema. Swelling affecting a limb(s) which has been present for over 3 months and is not relieved by bed rest or elevation. Subcutaneous tissues are soft and the normal shape of the limb is preserved. Swelling does not affect the head and neck, trunk or genital regions of the body. <ul style="list-style-type: none"> <li>The lymphoedema is confined to one or two limbs</li> </ul>



	<p>and does not extend to the proximal root of the limb.</p> <ul style="list-style-type: none"> <li>• The subcutaneous tissue is predominantly soft and/or pits on pressure in a small and localised area.</li> <li>• The affected limb has maintained a relatively normal shape.</li> <li>• The skin on the affected limb is healthy and intact.</li> <li>• There is no arterial insufficiency.</li> <li>• There is no known malignancy in the quadrant of the trunk which is adjacent to the affected limb.</li> <li>• Renal, cardiac, liver and thyroid problems have been excluded as contributing factors or if present, these conditions are well controlled.</li> </ul> <p>The following characteristics would indicate that the condition of the patient/consumer is not consistent with stable lymphoedema:</p> <ul style="list-style-type: none"> <li>• New presentation of oedema/lymphoedema, not previously assessed or treated by a lymphoedema therapist</li> <li>• Recurrent cellulitis in the previous twelve months</li> <li>• History of infection of the lymphoedematous limb requiring antibiotics</li> <li>• Fluctuating and increasing circumferential measures</li> <li>• Secondary skin changes and lymphorrhea</li> <li>• Oedema extends to root of limb and affects abdomen or trunk</li> <li>• Other secondary complications e.g. seroma, scarring issues, cording impacting on patient comfort or function</li> </ul>
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