1. Amputee Statistics (source AOPA & Amputees in Motion)

Demographic data

Demographics show amputees represent 1 per 1,000 individuals across Australia, and subsequently there are in excess of 20,000 amputees living in Australia. Annual service provision provides intervals of care for approximately two thirds of the population per annum, with approximately 5,000 new prostheses provided to amputees each year. The service is provided by 125 prosthetists across the nation. 70% of amputees lose their limbs as a result of diabetes and vascular disease. The remaining 30% of amputations are caused by a mix of road accidents, occupational trauma, cancer & neoplastic disease, congenitally acquired limb deficiency, and infection related conditions.

Historical data

Prior to 1973, prosthetic care was primarily delivered to Australia amputees by the Department of Veteran Affairs (DVA) repatriation centres and a very small private sector, who were not tertiary trained. Veterans were provided prostheses at no cost, whilst community patients had to purchase their prostheses. The DVA centres in capital cities and a handful of larger rural centres provided almost exclusive care to Australian amputees. In 1973, the Whitlam government established the Free Limb Scheme (FLS). The scheme was designed to provide state of the art modern care and prostheses for all Australian amputees, whether they were veterans, or general community patients. As anticipated, demand for services was strong, and to enable demand to be met, private licenses were offered to select practitioners across the country (generally one or two in each state), and subsequently amputees were given the choice of public or private service provision. Policy development, administration and funding remained the responsibility of the DVA. The scheme was managed nationally. At the time of its inception and roll out, it was a world class program, and the envy of most nations. OPST began servicing Tasmanian Amputees

Survey Findings from amputees in Motion 2009

About you

The first part of this survey sought information About you. This included site of the amputation, the cause of the amputation/s and the types of supports used.

Table One: Who participated in the survey?

Comments:

More than half of the survey participants were male and the average age was 52 years. The majority lived with either their partner or their partner and children.

While the highest number of respondents came from Victoria, this can be attributed to the fact that Limbs 4 Life was established in Victoria and has more members in this state.

Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>68%</td>
<td>32%</td>
</tr>
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</table>

Ages

<table>
<thead>
<tr>
<th>Ages</th>
<th>18 to 81 years old</th>
</tr>
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<tbody>
<tr>
<td>Ages centered at 18</td>
<td>42% aged 41-60; 20% aged 21-40</td>
</tr>
</tbody>
</table>

Which states did participants live in?

<table>
<thead>
<tr>
<th>States</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victoria</td>
<td>37%</td>
</tr>
<tr>
<td>NSW</td>
<td>23%</td>
</tr>
<tr>
<td>Qld</td>
<td>22%</td>
</tr>
<tr>
<td>SA</td>
<td>9%</td>
</tr>
<tr>
<td>WA</td>
<td>5%</td>
</tr>
<tr>
<td>Tas</td>
<td>2%</td>
</tr>
<tr>
<td>ACT</td>
<td>1%</td>
</tr>
<tr>
<td>NT</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

Type of household

<table>
<thead>
<tr>
<th>Household Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live alone</td>
<td>20%</td>
</tr>
<tr>
<td>Live with partner or partner and children</td>
<td>62%</td>
</tr>
<tr>
<td>Live with other family members</td>
<td>15%</td>
</tr>
<tr>
<td>Live in a share house</td>
<td>2.4%</td>
</tr>
</tbody>
</table>


Employment status

38% work full or part time;
4.8% study and 4.8% are unemployed;
21% are retired while a further 20% retired due to disability.

Tasmania has an estimated 1500 amputees (source OPST) to be confirmed.
2. An Amputees journey (Source - Beryl Owen, OAM. Amputee. President, Amputee Association of NSW Inc.)

Facing limb loss is a devastating and traumatic experience that not only affects you, the amputee, but also your family, carers and friends. One of the most distressing feelings is the sense of loss that occurs after amputation. Many people find themselves experiencing very strong feelings before and after the amputation: anxiety and concern for the future, and why has this happened to me? which often manifests itself as anger and resentment toward yourself and others. Some amputees feel numb and show no response while the most common emotion is depression and a feeling of complete helplessness. You are not alone in having these feelings and recognizing these emotions is a part of the grieving and recovery process.

An important process is:

To talk to someone about the way you feel. Who you choose to confide in may be wide and varied your spouse, family, a close friend, a member of staff, Amputee Peer Support Visitor, another amputee.

To gain an understanding of the road to recovery what are the stages of rehabilitation from the surgical procedure through to discharge from the hospital and living as an amputee in the community?

Physiotherapists, health professionals and amputees have compiled this information package with the hope that it will answer many of your questions. Remember the most important person is you and we encourage you to talk with the team that is involved with your care, ask questions until you have an understanding and are comfortable with each stage of your care and rehabilitation.

The journey to recovery is a long and arduous one there will be ups and downs along the way. Being an amputee is life changing and the adjustment can be quite considerable. I hope that the information provided in this package will help to guide you and allay some of your fears and concerns as well as encourage you to reach your full potential.

What happens before the surgery?

Acute Phase (Pre-operative Phase)

Before having an amputation every possible avenue of salvaging the limb will have been attempted this may include vascular bypass surgery, medications and wound management.

The level of amputation will be dependent on factors such as:

The blood supply to the limb for vascular patients
The position of wounds/ lesions
The site of infection
The tissues damaged for trauma patients
The team of health professionals who will be involved in your care as an acute patient will involve:
Vascular Surgeon and his medical team
Nursing staff
Physiotherapist
Occupational Therapist
Social Worker
Dietician
Other people who may be involved are:
Diabetic educator
Psychologist / Liaison Officer
Amputee Peer Support Volunteer
Prior to the amputation if you and your family have any questions or concerns, don't hesitate to ask the members of the Amputee Health Care Team. You may request a visit from the nurse, physiotherapist, prosthetist or an amputee. See Request for Amputee Peer Support Visit later in this booklet.
Below is a list of questions that the team may ask you prior to surgery:
What other medical conditions do you have?
Have you had any previous operations?
What medications do you currently take?
Who is your GP?
How far were you walking prior to your admission?
Do you walk with any assistance (stick, frame, other person)?
Do you have steps or stairs at home?
Do you get pain in your legs when you walk?
What are your hobbies / leisure pursuits?
Do you live alone?
Do you drive a car?
Do you get any community help with washing, meals, housework, shopping, and gardening?

You will be examined by the medical team they will take blood pressures, pulse rates, listen to your chest, take blood for testing, etc. They will probably contact your GP to ensure they have all the information regarding your past medical and surgical history. The Physiotherapist may show you some exercises that need to be performed after the surgery to ensure that you have an optimal recovery. These include breathing exercises, exercises for the residual limb as well as the intact limb and stretches such as lying on your stomach. They may also show you walking frames that will help you once you have had the surgery.

What happens after the surgery?

Post-operative Phase

On return to the ward, you will no doubt be feeling very uncomfortable and drowsy. For the first 12 24 hours you will be closely monitored by the nursing staff which may include blood pressure, temperature and heart rate measures as well as reviewing your pain levels. In these early stages your pain levels will be managed with medications. The residual limb will be dressed appropriately and will have a drain coming from the limb. You may have a catheter in place to reduce the need for you to get out of bed to urinate in the early stages when you are drowsy. There may be a "drip' going into your arm to provide your body with necessary fluids.

On the day after your surgery, you will be seen by the physiotherapist. They will assess your lungs and require you to do some deep breathing and coughing to make sure your lungs remain filled with air and clear of mucous. If your pain allows, they will also try to get you strengthening the intact limb and moving the residual limb these may have been shown to you prior to surgery. Upper limb exercises are also common in the very early stages of treatment as the arms are used for moving around in bed, from bed to chair and for walking with a frame. All exercises are aimed at maintaining muscle strength and length with the view of returning you to an independent person as soon as possible. The occupational therapist will visit you to assess your functional independence in all daily activities, such as showering, dressing, toileting etc. Nursing staff will attend to your needs and the surgical team may visit you to give you some information about the surgery.

In the subsequent days a number of procedures will occur:

Drips, drains and catheters will be removed

Exercises will be progressed to more active levels

You will sit out of bed during the day

The physio will assist you to pivot or hop a very short distance to a chair.

Nursing staff and surgical team will review and redress the wound appropriately

The social worker may visit to enquire about the amount of support you have at home (spouse, family, friends, neighbours, services)
The Occupational Therapist may visit to discuss how your residence is set up (access, bathroom, lounge room, toilet, etc) and establish what sorts of equipment and/or modifications may be needed to assist you to return home.

These activities are guiding you toward regaining independent function in a supervised and safe environment.

Often after a period of 1 week, it is not unusual for the medical staff to recommend a period of inpatient rehabilitation. In this instance, a rehabilitation consultant will visit you to assess whether or not there is a need for this service at this stage you will have an opportunity to discuss your goals and concerns including your thoughts about returning home.

There are a number of problems that can occur over the course of your recovery. Some of these are expected whilst others are preventable or may arise despite the best possible care:

Problems that are expected to occur

Swelling as a result of surgery as well as pre-existing conditions such as heart or kidney disease. Swelling is likely to develop from the bottom to the top of the residual limb if left unchecked. The ways of reducing the amount of swelling that occurs include keeping the residual limb out straight when sitting up (not allowing the residual limb to hang down) and wearing pressure garments as directed by the staff. The swelling will reduce over time and will be a factor in determining when you are ready to be fitted with a definitive prosthesis.

Pain It is inevitable that you will experience pain and discomfort following surgery. This may be less painful than your pre-operation pain level although this is not guaranteed. Every effort is made to reduce the level of pain you experience but you will need to ensure the staff are informed so that your pain can be treated appropriately. Stump pain, phantom pain and phantom sensation are discussed later in this booklet.

Muscle Weakness the strength in your muscles will be affected by your inactivity during your recovery after the surgery. There may also be a degree of weakness that has developed prior to the surgery. The strength you lose can be limited by attending to the exercises prescribed for you by the physiotherapist as well as cooperating with nursing staff in mobilizing with walking frames to attend to activities such as toileting and showering.

Reduced fitness In the same way that inactivity makes muscles weak, inactivity will also reduce your fitness level. This may have been a problem prior to the surgery. Fitness is important to the amputee because the demands of walking with a prosthetic limb are greater than they were when you walked with your own limb.

Reduced mobility (falls) Amputation inevitably leads to a reduction in mobility at least in the early stages. You will require the aid of a walking frame initially it is the aim of the rehabilitation team to reduce the amount of support you require from walking aids as soon as possible. A prosthesis will help to reduce your dependence on walking aids. Amputees are at a high risk of falling and should do everything possible to prevent this from occurring. Refer to the section on falls later in this booklet.
Change of body image Acceptance of the loss of a limb will affect each person in different ways. Amputation will also have an impact on the people closest to you (ie family and friends). Although your outward appearance has changed, remember that you are still the same person you were prior to the amputation. Refer to the section later in this booklet called Change of Body Image.

Problems that may occur

The following are preventable or reversible problems:

Wound infection The wound should be dressed appropriately by the nursing and/or medical staff. You should avoid tampering with the dressings as this may lead to contamination of the wound and infection. It is important not to touch the wound whilst it is fresh and still healing. An infection in the wound will lead to delayed healing and may be the cause of residual limb discomfort when using a prosthesis later on down the rehabilitation track.

Muscle contracture This occurs when the length of your muscle shortens so that your joints cannot be moved through a full range of motion. It is often caused by habitually holding the limb in a bent position. It most commonly affects the knee joint (so that you cannot straighten the knee) and the hip joint (so that you cannot move your leg back behind you). Muscle contractures will make it more difficult for you to manage an artificial limb and will prolong the rehabilitation period. Your physiotherapist should show you a series of stretches designed to prevent and/or reverse muscle contractures. However, prevention is far easier. So please adopt the following positions to rest comfortably and prevent painful muscle contractures.

The use of post-operative rigid dressings for trans-tibial amputees

The NSW Amputee Care CGRG recommended that a rigid dressing be applied to the amputated limb immediately post operatively. The purposes of a rigid dressing, both removable and non-removable, are:

To control oedema and thereby facilitate wound healing.

To protect the residual limb from possible trauma.

To allow shaping of the residual limb prior to prosthetic fitting.

To assist with pain control.

This type of dressing maybe applied in two ways:

A rigid removable dressing (RRD) applied directly post operatively by an appropriately qualified person. The surgeon may wish for the RRD not to be removed for a nominated amount of time following surgery. The RRD finishes just below the patella and allows the knee to flex.

A plaster cast dressing, usually put on by the surgeon, that remains in place for approximately three days after surgery or until the surgeon wishes it to be removed. This plaster cast encompasses the knee and ceases mid-thigh. After it is removed this initial dressing is substituted by a rigid removable dressing (RRD).
Removable Rigid Dressings

A synthetic casting sock (Shapemate SSM400-M) may be rolled onto your stump to form a rigid cap. It is used for protection while you begin to move around the bed or prevent damage to your stump from a bump or fall. At times this replaces the compression bandage by preventing stump swelling. As your stump reduces in size, additional stump socks may be added to your stump to fill in the space and maintain a close fit. This should be worn at all times except when in the shower and dressings changed.

**Removable Rigid Dressing Application**

*The rigid dressing is a cast worn over the residual limb following amputation. It is removable so the limb can be inspected, cleaned or re-bandaged daily.*

**Benefits of the Removable Rigid Dressing**

- Provides protection of the residual limb against falls or bumps.
- Helps manage swelling in the residual limb.
- Maintains residual limb shape with a consistent pressure and is easy to apply and remove. This provides a more stable environment for healing to occur.
- Helps prepare the residual limb for potential prosthetic use by assisting desensitization of irritable tissue and enhances acceptance of the feel of a socket.

*The rigid dressing should be worn 24 hours a day except when inspecting, redressing, or cleaning the residual limb (unless otherwise instructed by the health care professional).*

**Applying the Removable Rigid Dressing**

1. Apply prescribed wound bandaging as needed.
2. Apply the number of socks instructed. Be sure there are no wrinkles.
3. Hold the rigid dressing from the base and slowly slide it over the end of the residual limb. Often a gentle rocking motion side to side, then front to back will help the cast slide on more easily.
4. Provide upward pressure on the rigid dressing until the residual limb fits snugly to the base.
5. Secure the Removable Rigid Dressing with either a compression stocking, shrinker sock, or thigh cuff as instructed by the health care professional. To secure an above the knee rigid dressing, use a lightweight shrinker with a built-in hip spica belt.

**Monitor the Fit of the Rigid Dressing Daily:**

- Apply appropriate number of limb socks, pulled up snug to prevent wrinkles.
- If the cast fits loosely, limb socks should be added until the cast fits snugly.
- If the cast fits snugly, maintain the same number of socks.
- If the cast is very tight, limb socks may be removed. This is not as common.
- It is very important to keep consistent pressure for limb shaping and initial shrinkage. It also prevents excessive cast movement and possible skin irritation.

Continued on next page...
DO...

- ...support stump on bed
- ...sit in wheelchair with stump supported
- ...keep knee straight
- ...keep back straight
- ...lie with knee straight
- ...keep hip straight
- ...keep thighs together
- ...rest stump on bed
THINGS TO AVOID

Fig. 5 (a). Avoid curving your spine

Fig. 5 (b). Avoid placing a pillow under your hip

Fig. 5 (c). Avoid placing a pillow under your knee
Weight gain Over the course of your hospital stay, you may find that your weight fluctuates initially you lose weight but as you recover you may find that you gain weight due to lower activity levels and return of appetite after the surgery. Until you are able to find a stable goal weight, it is not appropriate to fit you with a definitive limb fluctuations in weight will invariably indicate fluctuations in the size of the residual limb which will affect the fit and comfort of your prosthesis. The components that make up your prosthesis are also weight limited and excessive weight may limit the type of artificial limb you are able to wear.

Wound dehiscence and delayed healing Wound dehiscence is defined as separation of the edges of a healing surgical scar. One of the main causes of this is when an amputee falls directly onto the residual limb in the early stages of recovery. When a wound splits, it heals in a manner that causes the scar to be thickened and tethered to the underlying tissue and bone this leads to significant discomfort when wearing a prosthesis. Delayed healing will mean a longer period of rehabilitation. Prevention of falls, good diabetic control and abstaining from smoking will ensure that you are doing everything possible to facilitate wound healing.

The following are problems that can occur in a small number of cases without reason and despite the best possible care:

Neuromas These are small balls of nerve tissue that form at the ends of the cut nerves in the residual limb. Neuromas usually emerge during the prosthetic phase of your rehabilitation and the symptoms are shooting type pains when pressure is applied to a specific small area on the residual limb. There are a number of treatments for neuroma these should be discussed with your rehabilitation consultant.

Bony spurs Occasionally, small spurs develop from the severed end of the amputated bone. A simple x-ray will diagnose this problem and a small surgical procedure may be required if it is significantly affecting your ability to manage and use a prosthesis.

Acute Phase Treatment

Here is an example of the sorts of things members of the Amputee Care Team are likely to be doing at different stages during your acute hospital stay. Times and activities may vary between hospitals.

Pre-operatively: Assessments by Doctors (Anaesthetist, Vascular Surgeon / Registrar, Intern) and Nursing Staff. You may also be seen by other members of the Team, but this will depend on the urgency of your surgery.

Day 1: The ward doctor and physio will listen to your chest and ask you to do deep breathing and coughing exercises that prevent problems with your lungs. Drips and drains will likely still be in place. The physio will attempt to get you to do exercises with all your limbs. Nursing staff will monitor your pain, blood pressure and heart rate.

Day 2: Drains usually are removed if they haven't already been taken out. (If they stay in place there is no cause for alarm.) Nursing and physio staff will be attempting to get you out of bed and sit in a chair. The physio may also get you to complete some exercises and ask you to lie on your stomach. Monitoring by nursing staff may be reduced as you become more stable. The ward doctor may review you as required.
Day 3 - 10 (or to discharge from the acute hospital): The physio will gradually progress your exercises and include a short hop as well as practice your ability to transfer from bed to chair. Nursing staff will encourage you to sit out of bed and assist you with bathing and toileting as well as monitor your pain. The surgical wound may be reviewed at any stage up until now by the surgical team (Vascular Consultant, Registrar, Ward doctor/ Intern).

Closer to Day 10 and beyond: Daily wound review, physio exercises and mobility practice. Consultation from a Rehabilitation Specialist and referral to a rehabilitation facility (if appropriate). Discharge from the Acute Hospital.

REHABILITATION PHASE

Rehabilitation is necessary for all amputees to enable them to achieve their full potential and return to living in the community (eg home with or without services, living with family, residential care). Your recovery will begin soon after surgery and extend to sometime after you have been discharged from hospital. The focus of your therapy will vary from the initial period that concentrates on reducing pain, to the later stages after discharge that aim to help you manage more difficult functional tasks.

The use of Christian names is encouraged (both between fellow patients and staff) to establish a more relaxed family atmosphere. All patients are requested to wear street clothes while a patient in rehabilitation. This encourages a not sick attitude and (we hope) helps you feel you are home away from home.

It is important that you actively participate in the rehabilitation process to maximize the benefits that you can gain from this in the short and long term. This means working with the medical/ nursing staff and therapists to:

1. Assess your aims and expectations
   
   It is important for you to communicate with your treating health professionals in order for you to achieve any goals you have. These may be as simple as being able to take yourself to and from the toilet or as complex as returning to the workforce and caring for your family. You will be given every opportunity to fulfil your expectations though it should be remembered that, despite the best efforts from all parties, some goals may not be achievable.

2. Prepare your residual limb to use a prosthesis

   Reduce swelling

   Some swelling (oedema) in the residual limb is inevitable after the surgery and will change to some degree in the early stages following amputation. Whilst the size of the residual limb is fluctuating, it is difficult to manufacture a prosthetic limb and maintain a comfortable fit for an extended period of time if the residual limb size decreases rapidly, the socket of the prosthesis will feel loose on your leg and your control of the prosthesis will be reduced. Some change in stump size can be accommodated by the use of stump socks but large changes in swelling needs to be managed as early as possible after amputation in order to achieve the stable residual limb volume necessary prior to the prescription/ manufacture of your prosthesis. Your Medical Team has the choice of several methods to reduce the swelling and protect your
Stump Shirkers may be used to reduce oedema in your stump. The following diagrams explain how to put them on.
Stump bandaging may be done with a crepe bandage which is non-elastic and holds the dressings and drains securely.
When your wound is ready for just a simple dry dressing, the bandage may be an Elset S Type 3a light compression bandage BS 7505:1995. This is a white open weave bandage for the early stage when your sutures may still be in, but compression may begin.

After the sutures have been removed, you may be given a Hartman (or brand name Conco) latex free bandage, single or double length, 6 inch (3861) or 4 inch (3840) with a much stronger compression. The smaller stump may only require a 4 inch single (or double) length bandage where as a larger stump may require the larger 6 inch double length bandage.

The following diagrams are examples of how to wrap your stump with the bandage. The general principles are to:

Cover the whole stump

Place holding turn(s) above the knee for a below knee amputation or around the waist for the above knee amputation

Place more layers of wraps at the base of your stump where the scar line needs the most support than at the top to hold it on.

Fasten the end of the bandage with micropore tape, not safety pins or clips as these may come loose and damage your skin.

Below Knee Amputation Stump Bandaging
Single loop under the bottom of the stump (Fig. b)

Single or double hold turn above the knee (Fig. c)

Figure of 8 diagonal turns to cover all the skin Fig. (d, h)

Continue figure of 8 turns to add at least 6 layers to the bottom of the stump.
Fasten the end of the bandage in a location easy to reach. You may fold the end in rather than try to fasten behind your stump.

Fasten with micropore tape (any sticky tape). Do not fasten with safety pins or clips with claws which may damage your skin.

To be worn at all times except during dressing changes, showering or massaging your stump.

Above knee amputation bandaging

Single loop under the bottom of the stump

Single or double hold turn around the waste.

Figure of 8 diagonal turns to cover all the skin. Continue figure of 8 turns to add at least 6 layers to the bottom of the stump.

Fasten the end of the bandage in a location easy to reach. You may fold the end in rather than try to fasten behind your stump.

Fasten with micropore tape (any sticky tape). Do not fasten with safety pins or clips with claws which may damage your skin.

To be worn at all times except during dressing changes, showering or when massaging your stump.
Desensitizing the residual limb

The residual limb, especially the surgical wound, is often painful and sensitive to touch in the early stages following amputation. For some people, the weight of the bed sheets will feel too heavy and cause discomfort as the act of bearing weight through the residual limb is much greater in comparison and is one of the reasons why prosthetic legs cannot be fitted earlier. Sensitivity and pain in the residual limb will need to be reduced in order for you to tolerate wearing a prosthesis.

Facilitating wound healing

The surgical wound will need time to heal prior to the provision of a prosthesis. Applying the pressures of weight bearing too early on the residual limb may cause the edges of the wound to split apart and therefore increase the time it takes for the wound to heal properly. Wounds that split open or become
infected often heal with greater scarring this can be detrimental and cause discomfort when wearing a prosthesis.

Things that you can do to help are:

- Maintain a balanced diet
- Including good blood sugar level control for diabetic people
- Appropriate exercise
- Cease smoking
- Ensure the wound remains clean and free from sources of infection (dirty hands)

Wound healing, sensitivity and swelling need to be managed by members of the rehabilitation team (which includes you) to enable you to be fitted with a temporary prosthesis and in the long term with a definitive prosthesis.

3. Strengthen your body to cope with activities of daily living

The loss of a limb will alter your abilities to carry out activities of daily living. Time spent in bed recovering from surgery will also cause the muscles to waste and weaken. Simple tasks such as standing and balancing or being able to rise from a chair will take a lot more effort and required the use of muscle groups that were not previously used for this purpose. The upper limbs will be required to compensate for the loss of a limb for all functional tasks and daily activities. Initially, the intact leg will do most of the work balancing and bearing the weight of the body it is important to maintain strength as well as monitor the condition of the intact limb. The strength of the residual limb must also be maximized the muscles previously used to propel you along when walking have been lost and other muscle groups will need to be recruited to enable you to walk. Your residual limb is essentially a small lever used to control and manipulate your prosthetic limb.

The aims of strengthening exercises are to:

- Prevent muscle wasting (the de-conditioning of muscles) due to bed rest and recovery from surgery/anaesthetic.
- To prepare the muscle groups required to compensate for the loss of the limb.
- To enable the residual limb to operate a prosthesis.

The main thing for you to remember is the importance of being an active participant in the rehabilitation process it is, after all, you who will benefit the most from the effort you put into your exercises. If you have any questions, do not hesitate to ask your treating physiotherapist.

4. Stretch specific muscles

In order to walk as efficiently as you can, it is important to maintain muscle length through stretching specific muscle groups in the residual limb. If these stretches are not completed you are at risk of developing contractures or shortening of the muscles which has consequences for your walking
technique. In some cases contractures can cause secondary problems such as back pain and pressure areas as well as creating practical cosmetic problems for manufacturing your prosthesis.

As highlighted in the strengthening section above, it is important that you take responsibility for completing these exercises as set out by your physiotherapist.

5. Maintain and improve exercise tolerance

If you have been inactive prior to amputation, your ability to exercise will be affected. This may be due to pain and discomfort in your leg before and during admission to the hospital which has limited your ability to mobilize. Pre-existing heart and lung problems will also limit your exercise tolerance.

Ironically, amputees require more energy and exercise tolerance in order to walk using a prosthesis. For example, in comparison to a non-amputee, a below knee amputee requires at least 40% more energy to walk whilst an above knee amputee requires 100% more energy to walk with a prosthesis at any given speed.

It is important for you to try to improve your exercise tolerance to maximize your potential as an amputee regardless of whether you are intending to be a prosthetic user or not. You can assist in this process by:

- Following the advice of medical staff regarding medications and diet
- Stop smoking
- Exercising daily and progressively increasing your activity levels as directed by the therapy staff.

In situations where exercise tolerance cannot be improved, an occupational therapist may be able to advise you regarding conserving your energy when attempting activities of daily living.

6. Facilitate acceptance of new body image

Everyone reacts to amputation in their own way. Many people have feelings of anger, resentment and despair. It is not a weakness to have these feelings, as they are part of the normal grieving process as an amputee you have suffered a loss described as being equivalent to losing a loved one.

Acceptance of your new body image can begin by acknowledging your feelings and emotions in relation to the amputation. You may choose to discuss these issues with a broad range of people:

- Family and friends
- Nurses
- Social workers
- Doctors
- Other health professionals
- Other amputees

Talk to people you feel comfortable with and by discussing your feelings and emotions, you are helping to come to terms with your amputation and accepting the new you!
Although my outward appearance has changed, I am still the same person on the inside.

7. Maintain motivation

Recovering from amputation is a long process inevitably it isn't as easy as putting on a leg and off you go. There is significant drain on you both mentally and physically and there is a minefield of complicating factors that may occur many of these can be overcome by following the instructions and counselling of the rehabilitation team.

It is important that you, as well as the rehabilitation team, be motivated toward achieving your full potential as an amputee. This starts with setting realistic, achievable goals on a daily basis. This might be as simple as doing 10 more repetitions of an exercise or walking on a prosthesis for the first time. When reflecting on your progress ask yourself What can I do today that I couldn't do yesterday / a week / a month ago?

Your therapy staff will no doubt be pushing you to achieve your goals and outcomes by encouraging exercises and practice of tasks. This should not be interpreted as punishment of any kind but viewed in the same way as a coach training an athlete to be the best they can be.

8. Transfer from one surface to another

Within the first couple of days following your amputation, the staff will attempt to get you out of bed to sit in a chair. Depending on your capabilities at the time, staff may use a number of methods to move you from one place to another eg slide-boards, slide sheets, lifters, frames. You should eventually be able to manage this on your own with or without the aid of a prosthesis however, it is important that you learn the safest and most appropriate method of transferring to reduce the risk of falls and subsequent damage to other parts of your body. Your Physiotherapist and Occupational Therapist will be able to instruct you in the best methods of transferring.
**TRANSFER**

**Out of Bed to Wheelchair**

**1**
Set-up Wheelchair:
Move foot rests out of the way; pull chair on slight angle tight to side of bed; and lock brakes.

**2**
With chair next to sound limb, scoot buttocks toward side of bed and grasp far armrest with sound side hand.

**3**
Place foot angled slightly away from chair (to decrease twist on foot), lean trunk forward, push on armrest and bed to lift buttocks.

**4**
Pivot body until back of sound limb is against wheelchair.

**5**
Grasp both armrests and slowly lower body into back of wheelchair.

**6**
Replace footrest to support sound limb, support residual limb.

*Reverse this process to return to bed, or refer to transfer with assist.*
9. Learn to balance

Balance is significantly affected following amputation the lower limb has previously provided important information to the brain that enabled your body to maintain your balance on two feet.

In the initial stages following your amputation, you will rely heavily on your intact limb for balance the addition of frames and other mobility aids will be used to stabilize you at this stage. The addition of a prosthesis will give you more support (literally two feet to stand on) however; the prosthetic limb itself has no feeling and will give your brain limited information regarding your balance on that side. The
pressure of the residual limb in the socket may provide some feedback and you must learn to use this
sensation to help control your balance. For some amputees, this may occur with practice but others may
require the use of a mobility aid long term.

10. Improve mobility and learn to mobilize with a prosthesis

The rehabilitation process is aimed at attaining a level of mobility and independence. In the early stages,
as mentioned above, balance, transfers and mobility may require the assistance of frames as well as staff.
The addition of a prosthesis will also help improve your mobility and reduce some of the strain on your
other limbs. Many hours of practice and determination will be required for you to achieve a reasonable
level of competence walking with a prosthetic limb. In order for you to obtain the optimum benefit, it is
important for you to heed the advice of and work with your physiotherapist.

11. Caring for your residual and intact limb

The residual limb requires constant observation and attention following amputation to ensure there is no
development of pressure areas on the limb. Walking or transferring with a prosthesis will place stresses
on the residual limb that are not normally subjected to this part of the leg i.e. you will now need to bear
the weight of your body through the residual limb. Maintaining the hygiene of your residual limb is
important perspiration and the dirt and grime of daily activities can lead to development of wounds and
infection.

Wash your stump daily with sapoderm, gamaphen or phisohex, then massage. Rinse and dry your skin
thoroughly with a clean, soft towel. Air dry your stump for 5 minutes before bandaging or replacing your
stump shrinker or removable rigid dressing.

Do not rub oils, creams, alcohol or methylated spirits on your stump unless advised specifically to do so.
It is important to care for your own skin type, for example, to moisturize dry skin. Obtain a small mirror
to inspect your stump daily.

If you notice any wounds or pressure areas developing on your residual limb, you should contact your
prosthetist and/or Amputee Clinic to organize a review of your residual limb and prosthesis. It may also
be necessary in the meantime to have your residual limb reviewed by your General Practitioner or
Community Nurse and reduce the amount of time you spend wearing your prosthesis.

The object of residual limb (stump) care is to produce a well shaped, healthy stump, ready for prosthetic
fitting in as short a time as possible.

After the amputation, your stump will be swollen. The swelling must be reduced before your limb can be
cast for the prosthesis. Your stump will continue to shrink for a couple of years after the operation, but at
least one-half of the total shrinkage takes place within the first 2 months. Stump bandaging or wearing a
removable rigid dressing is encouraged as soon as your stump is ready.

Bandages should be re-applied four times daily and worn at all times unless wearing your prosthesis. This
bandaging should be continued for at least twelve months after the initial amputation. A properly applied
bandage maintains a good shape to the stump. It helps circulation and it accustoms the stump to constant
covering and pressure. The physiotherapist will teach you how to bandage your stump and will supply you
with the correct type of bandages.
If your team recommends a Removable Rigid Dressing (RRD) for you, its hard plastic structure will prevent additional swelling to occur. It will also assist in protecting your stump while you are mobilizing in your bed, transferring or if you happen to fall.

Your intact limb also requires constant observation and attention for the same reasons as mentioned above. The application of creams and lotions should be discussed with your doctor.

12. Care of your prosthetic limb

The prosthetic limb is in many ways the same as any mechanical device it requires regular maintenance and needs to be kept reasonably clean and free of debris to work effectively. Your prosthetist is to your prosthesis as your mechanic is to your car! Your prosthesis should be checked or serviced every 6-9 months to ensure all parts of the leg are intact and in good working order. It is your responsibility as a prosthetic user to keep the socket and liner free from dirt, fluff or dusts as well as ensuring your limb socks are clean if appropriate. If you have any questions about your prosthesis, e.g. the way it is fitting, whether it is working properly, please contact your prosthetist.

Special care must be taken when wearing your prosthesis so that you do not injure your stump:

- Put a stump sock over the end of your stump before you put on the prosthesis
- Be sure that your sock fits closely, without folds or wrinkles
- Do not wear garters or rubber bands to hold up your stump socks
- Change your sock at least once each day
- Wear extra stump socks if your stump has shrunk and your prosthesis is loose.

If you change shoes, make sure that the heels are the same height as the heels of the shoes that you used when your prosthesis was fitted. Changing heel height will alter the alignment of the prosthesis which may destabilize your walking and cause a fall.

Wash your socks by hand in warm water with a neutral detergent. Squeeze suds gently through your socks, do not twist. After the detergent is thoroughly rinsed out, roll your socks in a towel to blot out extra water and allow them to dry naturally.

Clean the inside of your plastic or fibreglass socket with a damp soapy cloth. Rinse any soap residue off with a moist cloth. Dry thoroughly with a dry cloth.

Do not adjust any screws, hinges or other mechanical parts. If you notice loose screws or something wrong with your prosthesis, contact your prosthetist or physiotherapist as soon as you can.

13. Relearn activities of daily living (e.g. cooking, showering, etc)

All aspects of your rehabilitation are aimed at returning you to a level of function that enables you to be as independent as possible. Activities of daily living such as showering and cooking may require modification in order to achieve a higher level of independence. This may include the provision of assistive devices (e.g. shower chair, raised toilet seat, perching stool) or learning new techniques, but in many cases, home modification of some description will be necessary (e.g. hand rails, hand held shower hose,
access ramps). An Occupational Therapist will work with you to trial these techniques and put the appropriate strategies into place.

14. Monitor weight

The delicate issue of monitoring your weight is significant for a number of reasons:

Fit of the prosthesis- the socket of the prosthesis has been manufactured from a cast of your leg at a given time. Reductions in the size of your limb can be accommodated with extra limb socks. However, an increase in weight and therefore size of the residual limb will prevent you from fitting correctly into your prosthetic socket and may cause pressure areas on your residual limb.

Prosthetic components At the time of prescription, the appropriate components will be used in the manufacture of your limb like all mechanical devices, each component used in a prosthesis has a weight or load tolerance. Whilst mild changes in weight may be tolerated, any major changes may lead to prosthetic failure (i.e. the prosthesis breaking) and the need to update your prosthetic limb to a more heavy-duty model.

Exercise tolerance Activity for amputees places increased demands on the cardiovascular system e.g. walking requires 40% more energy for a below knee amputee than it does for an able bodied person. Often this is combined with pre-existing problems such as heart and lung disease. An increase in weight will add to the stresses on your cardiovascular system and reduce your tolerance to exercise.

Diabetic stability A large proportion of amputees have diabetes. Control of diabetes is dependent on diet, medication and exercise. An increase in weight may indicate that your diabetic management is inadequate and requires modification. If you are unsure about the management of your diabetes, you should contact your Diabetic Consultant or General Practitioner (GP) and discuss your concerns.

Stress on the intact limb In many cases the intact limb already compensates for the loss of a limb to some degree. Any increase in weight will place an added burden on this limb and therefore strategies should be taken to maintain or reduced the load on the intact limb.

If you are having problems controlling your weight, your GP may be able to help with referrals to the appropriate services e.g. dieticians and physiotherapists.

15. Prescribe appropriate home modifications, aides, and services (e.g. frames, meals on wheels, community nursing, home care, home help)

All members of the rehabilitation team will be involved in the prescription of appropriate modifications, aides and services required to ensure your transition from the hospital setting to your place of residence.

For those able to return to home, an Occupational Therapist will visit your house and suggest appropriate modifications that will enable you to achieve your highest possible level of independence. Walking aides will be prescribed by a Physiotherapist for short or long term use and in many cases this level of mobility will be reassessed as an outpatient. Community Nursing required for personal care, medication and wound management is arranged prior to discharge from the hospital by the medical and nursing staff. Social Workers can assist in referring you to services and other helpful community groups who can assist you with tasks you may have difficulty with around the home, such as gardening and shopping services.
Every effort will be made to have these items/strategies in place prior to your discharge from the hospital however; there are sometimes delays in their commencement due to community demand. Some community organizations will charge a fee.

16. Provide education for all of the above

Part of the responsibility of the Rehabilitation Team is to educate you regarding as many aspects of your recovery as possible. You and/or your family should not hesitate to ask the staff questions regarding your rehabilitation many questions can be answered within this information package or at least point you in the right direction of the appropriate person to consult.

As you have read, the recovery from amputation is a long and involved process, involving a number of health professionals and, most importantly, yourself. Remember that the rehabilitation process is designed to ensure that you have the best possible preparation for the fitting and use of a prosthetic (artificial) limb. In some cases, even with this preparation, it may not be possible for you to manage a prosthesis. In this case, rehabilitation will focus on enabling you to maximize your independence without the aid of a prosthetic limb.

Once rehabilitation is complete, maintaining your independence is up to you and should remain the focus of your attention.

3. THE HEALTH CARE TEAM AND THEIR ROLE IN YOUR CARE

There are a number of people who will be involved in your care during your recovery following amputation. Each person will have a role aimed at achieving your full potential as an amputee.

SURGEON

This is the specialist who performs the surgical amputation and has training in vascular, orthopaedic or general surgery. They will have discussed the pros and cons of the surgery with you as well as completing necessary tests to ensure there are no other alternatives to this outcome.

ANAESTHETIST

This specialist only has a brief involvement and assesses you prior to the surgery. He will ensure that you remain pain free during the operation.

NURSING STAFF

The nursing staff is responsible for your 24 hour care whilst you remain in the hospital. They attend to your daily needs of showering and bathing, toileting, wound care, medication requirements and look after your general well being. The emphasis of nursing care will differ from the acute well being. The emphasis of nursing care will differ from the acute to the rehabilitation setting. Often a Clinical Nurse Consultant will help to co-ordinate the rehabilitation team, ensuring that all members of the team are involved at the
appropriate times. Techniques and exercises learned in therapy sessions will be encouraged on the ward by the nursing staff.

PHYSIOTHERAPIST

Your exercise program will be set up by the physiotherapists and will include stretching, strengthening and balancing activities. Most amputees do not wear their artificial limb all waking hours. A Physiotherapist will assist you to learn how to move around with and without the prosthesis. You may chose a wheelchair or walking aid to get around whenever the prosthesis is not used. They are also involved in preparing your residual limb for the fitting of an artificial limb. The Physiotherapist may initiate a temporary prosthesis to begin the prosthetic training. Once a limb is fitted walking or gait retraining commences and is dependent on active and ongoing participation in the exercise regime.

OCCUPATIONAL THERAPIST

Training and assistive devices are required to enable you to complete activities of daily living such as showering, cooking and washing. The Occupational Therapist plays a major role in setting up the home environment for maximum independence this may include prescribing and organizing appropriate home modifications (e.g. ramps, rails, hand held shower hose). The Occupational Therapist will prescribe appropriate assistive equipment such as wheelchairs, shower chairs and over toilet aids. Before purchasing any equipment or organising home modifications it is best to seek the advice of your Occupational Therapist. The Occupational Therapist will also discuss with you any issues regarding return to work and driving, if applicable, and refer to the most appropriate service for these.

SOCIAL WORKER

Provides counselling to you and your family with practical assistance and advice on financial and social matters as well as co-ordinating community services that will assist you when you are discharged from hospital.

PROSTHETIST

The Prosthetist makes artificial limbs. Your functional and cosmetic needs will be assessed and the decision making process will begin to determine the components that are required for your artificial limb / prosthesis. The prosthetist will manufacture, fit and adjust your artificial limb as well as advise you regarding the care and maintenance of your prosthesis.

REHABILITATION CONSULTANT / GERIATRICIAN

The Rehabilitation Specialist / Geriatrician will coordinate your rehabilitation both as an inpatient and as an outpatient. They will monitor your medical progress, adjust medications, review wounds as well as seek advice from other medical specialists as required. As an outpatient, they will be responsible for prescribing your definitive prosthesis.
OTHER DOCTORS

There are a variety of other doctors involved in your care. On the ward you may hear them referred to as an Intern, Resident and Registrar; these terms refer to the level of seniority that each of the doctors have achieved. Other Consultants may be called upon to assess specific health problems you may experience before and/or after your surgery. The doctors will ensure that you are prescribed the correct medications, order any necessary tests or scans, and review your overall health and well-being.

DIETICIANS

The Dietician will plan a programme of good nutrition adapted to your food preferences and special dietary needs. It may not be essential for each patient to be reviewed by the Dietician.

PODIATRIST / FOOT CARE SPECIALIST

Your intact limb will need ongoing care to ensure it remains in optimal condition. A Podiatrist or Foot Care Specialist may be involved in your care to assess and treat any problems with your intact foot (e.g. treatment or debridement of wounds, cutting nails correctly, attending to corns and callouses). In some cases a Podiatrist may review your footwear and suggest the use of insoles to support your foot.

DIABETIC EDUCATORS

For diabetic patients, educators may be called to review the way you manage your diabetes. This includes assessing your technique for taking your blood sugar levels and linking you with services available to diabetics of which you may be unaware. As an educator, they can provide you with relevant information to help you better care for your diabetes.

PSYCHOLOGIST

The loss of a limb causes some amputees to be susceptible to bouts of depression and other mental illnesses—short term and long term confusion is also a side-effect of anaesthetics in some people. In these cases a psychologist may join the team to define the problem, and provide counselling and strategies to help overcome these problems.

AMPUTEE VOLUNTEERS

At some hospitals there are trained volunteers who are amputees themselves. Staff at your hospital will be able to tell you whether this service is available and make a referral at your request. These volunteers can help by providing you with insight, sharing their own experiences as an amputee. The volunteers are valued and respected members of the team who provide you with support, strength, encouragement and hope for the future, but do not have formal medical or health professional training.
REQUEST FOR AMPUTEE PEER SUPPORT VISIT

Approved and trained Amputee Volunteer Peer Support Visitors are available to speak to the patient, family or friends before or after an amputation. Contact the Peer Support Team on 1300782231 for details.

Questions Frequently asked by new Amputees

How long will I be in hospital?

There is no set period of time it takes to recover and return home following amputation. In broad terms, you may need to stay in the hospital where you have your surgery for up to a couple of weeks. The majority of amputees then require a period of time in a rehabilitation unit for ongoing training to relearn skills required to perform everyday tasks such as transferring, showering, dressing, walking, making simple meals, etc. This time period will again vary from person to person depending on the individual's circumstances (e.g. age, other health problems, social circumstances).

How long will my wound take to heal?

Ideally the wound should heal after 21 days. Factors that disrupt the healing process are infection, falls and trauma, smoking and other health issues such as diabetes and poor circulation. These issues can significantly increase the time it takes for the wound to heal from weeks to months.

You can optimize the healing of the surgical wound by maintaining stable blood sugar levels, minimizing smoking, preventing falls and trauma to the residual limb, keeping the wound clean and leaving dressings intact. The wound dressings should be left to a designated individual (community nurse, member of the family who has been given training by nursing staff); wounds that have been interfered with are at risk of developing an infection.

Can I touch the scar?

Touching an open wound MAY create an infection, do not place your fingers on an open wound. Once the wound has healed, there should be no problems with touching the scar. It is important to ensure the hands are clean and care should be taken to minimize damage to the residual limb by removing rings and watches which could scratch or tear the skin.

Psychologically it is important to touch and observe the residual limb to help adjust to the change in body image. Inspecting the limb for blisters and pressure areas is an important part of the amputee's daily routine in caring for the residual limb.

Please explain rehabilitation to me.

Rehabilitation is the process of training you to return to activities of daily living, regaining independence and mobility. This requires the input from a number of health professional including medical and nursing staff, physiotherapists, occupational therapists, social workers, prosthetists, and dieticians.
How long before I get my limb?

Fitting a prosthesis (artificial limb) is dependent on a number of factors the presence or absence of complications will determine the timing. The wound needs to be close to healed or at least stable / partially healed before a temporary prosthesis is considered. The residual limb also needs to have a tapered appearance so that it will fit into the opening of the socket if the end of the residual limb is bigger than the top it will not be able to be fit into the socket.

The temporary limb will be constructed by the physiotherapist or prosthetist a mould of the residual limb is cast from plaster, fibreglass and a variety of foams and padding which is then attached to a metal pylon and foot to make up the prosthetic limb.

The definitive limb (proper leg) is made by the prosthetist and requires a prescription from an accredited Rehabilitation Consultant / Doctor. This can take place when the residual limb size is stable, there is no or minimal swelling and the wound is well healed.

Will my definitive limb last me for the rest of my life?

The definitive limb is a mechanical device and just like your care it requires maintenance and servicing. The limb will need to be inspected by the prosthetist who constructed it at least twice a year. They will check that screws are tight; that there is no damage to the componentry and also check the alignment of the prosthesis.

The residual limb is living tissue and therefore is subject to change over time. Changes in weight can make a difference to the fit of your prosthetic limb. Muscles and tissue of the residual limb will also change shape due to the new pressures placed on it by the prosthetic limb.

The amputee has a responsibility to ensure that the prosthesis is checked regularly by their prosthetist. They also have a responsibility to inspect and care for the residual limb, looking for pressure areas, blisters or any other region of skin breakdown. If this occurs, an appointment should be made with you prosthetist as soon as possible it may only need a minor adjustment to prevent major problems developing.

How much will my limb cost?

The Tasmanian government via OPST has established the Artificial Limb Service to provide amputees with prosthetic limbs. If you are a holder of a Centrelink Health Card or a Commonwealth Seniors Card you are eligible to have a limb provided free of charge. If you do not hold either card, you will be required to pay for partial price of the limb. Your OPST prosthetist can provide further details. Cost will depend on components and your particular situation. People who will be making a Workcover or CTP claim should discuss the cost of the limb with their prosthetist and rehabilitation consultant.

Can I sleep with my limb?

There is no need to sleep in the prosthetic leg at night. Most prosthetic limbs are made for functional purposes and therefore will not be required when one is asleep.
Do I have to wear my shrinker/ rigid cast at night?

Shrinkers and rigid cast devices are used in the early to late stages of management of the residual limb. They help to maintain or reduce the size of the limb and limit any further swelling and should be used at night for this purpose. The rigid cast is especially useful in early management as amputees are prone to falling at night they often forget their limb is no longer there and attempt to walk. The rigid cast will prevent trauma to the residual limb that can be caused by falling onto the stump.

After some time you may find that the size of your residual limb stays the same without the use of the shrinker overnight it is reasonable to discard its use at night if this is the case.

How long will I have to wear my shrinker / cast for?

In the initial stages of rehabilitation a rigid cast will be constructed for you. This will protect the residual limb and help to shape the limb in order to fit a series of prostheses. A shrinker will be supplied within the first few months of rehabilitation and will help to maintain the size and shape of the residual limb. Either of these devices should be worn at times when the prosthesis has been removed in order to maintain the residual limb volume.

The rigid cast is generally used in preference to the shrinker in the earlier stages of the rehabilitation process and is replaced at a later stage with the shrinker. The shrinker will be used in this fashion for at least the next 3-6 months. You should discuss the wearing of these devices with your physiotherapist if you have any queries.

Can I shower in my artificial limb?

In order to maintain the hygiene of the residual limb it is important for you to remove your prosthesis when showering or bathing. This will also give you an opportunity to observe the residual limb for wounds or pressure areas.

Will I walk again?

The majority of amputees will receive a prosthesis and be able to walk. There are many factors which will dictate how well or how far you are able to walk which include the level of amputation, pre-existing health problems and age. Amputees face a long process of walking re-education once they have been fitted with a prosthesis for some this will be a difficult and frustrating period of time. Your pattern of walking will be different from your previous abilities walking requires more energy, and places different stresses on your body as an amputee. For some, these stresses will be too difficult to cope with and you may decide that walking with a prosthesis is not possible there are a number of mobility options for people not wishing to walk using a prosthesis (e.g. wheelchair, scooter). This should be discussed with one of the health professionals looking after you.

Will I be able to drive?

Amputees are capable of driving a motor vehicle. For some this may be as simple as reporting to the Road Transit Authority to have your license endorsed. Others may have to have their vehicle modified in some way e.g. left foot accelerator, or hand controls and a spinner knob.
Returning to driving should be discussed with your rehabilitation consultant. When determined to be necessary, a referral will be made to the Driver Assessor Occupational Therapist.

Will I need to have my house altered?

Home modifications may or may not be required for you to return to your previous home. This will depend on your level of mobility and ability to access the house inside and out. A home visit with the Occupational Therapist will help determine if there are any changes that need to be made to the house as well as help to set goals regarding the level of mobility you will need to achieve in order to manage either independently or with help in your home.

Will I be able to return to my former activities?

In many cases you will be able to return to your previous activity levels however, the way you can manage these activities may be slightly different. Gradually, you will be able to work out the best way for you to accomplish these activities. If you are returning to work, the occupational therapist may discuss with you and your employer and modifications to the environment or work duties to assist you. A referral to a more specialist service may also be required.

What about sporting activities?

The Paralympics display the elite level of sporting feats that can be achieved by amputees. Though there are very few that can reach these levels, there are a number of sports and leisure activities that are within reach. Talk to the physiotherapist about your aspirations and sporting pursuits.

Limb Pain, Phantom Pain and Phantom Sensation

Pain is a predictable consequence of any surgery or trauma to the body. In the case of the amputee, there are several sensations that you may experience.

PAIN IN THE RESIDUAL LIMB

You will inevitably get pain in the residual limb following your surgery in the acute stages this should be well controlled with pain relieving medications. Other contributing factors to the level of residual limb pain that you may experience:

- **Swelling (oedema)** this will increase the tension on the surgical wound as well as the pressure within the residual limb.
- **Infection** this will inhibit healing as well as produce toxins that transmit messages of pain to the brain. Infection will also cause swelling and inflammation that contribute to pain.
- **Trauma to the residual limb** a fall or knock on the residual limb can not only cause greater pain to an already sensitized limb, but also damage the adjacent (bruising, bleeding) and even cause the wound to break down. It can and should be avoided at all costs as rehabilitation will be considerably delayed.
• Pressure areas as you progress to using a prosthesis and weight-bearing on your residual limb, care must be taken to avoid stress on areas of the residual limb that are intolerant to pressure (i.e. bony prominences).

• Neuromas These usually occur in the later stages of the rehabilitation process. It is localized pain in the residual limb and has a sharp shooting quality that can be brought on by light tapping.

• Bony spurs These can develop in the soft tissue of the residual limb and cause pain when placed under pressure. They can be diagnosed by a simple x-ray and may require a small surgical procedure if it significantly affects your ability to manage and use a prosthesis.

PHANTOM PAIN

Any pain that is experienced by the amputee in the amputated limb is referred to as phantom pain. It can range from severe electric shocks to a mild ache. Many amputees experience these pains but are reluctant to discuss them with others because of the reactions they may receive (¶ people will think I’m crazy if I tell them my leg is paining me when it isn't there!) . This type of pain is experienced by the majority of amputees and should be acknowledged. In some cases this may resolve over time but can return periodically if you are feeling unwell, stressed or overtired.

There are a number of ways that phantom pain can be treated and reduced. There are medications that can help anti-depressants and drugs used to treat epilepsy by dampening down the nerve activity and have the added benefit of promoting sleep. Other treatment such as transcutaneous nerve stimulation (TENS) helps to block the pain transmission and is an important local management treatment for your residual limb. (See your Physiotherapist for this.)

Wearing a wool sock, shrinker, rigid cast or prosthesis can reduce the severity of phantom pain. Other things that you can do to minimize your phantom pain are:

• Massage and touch the residual limb
• Hold or scratch the missing limb or prosthesis
• Put your prosthesis on and start walking!

Your local doctor or rehabilitation specialist should be consulted if you have ongoing issues regarding phantom pain or sensation.

PHANTOM SENSATION

Phantom sensation is different from phantom pain in many ways. There is no pain associated with the limb but you may feel a wide range of odd sensations in the absent limb such as:

• Telescoping the foot feels like it is closer to the end of the residual limb than it normally would have been
• Twisting of the limb and digits
• Itchy toes
• Cold foot
• Movement of the limb
The treatment for phantom sensation is as for phantom pain however there is less emphasis on the medication approach to decreasing phantom sensation.

5. ELSIE’S STORY

A few years ago I had an amputation of my right leg below the knee. I guess it all started a long time before that because I used to be a smoker for many years and was told by my doctor that this was one of the reasons all of this happened to me. My husband, he died about 20 years ago from lung cancer and my daughter encouraged me to give up after that. Anyway, I used to get these awful cramps in my legs which started happening when I was on a long walk so I used to stop and have a sit down. Then it got worse so that I ended up needing to get my daughter to run me down there in the car or just get the few things I needed herself. Eventually I went to the doctor to find out what to do to fix it and he referred me to the specialist.

This is where everything seemed to go pear shaped. They did a few tests on my legs and found that the blood vessels were blocked. The specialist said he could try to open up the blockage or bypass it but he matter-of-factly said that I would soon need to have my leg off. He had me sign papers admitted me to hospital straight away and said he would do what he could, and then there I was sitting in my room all alone contemplating what was going to happen. It’s a terrible shock for a lady in her 80’s I’ve managed on my own now for so many years and things were about to drastically change.

The next week or so are a bit of a blur but I’ve pieced together a few things by what various people have told me. I remember waking up in recovery for a moment, very groggy, and someone telling me they had to take the leg below the knee. Well the tears started and I went back to sleep for a while. Next thing I know I’m on the ward and the nurses are coming in every few minutes to fix a beeping machine or take my blood pressure or ask me how my pain was .. I’ve got a terrible pain in my foot I’d say to them and they’d say Oh that’s the phantom pains .. we’ll give you something for that.

And I’d be thinking what’s all this about phantom pains, it’s me foot.

After a day or so I woke up a bit and staff started sitting me out even though I was still a bit sleepy. My leg was still sore, especially the stump and my foot that wasn’t there. I remember first seeing the leg when the dressing was taken off, well I couldn’t really bear to look too much it looked really red and raw and scabby. A big group of people, turned out to be the doctors, came in muttering to themselves, asked me how I felt and then looked at my leg saying Hmmm. They rattled off a whole lot of gibberish and then said they’d see me soon and that everything was going OK but it was a little bit infected. Next thing I know I’ve got someone trying to use me as a pin cushion putting drips into me. SO they gave me antibiotics, they gave me diarrheal and affected something else somehow so they tried something different and gave me fluids because I dehydrated or something .. well you get the gist of it anyway. Added to that, there were 500 different doctors, nurses and therapist coming in to see me and give me information and look I was just too tired to take it all in or do anything.

I went to the rehab hospital after a while which gave me a bit of a lift. At least by that stage I had all the drips and drains out and I was feeling a little better,. There seemed to be a lot less tests but a lot more hard work. Everyone was making me do things for myself and here I was a sick and frail old lady I guess it was all part of the process of getting better because I started feeling a little stronger and more able as the
days went on. The wound on my leg was still pretty awful and all the staff said it going to take a long time to heal.

Therapy was tortuous but made me stronger each day. There were people that gave me exercises and helped me walk, others that counselled me and then there were some that looked at the way I was able to manage things like bathing and toileting. All I was interested in was getting a leg and trying to walk but unfortunately the wound continued to delay this. It took at least 2 months before I was fitted for a leg; it was very heavy and painful to put weight on and walk. Here was I thinking all I needed was the leg and I’d be right and ready to run but, to my disappointment, I had to learn to walk all over again. It took a long time to get the leg adjusted so that the pain was minimal and also to get my confidence and balance back on the leg. To this day I still need a stick in the house and often I’ll use my walker if we go out to the shops. I’ve ended up needing 3 or 4 legs up till now and everyone has felt a little different.

I guess I’m lucky in a way. My daughter is very helpful to me ferrying me to all the appointments and shops that I need to do to. I eventually got home but it took a lot of hard work. I had to swallow my pride and get some changes made to the house and accept some service to do the household chores in order for me to cope at home- there was a therapist who had looked at the house to make sure I had all the equipment I needed to manage.

The most difficult thing was that first week at home. I was able to look after myself OK but here was a sense that I was very vulnerable. I had spoken to a therapist and an amputee visitor in the hospital regarding my feelings towards going home the amputee lady was able to tell me about her experiences which shed a bit of light on what I might go through I she was pretty right.

Losing my leg has had a great impact on my life. After being in pain and spending my time crying and feeling sorry for myself, I feel it’s great to be alive. Every day is a bonus. It’s not worth worrying about what might have been. I enjoy now. In my mind I can do anything but in reality not all things are possible. There are some limitations but these are because of the vascular disease in my other leg and the arthritis in my shoulders, elbows and hands. As far as my prosthetic leg is concerned most of the time it’s very comfortable. I used to spend all day in the garden .. no more. I can’t do any kneeling jobs anymore. I can’t clean the bath or shower either.. what bad luck! One more thing I can’t do. I can’t always work out how many socks or what combination I need straight away. My stump is comfortable till I start walking and then it hurts so it’s back to the drawing board till I get it right.