

Queensland Artificial Limb Service



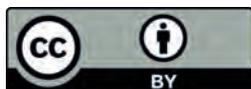
Information for people living with amputation

2017 Edition



Information for Amputees

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For more information contact:

Queensland Artificial Limb Service, Department of Health, PO Box 281, Cannon Hill QLD 4170, qals@health.qld.gov.au, phone 07 3136 3660.

Information for People
Living With Amputation
Part C

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Terminology used:

This book takes a common language approach, the use of “amputee” and “stump” were approved by Queensland amputee support groups.

All exercises and health advice presented in this book should be viewed as general information and not a substitute for medical advice. Individuals must seek their own medical advice before undertaking any of the exercises or health advice in this book.

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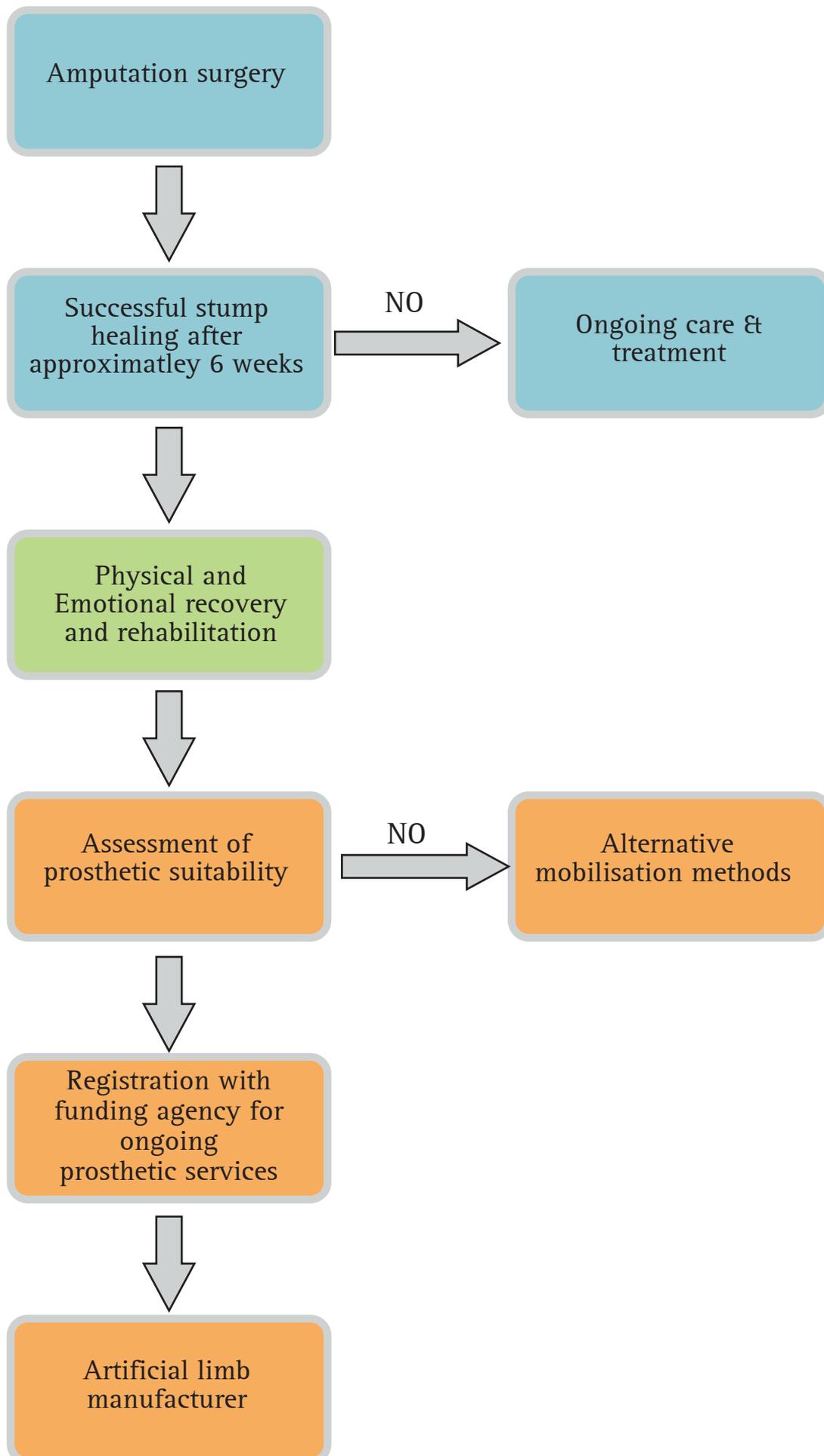
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The amputation and prosthetic pathway



Osseointegration

In this section

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2. Advantages of osseointegration
3. Disadvantages of osseointegration
4. Who can have osseointegration surgery
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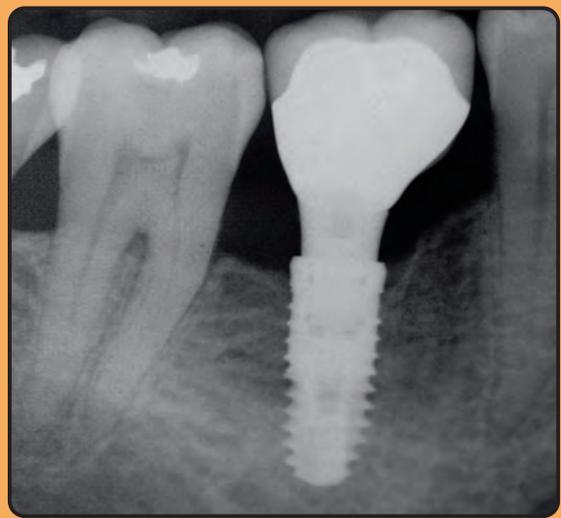
Osseointegration

A relatively new prosthetic procedure is now available in Australia, called 'osseointegration' the prosthetic limb is held in place by a medical implant that protrudes from the stump instead of a socket. The surgery removes many negative issues associated with socket use. The following information is a brief guide to the procedure and who is suitable to undergo it.

Osseointegration replaces a traditional prosthetic socket with a bone implant that protrudes from the skin for a prosthetic limb to attach to. The technique has been used effectively in dentistry since the 1960s as an alternative to dentures. In the field of prosthetics it has been used for many years in facial reconstruction to secure prosthetic ears and noses, however, it was not until the 1990s that prosthetic limb implants were seriously investigated. In Australia, the procedure has been performed on a small number of amputees in recent years. A basic explanation of the procedure is as follows.^(1,2)

In the first stage of surgery, a titanium implant is drilled into the weight bearing bone of the stump. This is a tube that the prosthetic connector (abutment) will fit into later. This implant is completely internal and titanium is used because bone will grow on it creating a solid anchor, unlike other metals which bone will not anchor to.^(1,2)

Once the implant has fused to the bone the stump is opened and an abutment is fastened into the implant. This abutment will protrude through the skin and the exposed end is shaped in such a way as to lock onto a prosthetic limb. The wound is then closed with careful attention paid to the area where metal meets skin so that infection risk is minimised. This wound effectively remains open where it meets the abutment and provides a passage for bacteria to enter the body, making wound hygiene very important. Once the wound is sound the recovery process can begin.⁽¹⁻³⁾



Osseointegration is commonplace in dentistry as shown in this x-ray. Osseointegrated limbs 'scale-up' the technique. Image courtesy Wikimedia Commons

During recovery, the patient needs to build up gradual weight bearing strength until the implant can hold weight exceeding the patient's bodyweight. During this period the wound must be monitored carefully for signs of infection. This period may involve revision surgeries and it is not uncommon for the process to take some time. Once recovery is achieved a prosthesis can be fitted.^(1,2)

Advantages of the procedure

- The amputee can 'feel' what kind of surface they are walking on. This reduces fall risk.
- As there is no socket skin breakdown and sweating are not issues.
- The procedure works on short or very scarred stumps. Traditional sockets are difficult to fit on these types of stump.
- The prosthesis can be worn for many hours, in most cases all day.
- Donning and doffing the prosthesis is fast and easy.
- There is a return to a greater range of natural movements making everyday activities such as driving much easier.
- Sitting is more comfortable as there is no socket rim pressing into the thigh.⁽¹⁻³⁾

Disadvantages of the procedure

- High impact activities may result in a broken femur or damaged implant.
- If the implant fails or becomes chronically infected then amputation of the affected implant and bone may be required.
- Infection risk remains high where the abutment and skin meet and must be monitored daily. This is because the exit point remains an open wound permanently. Wound leakage may be an issue.
- Component failure may damage the abutment resulting in the surgery needing to be redone.
- The procedure is not a cure for gait problems and those who have undertaken the procedure may experience an unnatural gait.
- The initial cost outlay is expensive.⁽¹⁻³⁾

Who can have the surgery?

Suitable candidates must be reasonably fit, healthy and prepared mentally to accept the risks of the procedure. A surgery candidate needs to be at low risk of complications in healing. Amputees who were in accidents are good candidates as they usually have good physical health and adequate blood supply to the stump. Traumatic amputees often have very scarred stumps from limb salvage surgery making it difficult to fit a traditional socket.^(1,2)

Prospective clients are screened and interviewed to determine their suitability. As the rehabilitation process is time-consuming and demanding both physically and emotionally; it is necessary to determine if the client will be compliant with their rehabilitation program. Patients who have had the procedure report that rehabilitation was more intensive than they anticipated but ultimately found the effort was a small inconvenience when compared to the benefits of the surgery.⁽³⁾

Potential candidates must be able to afford the time away from work and home to attend appointments and rehabilitation sessions. Patients may be unable to work for a year or more while they recover.⁽³⁾

Who cannot have the surgery?

Currently, candidate selection is very conservative due to the risks of bone breakage and infection involved with the procedure. Those who have diabetes, vascular disease, osteoporosis, obesity and the elderly are not able to have the procedure. Those who weigh more than 100 kilograms even if they are not classified as obese may be considered unsuitable for osseointegration. Children cannot have the procedure because their bones are still growing.⁽¹⁾

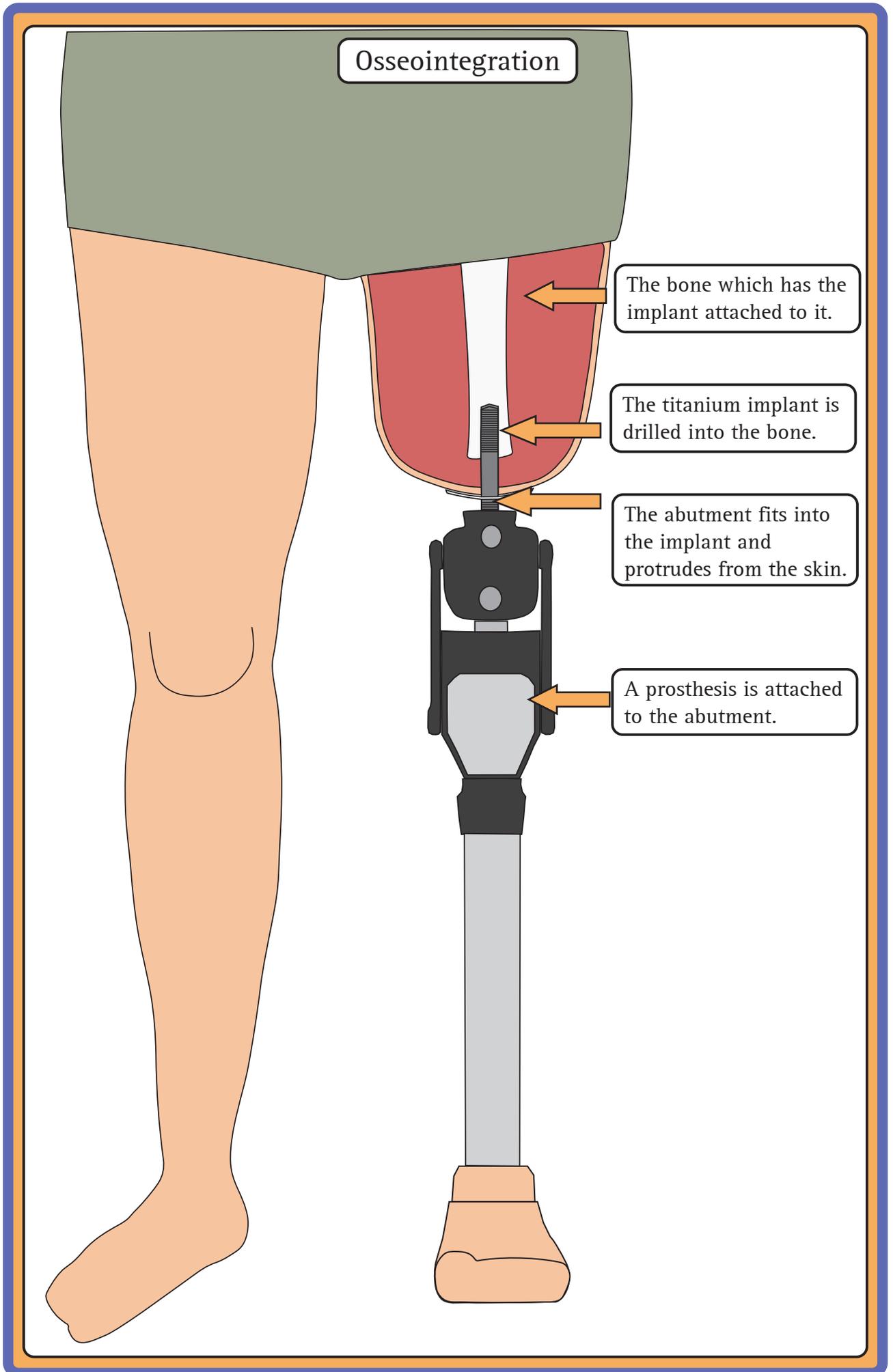
Does it replace a sound limb?

The answer to this is no; osseointegration has many advantages over traditional socket design but it is still a prosthesis with limitations. Candidates who are looking to relieve problems with socket fit and painful walking will find the procedure beneficial. Part of the screening process is explaining the limitations and making sure that potential candidates have realistic expectations about the final outcome.

It is very important for potential candidates to understand that after osseointegration it is not possible to resume all activities due to the risk of medical complications. Those who led a very active lifestyle before amputation may find the limitations on an integrated prosthesis frustrating. Activities such as weight lifting, high impact sports, heavy manual work and jogging will place too much stress on the implant and may cause failure. The risk of infection remains high so communal water such as public pools and lakes must be avoided, however, the ocean is safe due to the salt content.⁽¹⁾

With a traditional prosthesis ignoring the device's limitations can result in broken components, in an osseointegrated prosthesis the result of ignoring its limitations is a broken femur or re-implantation surgery.⁽¹⁾

If you think osseointegration is an option for you discuss the possibility of surgery with your prosthetist and rehabilitation team.



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The future of prosthetics:
bionic and smart limbs

In this section

1. Bionic limbs: Where are they?
- 2: Smart limbs currently available

Bionic limbs: where are they?

Science fiction films and television programs such as the Six Million Dollar Man and Robocop have popularised the idea that severely injured people could be saved and even improved by advances in bionic and robotic technology. You may have seen news or internet articles of amputees with mind controlled limbs and wonder if they are available and how much they cost. You will also have seen high tech robots and wonder why the technology is not being applied to prosthetics.

Bionic prosthetic limbs are limbs that are directly controlled by the brain and nervous system.⁽¹⁾ This is a different realm of technology to 'smart' limbs that utilise microcomputers to mimic a human brain or detect muscle movements to control motors.

When this edition was compiled bionic limbs were still highly experimental with none on the open market. Research into bionic limbs is small scale compared to other areas of neuroscience due to the limited market for prosthetic limbs.

Currently, amputees have to be quite fit and active to benefit from a smart prosthetic limb, not to mention have a source of funding. As many amputees are in the third world the market for high-tech prosthetics is small. Therefore prosthetics does not attract as much research funding and is a late adopter of technology from other areas of research such as robotics.⁽²⁾

There have been vast improvements in robotics and robotic technology but this does not translate into improvements in prosthetic design. There have been several major hurdles limiting the introduction of robotic components into prosthetic design: power, weight, noise and the limitations of neuroscience.^(3,4)

Robot designers do not need to connect to a human nervous system as they can plug the robot into a computer. Robots can be as heavy and noisy as they need to be. A robot can be tethered to a power cable or kept stationary while a human would not tolerate the same inconvenience.⁽³⁾

A bionic prosthesis requires power to run the motors and microprocessors. It is only in recent time that batteries have been light weight enough for a human to wear. Robotic technology has not overcome this problem and the most advanced limbs require heavy use of power (a robotic hand can have more than 20 motors to run). The other issues are battery life and charging. Advanced robots still only have 1 to 2 hours of battery life. If this technology was applied to prosthetics the wearer may be without a limb for long periods while the batteries are being recharged.⁽³⁾

Not only are batteries heavy but a human forearm and hand have 27 bones and 30 muscles that form 18 articulated joints. To replicate these joints not only are batteries needed but also motors and the components to replicate bones and ligaments. While a human arm weighs approximately 10 kilograms; a stump can only tolerate about 3.5 kilograms of weight attached to it, therefore it is difficult to get a functioning bionic arm to be light enough to use.⁽³⁾



Advanced robotic arms such as those on the PR2 are too large and impractical for amputee use. PR2 can't carry more than 1.8 kilograms and only has 2 hours of battery life.

Information: <http://www.willowgarage.com/pages/pr2/specs>

Image courtesy of Wikimedia Commons

Advanced robotic hands have been designed but have to be tethered to processing units and batteries: one example had a processor the size of a filing cabinet. These motors create a level of noise that many amputees would find embarrassing as it draws attention to the prosthesis. ⁽³⁾

Bionic prosthetics have hit a major hurdle in that the technology to build the prosthetic limb is far more advanced than the ability to connect to the brain. Current neuroscience does not have the techniques to connect bionic limbs to the brain in a way that replicates a natural nerve connection. ^(3,4)

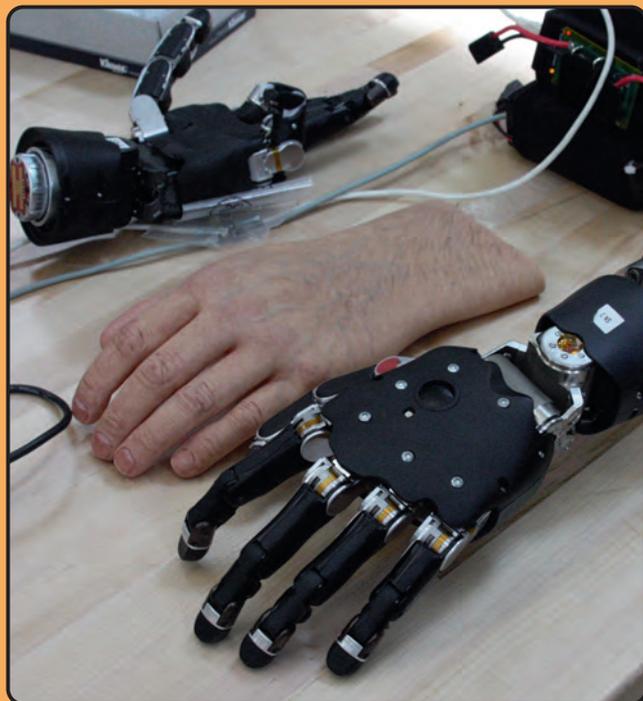
The result of this imbalance is hi-tech prosthetic components that can perform with precision when connected to a computer but become slow and awkward when connected to a human brain.

Connecting humans and computers is of great interest to not only researchers of prosthetics but also researchers into other areas of neuroscience such as spinal injuries and degenerative diseases like motor neuron disease. The availability of human interfaced prosthetics that work with precision and fully replicate human movement is not predicted to be available on the market until at least the 2020s. ^(3,4)



ASIMO made by Honda has advanced 2 legged walking capability. It does not have the backpack for looks: this is where the 7-kilogram battery and computer processor are housed. Its current battery life is one hour. ⁽⁵⁾

Image courtesy of Wikimedia Commons



The American Military is a world leader in advanced prosthetics. The Modular Prosthetic Limb (MPL) pictured above is a prosthetic hand that is controlled by the human brain and replicates a large range of human movement. The silicone cover is exceptionally realistic. At this stage the MPL is experimental.

Information and image courtesy of:
http://commons.wikimedia.org/wiki/File:Flickr_-_Official_U.S._Navy_Imagery_-_The_Modular_Prosthetic_Limb_%28MPL%29.jpg

Smart limbs currently available

As batteries and computers have shrunk smart prosthetic limbs with computer powered 'intelligence' are becoming a reality. When this book was compiled in 2013 smart prosthetic limbs were not funded by government agencies.

Upper arm amputees have the choice of cable controlled arms or myoelectric. Myoelectric arms operate by detecting the nerve signals from flexing muscles. These signals then tell motors to activate and move parts of the prosthetic arm.⁽⁶⁾

Myoelectric arms do not need harnesses and cables so they are more comfortable than a traditional arm. The lack of cables allows a realistic silicone cover to be put on the limb and a greater range of motion. These limbs can also be used on children as young as one year of age. The main disadvantages to myoelectric arms are the cost, the need to be charged and the lack of water resistance. The training process is quite intense as the user needs to learn how to control and flex individual muscles. Not all arm amputees are suitable for a myoelectric arm as you need good nerve signals and stump muscles strong enough to flex.^(6,7)

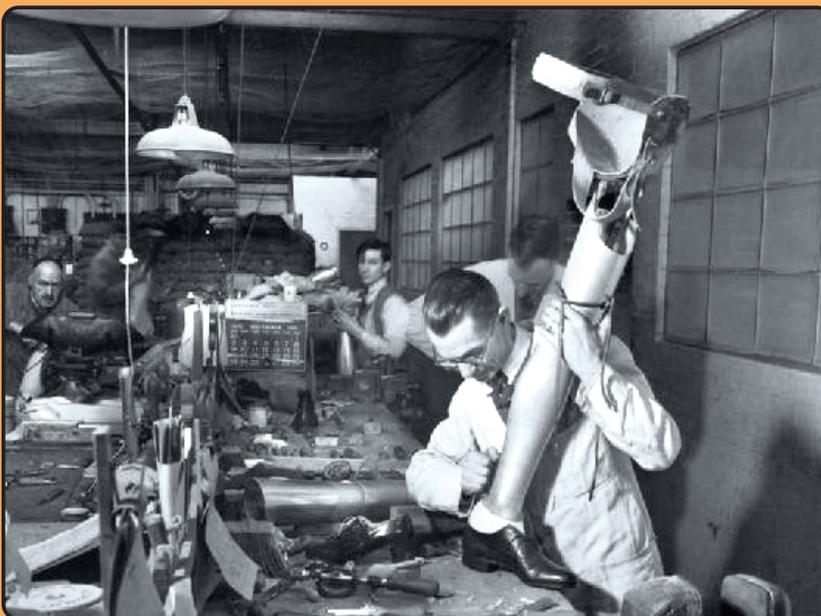
Smart arms and hands are available with a cost in excess of 100 thousand dollars for the most advanced designs. These arms are quite effective, but not yet capable of

replicating a full range of human movement and need to be calibrated to the user.⁽⁸⁾

Lower limb smart technology consists of microprocessor knees with an internal computer to control the knee's movement. The computer connects to sensors that detect how the user is walking and can adjust the knee's movement to suit changes in speed and terrain. Traditional mechanical knees can only move at one speed and are adjusted to the user's most common walking speed. This can be very limiting for active amputees.

Smart limbs are not suitable for all lower limb amputees. To start with there are no smart technologies for below knee amputations; only above knee amputees are suitable. Amputees only benefit if they are very active and have a variety of walking speeds, walk on uneven terrain and need to use steps daily. Those who walk slowly may find the increased speed exhausting. Like myoelectric arms, smart knees need to be charged and cannot get wet. Unlike myoelectric arms, smart knees are not suitable for children: users must be at least 150 centimetres tall to use one.⁽⁹⁾

The latest model smart knees cost over 80 thousand dollars while older models are relatively cheaper at 10 to 60 thousand dollars.⁽¹⁰⁾



Advancement in prosthetic design has been slow, much to the frustration of amputees. This photo of a prosthetist at work is from 1941: the prosthetic limb he has made is very similar to one made today.

Image courtesy of the Imperial War Museum
<http://www.iwm.org.uk/collections/item/object/205198886>

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Information for carers: Stress and health

In this section

1. Becoming a carer
2. The four phases of caring
3. Communicating effectively
4. Stress and respite
5. Future and disaster planning
6. Staying physically healthy
7. Staying emotionally healthy

Becoming a carer

When you become a caregiver it may seem difficult to view yourself in that role. You already have an established relationship with the person you are caring for and now that relationship has changed. While you remain a wife, husband, son, daughter, grandchild, parent; you are also a carer if you:

- Talk to medical staff about the person's conditions and organise their medications.
- Take care of chores, finances and meals for someone because they cannot manage to do it themselves.
- You care for another person without getting paid.

Doing these things may feel to you as something that you 'just do' when a loved one needs assistance and your role as a carer is to be expected. However, officially designating yourself as a carer means that you may have access to:

- Information about your family member's condition and the right to be present during consultations.
- Services such as respite care, a carer's allowance from Centrelink and tax offsets.
- Training on more complicated aspects of your family member's care such as giving insulin injections.
- The right to be involved in decisions on long term care.⁽¹⁾

The four phases of caring

In the earlier section on grief, there was information on the stages of grief, caring is similar in that it also has stages. You may find the stages overlap and some will last longer than others. The shock stage may not occur if the person's health was declining steadily and the carer's role had been expanding over time.⁽²⁾

The shock stage

This is the period immediately after the accident/illness when stress is high and you are coming to terms with what happened. Many people cope well at this stage as you are living on adrenalin and offers of help come from family and friends. It is important to not rush into major decisions

such as giving up your job or selling your home: think through decisions and gather as much information as you can.⁽²⁾

The reality stage

This period is marked by increasing feelings of loneliness, isolation and resentment. The resentment you feel may not be directed at the person you are caring for; it may be directed towards the friends and relatives who are no longer helping or the situation in general. When people outside of the home feel that the crisis is over they will return to their normal lives and activities and think "she/he has it all under control"

As a carer, you are particularly vulnerable to developing depression as you have put so much of your life on hold and you may fear losing your individual identity. This period is when you may settle into routines that are not healthy such as doing tasks late at night instead of sleeping.⁽²⁾

The acceptance stage

You can reflect on your role and are coping with the routine in your life. At this stage, you will find yourself considering your options as you reflect on how much you can do. The person you are caring for may have also come to accept what is happening or become more independent (e.g. they have a prosthesis) While you may have come to terms with your role, be aware of unhealthy behaviours such as thinking you are the only person capable enough to care for your family member and viewing your identity solely through the lens of a carer.⁽²⁾

The end of caring stage

When your role as carer ends through the independence of your family member, the need for nursing care or death; you may struggle with your identity. You had invested so much of yourself in the caring role that now you find yourself lost or isolated. It is important to not rush into decisions but consider what you want to do now: return to work, volunteer, learn something new and investigate how to make it happen.^(2,3)

Communicating effectively

As a carer, you will have occasions when you need to have a conversation that may result in disagreement. The basics of effective communication are levelling, listening, validating and non-verbal communication.⁽⁴⁾

Levelling (the playing field):

Disagreements often occur because we assume people can read our minds or 'between the lines' When you are communicating make sure that you clearly express your needs and feelings.

Listening:

Communicating is more than talking: you need to listen. Pay attention to what the person is saying, clarify you are understanding them and let them speak without interruption.

Validating:

You need to show that you understand how and why they feel the way they do. This

does not mean you have to agree with them. Accept their feelings as truthful.

Non-verbal communication:

When communicating your tone, eye contact, and gestures are the real indicators of how you feel. If your non-verbal expressions do not align with what you are saying the other person will know you are not speaking truthfully.⁽⁴⁾

Other communication tips

- Try to choose a time that will have minimal interruptions and stress.
- Avoid sarcasm
- Stick with the pressing issue, avoid bringing up everything at once or old grievances.
- Don't use 'you always' or 'you never' both of these will make the other person defensive.
- Postpone the discussion if you or the other person are becoming angry.⁽⁵⁾

Using "I" Statements

In this section, there are references to a communication technique called "I statements" This is a way to minimise conflicts and express needs. Using I statements such as "When you x I feel y" instead of "You can't x" is a way of communicating your needs in a way that may reduce conflict. When you express your feelings as if they were a universal fact and not your subjective experience the other person will become defensive as they see your statement as telling them their feelings are wrong.⁽⁶⁾

The following is an example of a conflict without "I" statements. Do keep in mind that this technique is not a guarantee of resolving conflicts but it may help.⁽⁶⁾

Daughter: *Dad you can't live on your own if you had a fall no one would be there.*
Father: *I like this house, I've been there 48 years and I can look after myself just fine.*
Daughter: *Don't be selfish, think about how others feel for once.*

Father: *You're the selfish one, I'm a grown man, you don't make my decisions for me.*
Daughter: *You're so stubborn I can never make you see sense.*

Notice how both people become determined to be 'right' and the conflict grows, hurtful things are said and the original issue is not resolved. Now the conversation with "I" statements:

Daughter: *Dad, now that you are living on your own I am worried about what happens if you had a fall.*
Father: *I've been here 48 years, I need my independence so I don't want to move.*
Daughter: *How can I not worry about you?*
Father: *If you are really worried I could phone you at a certain time each day.*
Daughter: *I think that will work, let's try it for a while and see if it helps me to worry less.*

You will find communicating in this way takes practise but it will become more natural over time.⁽⁶⁾

Stress

Providing care for a loved one can be immensely rewarding but also stressful. It is natural to feel stress; as a caregiver your life changes significantly. Stress can come from different sources you might experience it from one source or many in your role as caregiver. If you can recognise the source of your stress it becomes easier to deal with.⁽⁷⁾

Recognising sources of stress

Physical stress: You are tired, not eating well. The care tasks are physically demanding such as transfers which are causing you pain such as a backache.

Emotional stress: The person may be angry, lashing out or depressed. You may be grieving, guilty or feeling alone and unsupported. You may have drifted away from friends, lack the freedom to socialise or had conflicts with family about the caring arrangements.

Financial stress: You have lost a source of income, your retirement plans are on hold, your savings are dwindling and medical expenses are costly.⁽⁷⁾

Some stress can keep us motivated but too much is bad for your physical and emotional health. How do you know that you are becoming too stressed? The signs to watch for include:

- You have symptoms of depression
- You have anxious feelings and overwhelming worries.
- Minor illnesses take a major toll on your health.
- You are exhausted.
- You are quick to anger and are often irritable.
- You forget things easily or cannot concentrate.
- You have lost interest in hobbies.
- Your weight is fluctuating.
- You are neglecting your own health such as missing your annual mammogram.
- You have recurring health problems like headaches.
- You find yourself needing alcohol or drugs (legal or illegal) to get through the day.⁽⁷⁾

When it's too much

If the stress is too much external care is something to consider. You have options when choosing respite including:

- Residential care, the person stays in a care facility for two weeks or more.
- Respite care: The person has a few days away from home in a care facility.
- Day respite: The person goes to a care facility for the day and returns at night.
- In-home care: a professional carer comes to your home.
- Family arrangements: You arrange informal respite with relatives or close friends.⁽⁸⁾

Not all options are available in all areas so investigate what is available where you are.

When considering respite it is normal to feel guilty and to worry about your loved one leaving your care. Think of respite as helping you to be a better carer by allowing your body and mind to rest. If the person is not amenable to respite try to work out a compromise so that you have some time for yourself on a regular basis. You can explain that you need the rest so that you can continue to care for them at home as long as possible and you are not giving up or abandoning them.⁽⁸⁾

Often we are fearful of respite because we do not know what is involved. If you have seen reports on sub-standard care facilities or abuse by carers; you or your loved one may be fearful. You may also be of an age where you knew of somebody in an 'institution' and how depressing and restricted those places were. A good respite facility will allow you to visit, take a tour and ask questions. The practice of strict control over clients is long gone, clients are encouraged to maximise their independence and make choices. You could look into short stays to assess the facilities before committing to longer care.⁽⁸⁾

Shorter respite can help ease the transition to longer respite for both of you, helps you choose a good facility and give both of you peace of mind by knowing an option is there if you cannot be a caregiver because of injury or illness.⁽⁸⁾

Tips for making caring less stressful

- Think over the big decisions before acting. Never sell your home, quit your job or move a family member into your home until you have researched and evaluated your options.
- Set limits. You don't have to do it all. Look for ways you can delegate tasks.
- Consult with other family members. Discuss their feelings on how your family member should be cared for.
- You may be eligible for a carer's allowance, tax offsets and funding for equipment or respite services. Talk to Centrelink, your occupational therapist, doctor and the ATO about what you may be eligible for.
- Plan for the future. Investigate the prognosis for your family member's future and think about your own future. Let go of guilt and make the decision for assisted care when it is needed.
- Don't give up things you enjoy. Keep involved in some of your favourite activities as it keeps you from feeling overwhelmed and isolated.
- Make a list of the most important tasks you need to do each day.
- Be willing to change what you are doing when something goes wrong.
- Know where to find all the financial, legal, and medical papers.
- Make lists of emergency phone numbers, medicines, and other important information. Post these lists in places where people will see them.
- Know your limit. Be willing to say "no" when one more task will cause you too much stress.⁽⁹⁾

Future and emergency planning

As a carer, you will need to undertake long-term planning as you may not be able to continue caring due to illness, injury, death or natural disaster. The following are some ways to minimise the stress of a change in a loved one's care.

Organise legal affairs for both of you including wills and powers of attorney. You both need to have directives covering financial responsibilities and health care. Decide how your loved one should be cared for if you cannot do it anymore.⁽¹⁰⁾



Don't give up activities you enjoy.

Image courtesy of Wikimedia Commons

Organise your finances to cover the costs of outside care. Consider the future costs of external care and have contingency money for difficult times.

Imagine you have gone to the bank where you trip over, hit your head and are taken to hospital while unconscious. Would anybody know there is a person reliant on you at home? As unpleasant as it is to think about your own incapacitation or death; carry emergency details with you so that medical personnel know that someone is in your care.⁽¹⁰⁾

Decide with your loved one on an emergency carer. You may need to have a surgical procedure or attend to a family issue such as an interstate funeral. Make sure the emergency carer knows the reality of what is needed from them and is willing to do it. If you do not have someone know what your local respite options are.⁽¹⁰⁾

Is your home at risk of floods, cyclones, severe storms or bushfires? Plan how and when you would evacuate and where you could go if ordered to leave your home on short notice. Plan how you would transport your loved one's aids, equipment and where to get needed medications. Consider the risks of being without electricity or clean water for days after a natural disaster.⁽¹¹⁾

Staying physically healthy

- Eat a healthy diet and drink plenty of water and other liquids without alcohol or caffeine.
- Splurge sometimes by eating “comfort foods” These include pasta, potatoes, and other high-carbohydrate foods which can help you feel better when stressed.
- Make extra portions when you cook. Freeze the extra in meal-sized containers which you can later heat up.
- Let someone else cook. Ask if any local groups, such as “meals on wheels,” offer free or low-cost meals to older people and those with disabilities.
- Try to go to bed and wake up at about the same time each day.
- Keep your bedroom cool.
- Listen to quiet music or relaxation tapes to lull yourself to sleep.
- Exercise during the day, not at bedtime.
- Do not drink caffeine or alcohol before bed.
- Go to the doctor for check-ups.
- Be active each day. This may be walking, swimming, gardening or doing other activities with a friend.
- Stretch your muscles to help your body relax and stay strong.⁽⁹⁾

Staying emotionally healthy

When friends and family members ask how you are, tell them. This includes talking about your feelings and what you find hard about being a caregiver.

- Write in a journal. For many people, this is a good way to express feelings.
- Visit with friends and family rather than always being alone.
- Ask for help when you have problems, concerns, or do not know what to do.
- Laugh. Maybe you and the person you are caring for can both enjoy laughing at funny books, websites and TV shows
- Calm yourself by taking deep breaths, doing yoga, or meditating.
- Reach out. Studies show that people often feel better when they hug someone or pet an animal.
- Take time for yourself. Do something you enjoy such as playing music, reading, or being outdoors.
- Get help when you need it. Tell your

doctor or healthcare provider if you have signs of depression. These signs include having no appetite or trouble sleeping, feeling cranky, crying a lot, or having trouble thinking or remembering.

- Do not deal with your feelings by drinking alcohol, taking drugs or working too much
- Take a break from being a caregiver. Ask family, friends, or healthcare workers to help so you can take some time for yourself.
- Do something you enjoy at least once a week.
- Give yourself a treat from time to time.
- Do activities that can be quickly stopped and started again. These might be reading, doing crossword puzzles, and playing games like chess or drafts.
- When people offer to help, let them. You have nothing to feel ashamed or guilty about.
- Have lists of small chores and jobs that others can do.
- Ask people to do what they are good at. For instance, someone who likes to cook can make you some meals. Or someone who likes to garden may want to mow your lawn.
- Join a local caregiver support group to meet others facing the same problems as you.⁽⁹⁾



Try hobbies that can be stopped and started when you have time to spare.

Image courtesy of Wikimedia Commons

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Caring and relationships

In this section

1. Caring for your partner
2. Advice for amputees
3. Caring for your parents
4. Caring and the extended family
5. Recognising when someone needs home help
6. Children with limb differences
7. Teenagers with amputations

Caring for your partner

When your spouse becomes ill or disabled both of your lives will change. As a couple, you may have considered what to do in your old age but an amputation may happen due to trauma, cancer or infection at any time. Day to day living may put a strain on your relationship because of the pressures of caring, child raising, the change in financial situation and loss of intimacy.⁽¹⁾

Your partner will be dealing not only with amputation but also the loss of their independence and dignity when you need to assist them with self-care. These losses can hit self-esteem badly and your partner may lash out at you. Often as the spouse, you will bear the brunt of the anger because your spouse knows it is 'safe' to be angry with you. You can dismiss the occasional outburst as something that happens and brush it off but continual aggressive behaviour should not be tolerated.

Advice for amputees

Your partner may be caring for you in a medical sense but do not forget that they too are an adult with emotions and needs. The following are tips for amputees who want to improve their relationships with their partner-caregiver:⁽³⁾

Take time to examine your feelings and be prepared to talk about what you need and how these needs can be met. Actively listen to your partner's feelings and try to understand their point of view.

Your partner cannot read your mind so always be specific in your requests for assistance. Treat them with the same kindness and respect you showed to them as a romantic partner.⁽³⁾ If you need to discuss issues try effective communication techniques to reach a compromise. Avoid criticism instead offer suggestions.

Your relationship as partners needs to be nurtured. Interact in ways that put the romantic relationship first such as a dinner out or a movie night at home. Small gestures of affection and gratitude are always appreciated. Physical contact such

Communicate. You and your partner need to be able to talk about feelings, needs and concerns without it becoming adversarial. Try to avoid accusations show empathy and do not assume what the person is thinking. The goal of effective communication is to come to mutual agreements.^(1,2)

Independence. Your partner can still do many things and should be active in household decision making. Do not martyr yourself and do not micromanage: both build resentment on either side of the partnership.⁽¹⁾

Decide together what you as a carer will do and not do. You do not have to do everything and by taking on too many responsibilities you lose time to be partners and time for yourself. Delegate tasks to someone else or put them to one side when possible.⁽¹⁾

as hugs is needed to nurture your relationship.⁽³⁾ Discuss how sexual needs will be met in a mutually respectful way.

Ask what your partner needs from you. You can provide emotional support for your partner and try to be as independent as possible. If you are worried about them tell it is alright to get help and allow them some respite time. Healthy relationships need alone time. Try to find ways to give your partner time to themselves on a regular basis.

Make your expectations clear about how much care you need. If your partner has worries about how you are performing tasks listen to their concerns. Your occupational therapist could assist in making everyday living tasks safer for you.⁽³⁾

Accept the possibility of needing outside help. If your partner brings up the issue, listen, and understand why they have thought about this. If you think it may help the relationship to have outside help, then discuss your feelings with your partner.⁽³⁾

Caring for your parents

The following information is for the 'Sandwich Generation' those people in their 50s and 60s who are caring for their parents and children or grandchildren. As a sandwich carer, there is a good chance you:

- Are still in paid employment.
- Have adult children living at home or you financially support your adult children in some way.
- May have school age children of your own or care for your grandchildren while their parents work.
- Are concerned about your financial future in retirement and cannot afford to retire yet or you need to work past 65 years of age.⁽⁴⁾

Carers in this situation may find they have stress coming from multiple sources such as:

- How to split time between family and work.
- Mediating conflicts between your children and parents, for example, an older parent who does not believe in adult children living at home.
- Having no time for rest and certainly no time for hobbies.
- Guilt because you feel that you are not giving everyone enough.
- Financial stress due to using all your carer's entitlements, having to take unpaid leave and needing to use your retirement savings to help others.
- Worry that all of your leave from work will cost you your job and finding another job will be very difficult.
- Worry that neglecting your spouse may cause a rift in your relationship.⁽⁵⁾

When you find yourself between two generations there are some things you can do to lessen some of the stress.

Preserve your assets. Do not use your retirement assets to fund the needs of others. Use your parents' assets to fund their care and if they have none look into as many funding options as possible. Adult children should not be reliant on you for money or free full-time childcare; if they are working they should organise their own financial affairs.⁽⁶⁾

Don't neglect your marriage/partnership. For those who are married, it is important to keep the relationship healthy. Allow yourself time with your partner and work through any issues that arise together.⁽⁷⁾

Adult children are adults. If you have adult children at home they should be contributing to the household. Even if they have little money they can cook meals for the family and do their own cleaning, washing and ironing.⁽⁷⁾

You are all adults. Avoid treating your parent/s as another one of your children. Unless they are mentally incapable of making decisions they have the right to decide on their own care. If their ideas are not feasible, negotiate and try to reach a mutual agreement.⁽⁷⁾ In the same vein do not allow your parents to treat you as a child or make unreasonable demands.⁽⁸⁾

Look into ways to keep your parent independent. If they can live in their own space and have control over their lives they will have better health overall. If you take over they may become resentful and stubborn or on the opposite end of the spectrum, become very needy.⁽⁸⁾

Don't assume that living together is the best option. If your parents live on different schedules or have different lifestyles, living together may be a nightmare for all concerned. Don't assume that assisted living is out of the question or obey siblings who say it is unacceptable without talking to your parents. Your parents may be open to the idea but you won't know if it is never discussed.⁽⁹⁾

It is OK to admit you are not cut out for it. We all have different personalities some of us are not suited for a hands-on caring role. If you think caring would cause lingering resentment or too much stress for you, do not hide it, instead plan how your parents can receive quality care that does not rely on you being the sole caregiver.⁽¹⁰⁾

Caring and the extended family

You will have to deal with other relatives when it comes to caring for a parent or grandparent. You may have found yourself caring in the role of carer because you are the closest or you are the one “with the time to do it” For many carers this is a source of frustration as there is always at least one relative who does not do their ‘fair share’ but has opinions on how things should be done. On the other hand, a relative (or yourself) is not in a position to contribute equally for legitimate reasons but wants to help where they can. The following list outlines why some relatives can not/will not care equally.⁽¹¹⁾

They don't have the time

They may work long hours or be a shift worker. They may have grandchildren to look after or are already a carer for a disabled child or in-law. If the issue is time they could contribute financially to respite care. If they don't have enough money to fund respite care a quick visit for the carer to take a break on a regular basis is appreciated.⁽¹¹⁾

They don't have the money

If they live far away they can use the internet to undertake tasks such as paying bills or taking care of your parent's taxes. They could even talk to your parent over a webcam or the telephone while you take a break for coffee and read the newspaper. If they live nearby they can contribute in “sweat equity” by doing some gardening or cleaning on a regular basis. They could visit regularly and stay with your parent while you have a break or go out for errands.⁽¹¹⁾

They can't bare to see them in this condition

This excuse is probably the most frustrating as you, the carer, take no pleasure from seeing them in this condition. Accept that you have stood up to this difficult challenge whereas they have not. Try to have them help remotely such as organising appointments and paying bills. If you are upset by your parent's condition still go and visit even if it distresses you, if you had a good relationship they will be missing you greatly.⁽¹¹⁾

Your parent may be the cause of the issue

Is your parent telling a relative that they are fine or help is not needed? People may divide their relatives consciously or unconsciously by telling different relatives different versions of the truth. They may feel that one of your relatives has enough problems already or maybe someone is easily frustrated and your parent prefers they were not involved in their care. Try to open up communication with your siblings so that everyone is fully aware of the situation.⁽¹²⁾

Old hurts have resurfaced

Sometimes old childhood grievances resurface. If a person did not feel loved or accepted as a child they may have difficulty caring for the person who hurt them. Often they will be waiting for an apology but it will probably not happen. You will have to accept that your sibling has to come to terms with their past before they can help your parent.⁽¹³⁾ If you have a good relationship with your sibling find ways for them to help you and relieve your stress such as making some frozen meals for you or joining you for regular walks.

Mum/Dad is bad tempered or abusive

Caring can be very difficult if your parent is a bad tempered person as part of their personality or due to dementia. Your relative may prefer to provide emotional support to you or financial support for respite or home help if they cannot cope with bad tempered outbursts.⁽¹³⁾

They are banking on an inheritance

Sadly money can bring out the worst in some people. You may have relatives who are more concerned about their share of the inheritance than providing quality care for your relative. If they are adamant that no money be spent to preserve an inheritance the best solution is to argue for your parents' interests firmly without aggression, hire a mediator if needed. If you hoped for an inheritance let the idea go and provide for your parents now.⁽⁹⁾

When dealing with relatives the key is to communicate, you may be the primary carer but others will expect to be involved in the decision making. Include all concerned parties in the decision making process and do not withhold information. When you are communicating with your relatives you may need some ground rules such as not bringing up past events or no butting in. Try using “I” statements as discussed in the general care section.^(14,15)

The first part of resolving issues is coming to an agreement about what your parent/s’ needs are. Often you agree on what your parents need but it is how to meet this need that causes conflict. For example, if your parent lives in a two storey house and has difficulty using their stairs the following may happen:

- One relative wants to sell the home and buy into a care facility.
- Another wants your parent to live with them because they don’t like nursing homes.
- Another wants to install a bathroom downstairs and turn the dining room into a bedroom.
- Another wants their university aged child to live with grandma/pa so that they can help them in exchange for no rent.
- Another wants to install a stair lift.

Try to solve your parent/s’ needs in a way that can address the concerns of others. You all might agree to install the stair lift as that is the simplest solution, however, you will regroup if it is not working out.^(13,14)

Look at each relative’s situation and decide together the best ways that each person can contribute. Decide who can contribute more in time and who can contribute more financially.⁽¹⁴⁾

Make direct requests and be open about what you need as a carer. Do not use hints or assume people know what you need. Plan early, don’t wait for a crisis to occur or emotions will be high and everybody will be stressed.⁽¹⁵⁾ Involve your parent/s if they are capable as it is their life and they should play a role in making decisions.⁽¹⁾

If you cannot agree or your family dynamic is not harmonious enough to remain civil, an objective third party such as a social worker or family counsellor could work with your family. You could hire a professional mediator who specialises in elder care.^(13,16)

Accept things will not always be fair. If you are silently fuming over those who have not contributed ‘fairly’ you are only adding stress and anger to your life. Make sure your expectations are realistic and remember that accepting a situation does not mean that you like it.⁽¹⁵⁾

If you find that you are fighting over trivial things there is probably a big issue you are avoiding. Avoid drawn out discussions or arguments on matters that are not worthy of that amount of time. Try to solve the big issues before you discuss the details.⁽¹⁷⁾

Recognising that someone needs home help

We all want our loved ones to stay independent and live on their own for as long as possible but it is not always possible. If you notice an elderly relative having difficulty with self-care it may be time to arrange help. Signs to look out for include:

- The house is not being cleaned.
- The yard is becoming overgrown.
- There is unopened mail building up.
- Bills go unpaid.
- Appointments are missed
- Rubbish is not being taken to the bin or they begin to hoard trash.
- There is a smell of urine either in the house or on the person.
- Food is spoiling and not being eaten
- Your parent has body odour because they are not bathing regularly
- They are unsteady on their feet
- They have bruises or other marks that indicate they have had a fall.
- They are not managing their medications by forgetting to take them or taking too much
- Familiar activities are difficult for them
- They have stopped participating in activities they once enjoyed.^(18,19)
- Pets are unkempt or pet waste is in the house.

Children with limb differences

The birth of a child with a limb deficiency can be a traumatic and confusing experience. It is normal to feel sadness and a sense of loss, particularly after the excitement and anticipation of a pregnancy in which everything seemed to go smoothly. It is reassuring to know that most children with a limb deficiency become very skilled at using their affected limb. They learn methods of completing tasks that would appear impossible and become adept at most activities they choose to attempt.⁽²⁰⁾

It is important to focus on their strengths and encourage their independence in daily life. Children whose amputation occurs after birth will also adapt to losing a limb although they may require support in relearning their independence.⁽²⁰⁾

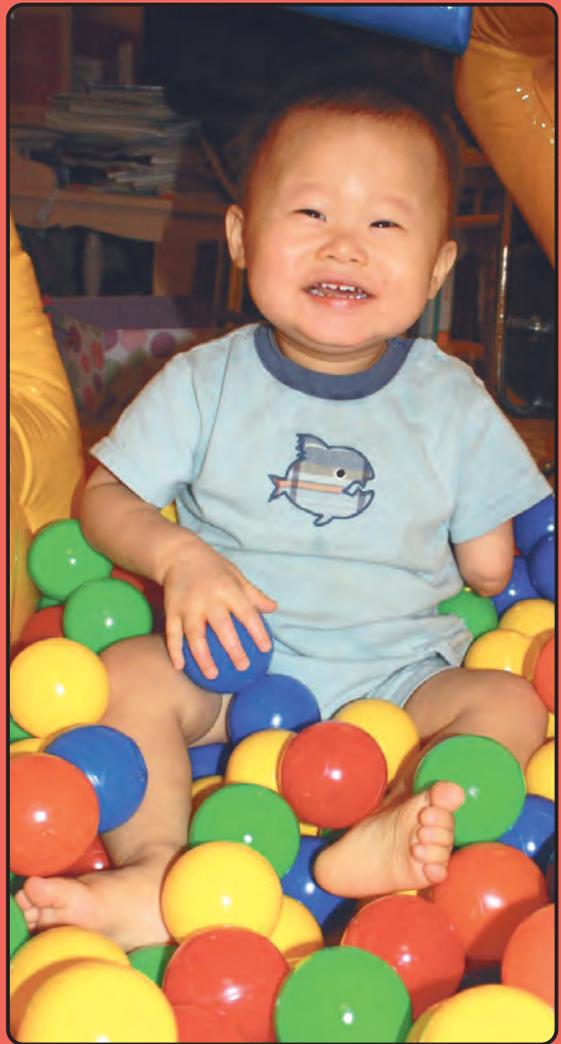
Every parent wants their child to be accepted by friends, relatives and classmates. You need to learn how to respond to questions, concerns and curiosity about your child's limb difference. Most people who ask questions mean well and brief answers are enough. Your child will learn from your example how to answer questions and react to new people and situations. Children with limb deficiencies are usually well accepted by their peers and are able to join in the usual activities.⁽²⁰⁾

All children develop at their own rate with their own strengths and weaknesses. The limb deficient child will also find their own way through the normal developmental milestones, and play and discovery should be encouraged.⁽²⁰⁾

Upper limb amputations

Children with a deficiency of their upper limb will become very adept at most tasks. Occasionally there will be an activity that is simply not possible without some form of assistance, for example cutting food. An occupational therapist can assist your child and determine which devices can assist with independence.

Most children with an upper limb deficiency are potential prosthetic limb users. In reality, children will find it easier to perform



Children born with a limb difference will discover their own way to achieve developmental milestones through play and exploration.

Image courtesy of Mary Dell (Flickr)

most tasks without a prosthetic limb. Despite having a shorter limb and an absent or imperfectly formed hand, the skin on the end of the stump is normal and has normal sensation.

Applying a prosthetic limb takes away the ability to touch and feel with the skin of the stump, and there is no way for the body to know where the prosthesis is in space.⁽²⁰⁾ Despite this, there are times when two limbs are simply better than one, and the child and the family may wish to try a prosthesis. Children can be fitted with an upper prosthetic limb from the time they are learning to sit up, and therefore have their arms free to explore their environment. At

this young age the child cannot make it open or close, but you may put a toy or colourful object into the prosthetic hand and encourage your child to use it as an extension of their own arm.⁽²⁰⁾

At about two years of age, he or she will be able to learn to use a prosthetic limb that can open and close. It is important to remember that the prosthetic limb cannot replace the absent limb, but is merely an assistant to the “good” arm and should be treated as such. Activities for which children will find a prosthesis beneficial include cutting, cooking and two-handed activities.⁽²⁰⁾

Lower limb amputations

The infant with a congenital lower limb deficiency is usually ready to use a prosthetic limb when they are able to pull themselves up to a standing position. The child is then ready to walk around holding on to furniture or with hands held. A prosthetic limb is required at this age to encourage the development of balance and early independent walking.⁽²⁰⁾

Due to the great functional benefit achieved with a prosthetic leg, lower limb prostheses are generally well accepted by children. The child with a lower limb prosthesis is encouraged to participate in activities including school activities and sports.⁽²⁰⁾

Your child may try a prosthesis and choose not to use it. This is a very common occurrence and is in no way a reflection of the child’s ability or willingness to learn. They may wish to try again when they have a specific need, for example, to play a musical instrument or learn to drive.⁽²⁰⁾

Medical Considerations

Specific attention needs to be paid to the fit of the prosthetic limb on the limb and close observation of the skin and the shape of the stump. A child may develop bony overgrowth that works its way through the end of the stump. This will require medical intervention⁽²⁰⁾

Your prosthetist will teach you how to check the stump regularly for redness or

soreness and what to do if this occurs. They will also advise you how to check the fitting, general care of the prosthesis, skin care, and how to identify and manage problems at an early stage.

Schooling and amputee children

When you are selecting a school for your child tour the school and check it meets your child’s needs. If your child will need to use crutches or a wheelchair make sure the school has the proper facilities. If possible meet the teacher/s in advance and talk with them about your child’s requirements. Your child will pick up on the attitude of the teacher so it is important that the teacher understands your child and what their limb difference requires.⁽²¹⁾

If your child will have regular absences for clinical and prosthetic appointments talk to the school. If you can provide the dates in advance teachers can plan class activities so that your child does not miss special events or assignment due dates and exams.

Teachers may act in a way that singles out your child; this type of behaviour is a reflection of their attitude towards children with physical differences. This singling out may be positive such as not giving a punishment if your child breaks a rule or offering excessive assistance. It may be negative behaviour such as not allowing full participation in activities or refusing to discipline bullies. If you are concerned that your child is being singled out discuss your concerns with the school principal.⁽²¹⁾

Other children may tease your child or ask unwanted questions. Talk to your child about what they can do such as walking away or using humour. If you believe that there is persistent bullying happening see the school and plan together how to address the issue.^(21,22)

If your child does not like school or does not feel accepted make sure they have positive experiences at home and encourage supportive friendships with their peers outside school such as clubs and sports.⁽²²⁾

Children and trauma

Children lose limbs to infection, traumatic accidents and cancer just as adults do.

Children also have to process and accept the limb loss and adapt to their new situation.

A child may develop fears and anxiety not only regarding the loss of a limb, the circumstances in which the amputation occurred can create anxiety and fears.

Children react differently to trauma than adults do. If your child had an amputation due to an accident or traumatic event it is important to look for the signs of traumatic stress such as:

- **Disturbed sleep.** Your child may have nightmares, sleep restlessly, wet the bed or call out for you in the night.
- **Guilt.** Children can feel that they were bad and had to be punished hence the traumatic event. As a response to this guilt, they may become naughty as they feel they should be punished. On the other hand, some children become extra good as a way to make amends for what they think they did wrong.
- **Reverting Behaviour.** Some children may act like a younger child. They will become clingy, be afraid of being left alone or act in a babyish manner.
- **Fear.** Your child may develop fears they did not have before the amputation. They may fear things associated with the event such as cars. They may also develop phobias.

If anxiety and fears persist your child may need assistance from a professional. Talk to your doctor about a referral to a child psychologist or counsellor.^(23,24)

When their child has had an amputation due to a traumatic event parents will naturally have feelings of guilt and anxiety. It is important to maintain your child's routine and not become over protective or overindulge your child as children need the security of consistency.

Your child needs to be able to talk about the event and work through their concerns and fears. They need to be reassured that they are not 'bad' and they did not deserve their amputation.⁽²⁴⁾

Teenagers with amputation

When your child becomes a teenager they may not be as comfortable with their limb as before. Many teenagers with amputations or limb differences go through phases of trying to hide their prosthesis under lots of clothing. They may withdraw from activities that make their difference obvious such as sports. This is distressing for parents but it is a normal process of a teenager discovering their identity and a fear of being 'singled out' for being different to their peers. Encourage and support your teen during this phase, most return to normal prosthetic use in their late teens or young adulthood when they feel more comfortable with their individuality.⁽²⁵⁾

Teenagers need reassurance that they will be loved and accepted. Many worry that they will never meet a romantic partner and assume they will live a life of rejection. Teenagers are bombarded with media imagery about perfect bodies and how to attract a partner. Teenagers with limb differences may need support to build their self-esteem so that they feel accepted as a unique person.^(26,27) The following list has tips for helping your teenager develop positive self-esteem:

- Encourage participation in the usual teenage rights of passage such as learning to drive a car.
- Focus on abilities, never make them feel inadequate about what they cannot do.
- Have your family and friends demonstrate acceptance of their own bodies including parts they dislike.
- Recognise and celebrate the positives in their lives.
- Avoid those who are negative towards your teen such as those who tell them they will never succeed.
- Allow them to express their feelings without judgement or blame.
- If they have a problem help them to reach a solution that they are comfortable with.⁽²⁶⁻²⁸⁾

Peer support is beneficial for teenagers, the section on emotional recovery has advice on choosing a suitable group and how support groups can help.

Siblings

The siblings of a child with a limb difference or amputation also need assistance working through their own feelings. Even the best intentioned and most devoted parents may let the needs of a sibling go unfulfilled due to the pace of day to day life. Many siblings benefit from having a brother or sister with a disability they build resilience, patience, empathy, responsibility, compassion and maturity. They love their sibling and are proud of them and their achievements but there are frustrations too.⁽²⁹⁾

Guilt: Many siblings feel guilt or shame at having negative feelings about the situation. This guilt will come when they feel frustrated or ignored and a sibling may try to hide how they feel out of shame or fear of being told they are a bad person.⁽²⁹⁾

Resentment: The child with a disability may take up more parental time and attention. They may have different rules and expectations put on them. They may have less time for play and socialising because they have to take on responsibilities beyond their years. This can all lead to resentment.

Stress: Siblings often become stressed because they do not want to create problems for their parents. They may try to behave perfectly or take on extra responsibilities. They may hide what they believe are problems that their parents won't care about such as school troubles or fighting with a friend. Older children may try to overachieve to 'make up' for what they perceive as their parent's disappointment in them or their sibling. They may also feel the need to protect and watch their siblings in case of bullies.^(29,30)

Sadness: A sibling has expectations of how they will act as a brother or sister and what they will do with their sibling. When this does not work out they can feel sad.⁽²⁹⁾

Fear: Young children may fear having an amputation themselves or catching what their sibling had such as cancer. They may feel their sibling's amputation is a punishment for being bad.⁽²⁹⁾

Embarrassment: Children may be embarrassed by how their sibling looks or behaves. They may worry that their sibling will lose them friends or cause bullying.

Loneliness: A sibling may have difficulties socialising due to the needs of the child with a limb difference. They may be lonely at school because no one understands their situation or the needs of the other child mean that they cannot always attend activities with other children. They may feel lonely at home because their parents' spend limited time with them.⁽²⁹⁾

Helping siblings to cope

Let children know that it is OK to have negative feelings sometimes and it doesn't make them bad. Allow them to express and work through these feelings without judgement.⁽²⁹⁻³¹⁾

Spend one-on-one time with all of your children. If this is not always possible acknowledge that things will not always seem to be fair and you know they may feel sad about this and it is OK to feel that way.

Never minimise the needs or fears of a sibling. Often what seems to be a minor issue can become problematic if it is not addressed. Look for non-verbal signs that the child is stressed, anxious or fearful such as irritability, school problems or a loss of interest in activities.⁽²⁹⁻³¹⁾

If a child is not acting out or misbehaving it does not mean that they aren't troubled. A child may have decided that they do not want to trouble you and keep their feelings bottled up. A quiet and withdrawn child may be suffering as much as one who expresses their feelings through anger or misbehaviour.⁽²⁹⁻³¹⁾

Children are quite intuitive and pick up on the attitudes of the adults around them. If you are stressed, angry or fearful a child will take these feelings on. If you want your children to have coping skills you have to model these behaviours as they learn from you. Show your child how to handle their feelings productively.⁽³²⁾

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Caring and specific conditions

In this section

1. Caring and diabetes
2. Caring and chronic pain
3. Caring and depression
4. Caring and anxiety
5. Carers with secondary traumatic stress

Caring and diabetes

The following advice is for those who are caring for a person with diabetes. If you are concerned about the other person's management of their diabetes, the following may help:

Don't be the diabetes police. If you closely monitor your partner's diabetes they may become resistant to your advice. Offer to help but respect the boundaries of the person. Decide together how their diabetes can be managed without the need to badger.

Make your household healthy. Both of you need to look out for your health so incorporate a healthy diet and exercise into your routine. If you are not sure about cooking for a person with diabetes see a dietician or use a diabetes cookbook. Diabetes friendly recipes are healthy and balanced; therefore anyone can eat them. If you both smoke try to quit together and save alcohol for a special treat

Avoid eating treats in front of your partner. If you both enjoy treats find diabetes friendly recipes or save your food treats for when you are out with friends. Include some exercise in your routine and include your partner. You may choose to exercise while your partner does their stretches.

Be informed. Research diabetes to be familiar with the symptoms and warning signs. Take an active interest in diabetes management and talk to your and your partner's doctor about how to manage diabetes.⁽¹⁾

Caring and chronic pain

Chronic pain can cause massive disruption to families and needs to be treated as the disabling illness that it is. Carers will find they have a range of emotions and when you care for a person in chronic pain the following advice may help.^(2,3)

Demonstrate flexibility and patience. The person in pain will often have good and bad days. To enjoy time together have ideas of activities that can be done on short notice. If the person's pain causes a disruption to a planned event try not to show resentment.

Depersonalise anger. The person in pain will often have periods of frustration and depression. They may lash out or feel the need to vent. In these cases it is rarely you that they are angry with; it is the situation. Allow them to express their feelings and do not assume that their anger is directed towards you as a person. The same thing applies to when you as a carer have frustrations, approach issues as a problem to be solved together not a failing of the other person. Avoid bringing up problems when the person is having a bad pain day.

Listen and watch for pain and its signals. Look for signs that they are in pain but do not want to admit it. Listen to them when they describe their pain and help them to keep records to take to the doctor. Accept that the pain is what they say it is. Do not try to help by telling them to think positive, trying to convince them the pain cannot be that bad or comparing their pain to other's who 'have it worse'.

Adapt how things are done around the home so that the person in pain can contribute. For example, if grocery shopping is painful look into internet shopping. If you have high standards about how tasks are completed let them go: do not redo things or complain if the person completed a task but it wasn't how you would have done it. It is also less stressful for you if you can let go of some high expectations. Redivide household tasks so that the person in pain can contribute.

Never tell a person in pain that they should do more or their pain can't be that bad. Avoid statements like "You've been home all day, you could have done something" If you are worried that they are losing their independence encourage them to do things within their limits without shaming them.

Chronic pain affects the whole family so it is important that as a carer you have a support network. If there are no support groups in your area you can use the internet. Look for support in other areas such as an exercise class, or interest group. You will find that others in your circle are experiencing similar stresses.⁽²⁻³⁾



Could they be faking the pain and depression? Maybe for attention or to avoid work?

Intentionally faking or exaggerating a condition for benefit is called 'malingering'. Most malingerers are motivated by monetary compensation however, there are more people seeking compensation in genuine pain than malingerers. People living with pain or depression find that any positives from being cared for or not working are negligible and are greatly outweighed by the negatives.⁽²⁾ People with depression may feel pain more intensely, such symptoms require treatment and are not malingering.

Caring and depression

When you care for someone with depression it may feel that talking to them is an emotional mine field, remember that you cannot make them feel better and they cannot make themselves feel better. If they could 'get over it' they would do so in a heartbeat. Even if you are having trouble understanding how the person feels you can show compassion and offer support.⁽⁴⁾

What you can say

- You are important to me.
- Your feelings are real.
- I can't say I know how you feel but I'm here for you.
- I'll stick with you no matter what
- I'm going to take care of myself so that I'm there for you.
- I'm worried about you.^(4,5)

You can see that most of these suggestions are about reassuring them that you will be there no matter what happens. A depressed person feels isolated and guilty about their feelings, give them permission to be depressed and let them know that you won't reject them.^(4,5)

What not to say

- There are people worse off than you
- Life isn't fair deal with it
- You're just feeling sorry for yourself
- You were always negative
- You brought this on yourself
- We all have ups and downs
- You get a payoff from making me feel bad
- It's always about you
- Have you tried aromatherapy or listening to happy music?
- Let's see a smile/It takes more muscles to frown than it does to smile^(4,5)

There are two kinds of unhelpful responses to someone's depression. The first is thinking that depression is controllable by willpower. Depression cannot be cured by cajoling, issuing orders, scare tactics or guilt trips. The second is minimising their feelings or offering solutions. Clinical depression cannot be cured by using the same methods people use to cheer themselves up on a down day.^(4,6)

When listening to a depressed person avoid making arguments as to why their feelings are incorrect. The depression has clouded how they see the world; the best advice you can give is to seek help from a doctor as there is no way to rationalise their feelings away. Be patient and persistent as it may take a while before they get help.^(4,5)

If your loved one is going through therapy they may want to talk about their emotions and past events. These emotions may be confronting but allow the person to talk about them. Do not assume that all of the person's feelings and emotions are directed at or caused by you: the person will have strong feelings directed at others in their lives and themselves.^(4,5)

Reassure the person that modern treatments are very good and talk to them about seeing their doctor. Encourage your loved one to continue their treatment and take medication.^(4,5) If the person agrees to seek help ask if they would like you to come as support. As an outsider, you could offer insight into symptoms or behaviour that they may not be aware of.^(4,5) Recovery from depression can take many months and setbacks happen. Keep up with the encouragement and watch for signs the depression is getting worse.

Suicide must be taken seriously

Depression clouds judgement and depressed people may contemplate suicide. It is a myth that those who talk about suicide are attention seekers and talking about it will give a person the idea to commit suicide.⁽⁷⁾ Talk to the person about their feelings and take any of the following signs seriously:

- Talking about committing suicide.
- Talking about relieving the burden they place on others.
- Becoming extremely isolated.
- Belief that the future is hopeless
- Becoming preoccupied with death.
- A sudden sense of calm, saying goodbye, finalising affairs or giving away possessions. They may have decided to commit suicide.⁽⁷⁾

If the person is contemplating suicide, encourage them to seek help from a doctor, counsellor or Lifeline.⁽⁷⁾



If someone is thinking of suicide help is available, call Lifeline on 13 11 14 or emergency services on 000

Why do people not believe depression is real?

As a carer you will face others that strongly deny the existence of depression. For some, it is difficult to accept that something that cannot show up in tests could be real. They struggle with the idea that physical symptoms such as headaches, stomach pain and fatigue may not be physical in origin.⁽⁸⁾

Others may have seen media stories about people feigning illness for attention or to solicit donations and assume that it is common. Pretending to be ill does happen but it is relatively rare and the people involved often have histories of manipulative behaviour and dishonesty.⁽⁹⁾

Some believe that mental illness cannot affect the strong, successful and those in loving relationships. They believe that depression only affects 'losers' or the weak and the person they know is strong and successful so they cannot be depressed.⁽¹⁰⁾

Depression and the elderly

Depression is not a natural part of ageing, in older people there are medical conditions that cause depression-like symptoms that need to be eliminated before depression is diagnosed. Some of these conditions include:

- Parkinson's disease
- multiple sclerosis
- heart disease
- diabetes
- thyroid disorders
- vitamin B12 deficiency
- dementia⁽¹¹⁾

Some common medications can also cause depression-like symptoms in older people, these medicines include:

- blood pressure medicines
- beta blockers
- sleeping tablets and tranquillisers
- cholesterol lowering medicine
- stomach ulcer medicine
- heart condition medicine
- oestrogen⁽¹¹⁾

Those caring for elderly relatives may be concerned about the declining mental acuity of the person and may worry it is due to dementia when it is actually due to depression, a brief description of symptoms is in the following table.⁽¹¹⁾

Depression

- Fast decline in mental acuity
- Knows facts such as where and who they are
- Poor concentration
- Language is slow but used correctly
- Motor skills are slow but accurate.
- Worried about memory loss

Dementia

- Slow decline in mental acuity
- Struggles with basic questions, easily confused
- Poor short term memory
- Language used incorrectly.
- Motor skills are impaired
- No concerns about memory loss, adamant there is nothing wrong

Depression in young people

Depression in teenagers and children often goes untreated because it is difficult to tell what is a clinical problem and what is the typical emotional upheaval of adolescence. If you are concerned about your child or teenager there are signs to look out for. In the case of children look for

uncharacteristic behaviours such as:

- They seem sad most of the time.
- They are not interested in things they previously enjoyed and do not want to play.
- They have disturbed sleep and may start bedwetting or be tired during the day.
- They are withdrawn at home or school and not as sociable as before.
- They start misbehaving in ways they did not do before such as teasing other children or back talking.⁽¹²⁾

Important signs to look out for in teens are changes in mood and behaviour such as:

- Social withdrawal at school and withdrawal from their friendship groups outside of school.
- They stop participating in activities they once enjoyed.
- Their school marks drop significantly.
- They engage in risky behaviour such as trying drugs.
- They have severe sleep problems.
- They neglect personal hygiene.
- They express thoughts about suicide, death and hopelessness.^(13,14)

If you believe your child is depressed take them to their doctor for a referral to a specialist child psychologist or counsellor. If you believe your teenager is depressed take them to a doctor if you can. If you cannot make them go to a doctor encourage them to get help and offer support.⁽¹²⁻¹⁴⁾

There are ways to help support people with depression in this book, these techniques are useful for teenagers with depression. If your child or teenager is prescribed antidepressants be aware that there is a link between antidepressants and increased suicidal behaviour in people under 25 years of age. Young people must be monitored for signs of suicidal thinking.⁽¹⁵⁾

Caring and anxiety

When somebody has anxiety or post-traumatic stress it can be distressing to see them reliving a painful event over and over again or so anxious that they cannot leave the house. The following are some tips for carers of people with anxiety or post-traumatic stress disorders.⁽¹⁶⁻¹⁸⁾

Actively listen to the person and allow them to share their feelings. Just listening when they need you to is of great help to the person.

Avoid offering solutions and do not try to minimise what is bothering the person. It is natural to try to help alleviate their worries but it can backfire. If you find listening to their feelings or details of the event confronting encourage professional support rather than asking them to suppress their feelings.⁽¹⁶⁻¹⁸⁾

If the person has post-traumatic stress anticipate anniversaries or other reminders of the event to be particularly distressing. Be prepared to assist at these times.

Do not take the anger of someone with post-traumatic stress personally. Angry outbursts and social withdrawal are part of the illness. The exception is violence; if you feel under threat or are abused physically seek help and leave if you must because your or your children's safety is at risk.⁽¹⁶⁻¹⁸⁾

Encourage the person to seek help and recognise any achievements in their recovery and encourage them to move on if they have setbacks. Let the person recover in their own time. Trying to set the pace of someone else's recovery is ineffective. If the person is in therapy provide support for any tasks that have been set to aid recovery.

If the person wants some time alone leave them be, however, encourage time with other people if you are worried about the person being too withdrawn.⁽¹⁶⁻¹⁸⁾

Do watch for signs of excessive use of alcohol or drugs. If you are worried about substance abuse offer support in seeking help.

Compassion fatigue

For many carers, the role is simultaneously rewarding and exhausting both physically and mentally. The demanding nature of the caregiver's role can lead to a condition called "secondary post-traumatic stress" or "compassion fatigue" As the name implies it is a stress disorder that affects those connected to someone who has been through a traumatic event including full-time caregivers. It is more likely that you will have traumatic stress if the person you care for is not coping well after amputation or there has been a significant change in their personality.^(19,20)

Compassion fatigue occurs when a caregiver neglects their own physical and emotional needs while they meet the same needs in other people. Over time this neglect leads to burnout. This does not mean you have truly stopped caring rather your body and mind are at breaking point. You may find that your stressors include the following 'trigger points'^(20,21)

Role confusion: You had a different role that you were comfortable with such as a husband or wife now that has changed. Negotiating the change in roles with your loved one can be stressful and confusing.

Unrealistic expectations. You may have a loved one with a condition like depression or chronic pain that you want to help 'fix' but despite your best effort they still suffer. You feel like you have failed because you cannot help them as you believe you should.⁽²¹⁾

Unreasonable demands. You may burden yourself with ideals that cannot be met such as fulfilling all your loved ones needs without outside help or maintaining a perfect home while caring.⁽²¹⁾

Lack of Control. You may find aspects of your life removed from your control such as the loss of finances and the progression of your loved one's condition.⁽²¹⁾

The symptoms of compassion fatigue are the same as anxiety and post-traumatic stress because that is what it is, the only

difference is it affects the carer instead of the person being cared for.

All caregivers should be aware of how they feel and watch for the following signs of burnout:

- You have symptoms of post-traumatic stress disorder (see page 63)
- You are less tolerant of minor annoyances.
- You feel very negative about your role as caregiver and life in general.
- You are stressed from having to "walk on eggshells" to avoid upsetting the person in your care
- You are bottling up your emotions.
- You find yourself complaining constantly or blaming others for the problems you are facing.
- You are isolating yourself from friends and activities you enjoy.
- You have chronic illnesses like headaches
- You feel incompetent or that you are letting people down.⁽¹⁹⁻²¹⁾

If you identify with these symptoms but do not yet feel overwhelmed try to minimise your stress and stay healthy. If you would like to try self-help you can follow general advice for caregivers on alleviating stress and staying physically healthy through diet and exercise. If you are at breaking point then professional help is available so see your doctor for treatment advice. It is important that you do not neglect treatment for yourself and seek help before you are completely overwhelmed.

If you have the symptoms of post-traumatic stress you need to see a professional as it is a genuine illness; not a reflection on your character or ability to be a caregiver. It can be distressing to feel such negativity towards someone you care about but it affects all manner of people even those who have chosen a caring profession such as nurses.^(19,20)

Being a caregiver is demanding, give yourself permission to look after yourself and make your health a priority.

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Information for general
practitioners

This section is designed to provide your General Practitioner (GP) with knowledge about some of the residual limb problems that amputees may suffer.

Complications pertaining to residual limbs

Musculoskeletal difficulties in the residual limb can occur at any time after amputation. These difficulties can be divided into two groups; early complications, which occur days or weeks after the operation or late complications, which tend to occur months or years after the amputation.^(1,2)

Early complications

Delayed wound healing: Can occur for a variety of reasons, such as infection, marginal necrosis, direct trauma to the stump, or malnutrition.

Marginal necrosis: Necrosis, a rapidly spreading infection of deep soft tissues, is most commonly caused by infection. Necrosis destroys tissue, causes extreme pain at the site of the infection, and can cause death. Treatment often involves surgery. Underlying conditions may also exist, such as malnutrition, renal failure, or diabetes mellitus.^(1,2)

Trauma: Due to direct trauma, the surgical suture line can reopen or split. Treatment may involve excisional debridement and resuturing.

Infection: Infection can cause a delay in the wound healing. Infections can be treated by irrigation, dressings, debridement and antibiotics. The ancillary treatment of hyperbaric oxygen therapy has at times been helpful. After the infection has been controlled, surgery may be necessary.

Joint contracture: Joints will not straighten, which can make it very difficult to fit prostheses. Postoperative treatment can involve rigid or semi-rigid dressings, lightweight casts, and physiotherapy.^(1,2)

Late complications

Bursitis: Inflammation of a bursa can be caused, if not by infection, by pressure or friction in the prosthetic socket. Treatment

is the same in amputees as in the general population, including ice, rest, and anti-inflammatory drugs. If symptoms persist, further treatment can involve corticosteroid injections or excision of the bursa along with any superfluous skin connected to it.

Chronic sinus formation: This may take the form of a suture abscess, localised osteomyelitis, or a bursal sinus. The opening can be probed to determine if a sinus is present. Due to sinus tracts frequently not healing, treatment often involves excision.

Bony prominences: Pain may be experienced due to bone spurs or appositional bone growth in a child. Modifying the prosthesis may be helpful or the spur may need to be excised.^(1,2)

Adherent skin: Skin adhering to underlining bone may cause ulceration and/or pain, especially when prostheses are worn. Daily fingertip massages, using a silicon gel liner, or adding a thigh corset and knee joint may be helpful in caring for this condition. If unsuccessful, surgery may be necessary.^(1,2)

Insensate skin: Sensory neuropathy is fairly common in residual limbs. Individuals may continue to use prostheses despite localised pressure or skin breakdown. Patients need to be educated about inspecting their limb regularly and about infections resulting from small skin abrasions.

Neurogenic pain: If localised tapping generates a tingling pain sensation, it may be indicative of a symptomatic neuroma. Treatment may include modifying the prosthetic socket to minimise pressure or injecting corticosteroid into the nodule if modification does not work. If symptoms persevere, the neuroma may need to be excised.^(1,2)

Degenerative arthritis: Prostheses may exacerbate pre-existing arthritic conditions.

Low back pain: Pre-existing back pain is likely to increase due to ambulating with a prosthesis placing more pressure on the lower back and pelvic area. In those who do not have pre-existing pain, lower back pain

is apt to develop. Prevention is the best management strategy and can include maintaining physical fitness, daily exercises to strengthen the back, and avoiding weight gain. Analgesic or anti-inflammatory medication has also been utilised.

Fractures: The usual rules of fracture care normally apply to fractures in the residual limb.^(1,2)

Skin problems

It is best to treat skin irritations, even minor ones, as neglected skin lesions can lead to serious skin disorders.

Oedema: Redness or mild oedema frequently occurs when prostheses are first worn. This condition can often be managed by using shrinker socks or elastic bandages when the prosthesis is off. Proper fitting prostheses need to be worn. Unattended, the condition can lead to ulcers, gangrene, haemorrhage, etc.

Dermatitis: Eczema, blisters, swelling, or scaling may occur on the skin when contact is made with irritants or allergens. To treat these conditions, ask what materials and varnishes are used to make the prosthesis, assess any friction within the socket, and gauge heat and humidity factors. Treatment often involves avoiding the substance causing dermatitis, using cool/cold compresses, applying topical corticosteroids, and using anti-itching lotions.^(1,2)

Epidermoid cysts/Inflamed sweat glands: Often a chronic condition and most likely to be seen where there is inflammation due to the prosthetic socket. The prosthesis may need to be adjusted, the residual limb treated with antibiotics, and warm socks should be used. The infected nodule can be drained for temporary relief or hot compresses can also be used. Clean the residual limb and socket liner with antibacterial soap daily. Treatment may include excision when thick cyst walls form.

Bacterial folliculitis: inflammation of hair follicles can be caused by oily skin, sweating, or rubbing of the skin by the prosthesis. This condition, as well as boils,

can also be a result of poor hygiene of the socket and/or the residual limb. Management may involve improving hygiene, using wet compresses, draining boils, using oral or topical antibiotics, using topical antiseptics. Avoid oily or lanolin products for folliculitis.^(1,2)

Superficial fungal infections: Fungal infections (e.g. tinea cruris and tinea corporis) can be quite common and are frequently treated with topical antifungal creams, powders, or oral antifungal antibiotics if the creams and powders are ineffective.

Warts: Warts and verrucous hyperplasia can frequently be found on the residual limb. Warts are usually managed by cauterisation while verrucous hyperplasia has been treated using a combination of socket and liner adjustments.^(1,2)

Pain

The majority of individuals seem to experience some type of pain after limb amputation.

Residual limb pain: Can be caused by bone spurs, adherent skin, neuromas, etc. This type of pain has a tendency to be intermittent.

Phantom limb pain: Pain (e.g. sharp, stabbing, shooting, tingling, etc.) is experienced in the missing limb and seems to be experienced by the majority of amputees at periodic times. Pain can be episodic or chronic and the intensity can vary greatly.^(1,2)

Phantom limb sensations (non-painful): People may feel that the amputated part of the limb still exists, feel it moving, feel pressure, or even an itch. These sensations appear to be quite commonly experienced and do not seem to be harmful to amputees.

A complete assessment should be conducted to manage pain and pain behaviours effectively. Assessment would include examining medical, physical, psychological, prosthetic, and environmental factors.^(1,2)

While tricyclic antidepressants have been used to treat chronic pain conditions, more research needs to be conducted before it can be determined if it is as effective for phantom limb pain.

Antiseizure medication, such as gabapentin, has been effective in treating phantom limb pain for some amputees. Some opiates and narcotics have been used to calm phantom limb pain.^(1,2)

A multidisciplinary team (e.g. medical doctor, psychologist, physiotherapist, occupational therapist, etc.) that can tackle the biopsychosocial factors associated with pain is the most commonly used form for managing chronic pain.

Other strategies amputees have used to treat pain are: repeating to self that the limb is gone, pricking the scar line and skin (without breaking it) with a pin, massaging the residual limb gently, tapping the stump, squeezing the sensitive areas, wearing a stump bandage or shrinker, tightening and releasing the muscles in the residual limb, wrapping the stump in a warm towel, or walking.^(1,2)

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Glossary of terms

In this section

1. Glossary of common prosthetic terminology

Abduction:To move a limb away from the middle (median) of the body.

Adduction:To move a limb towards the middle (median) of the body.

ADLs: Activities of daily living. The type of activities undertaken daily by an independent person such as using a spoon.

Alignment: The positioning of the prosthetic foot, knee and socket for optimal walking.

Ambulation: The act of walking.

Anterior: The front of the body.

Atrophy: When muscles waste away due to lack of use.

Bilateral: Amputation of two limbs.

Bulbous stump: A stump that is larger on the distal end.

CAD: Computer Aided Design. Using a scanner and computer to make a 3d shape of the stump that can be cut out by a milling machine.

Carer: Person responsible for the care of an individual requiring assistance with the activities of daily living.

Cast: To form an exact likeness of a stump using plaster or alginate (a jelly-like material) The cast is used to mould the socket.

Check-socket: A temporary socket made from clear acrylic to allow the prosthetist to look for pressure points.

Chopart: A partial foot amputation (outdated term)

C-Leg: A prosthetic leg operated by a small internal computer.

Co-morbidity: Other medical condition in addition to amputation e.g. diabetes.

Congenital: Present at birth.

Conical stump: A stump that is more narrow at the distal end, this is the desirable shape for a stump.

Contracture: Tightness and shortening of muscles, tendons or ligaments restricting the movement of a joint.

Cosmesis: A prosthetic cover that replicates the appearance of a natural limb.

Cosmetic prosthesis: Prosthetic limb made to resemble the absent limb but with no functional ability.

Cylindrical stump: A stump that is the same size from top to bottom.

Definitive prosthesis: A prosthesis made when your stump is stable in size and shape

Disarticulation: To be separated at a joint

Distal end: The end of the stump that is away from the body.

Doff: To remove a prosthesis.

Don: To put on a prosthesis.

Exoskeletal: A style of prosthesis that has a hard exterior which is very durable and has waterproof qualities.

Extension: The straightening of a joint.

Flex Socket: A type of socket that can expand and contract with the stump.

Flexion: The bending of a joint.

Functional activity: Combination of movements required to complete a task.

Functional level: The amount of functional activity and activities of daily living a person can perform.

Gait: The style or pattern of walking.

Heel height: The difference between the height of the sole of the shoe and the height of the heel.

Hybrid: In prosthetics, to combine different technologies e.g. a knee unit with a mechanical axis and a hydraulic piston.

Interface: A layer of protective material between the socket and stump skin used to reduce irritation.

Interim Prosthesis: The first prosthesis you receive. Often the pylon is left uncovered to allow the prosthetist to adjust the alignment and replace the socket as required.

Ischial bones: The bottom of the pelvis, also known as 'sit bones' as these are what the body rests on when sitting.

Ischemia: A restriction in blood flow, this can result in amputation.

Itis: A suffix meaning 'inflammation' e.g. dermatitis is inflammation of the skin.

K-Rating: A rating for lower limb amputees based on completion of a set of physical tasks and relevant co-morbidities.

Lateral: The vertical outside of the body, the sides of the body

Liner: The soft insert intended to act as a shock absorber between the prosthesis and stump.

Median: In anatomy, the vertical middle of the body.

Modular: A style of prosthesis which is constructed around an inner pylon and then covered with high-density foam. This style allows for alignment correction and repair to components.

Multi-axis: Having more than one axis to allow up and down as well as side to side and rotational movement. Common in prosthetic feet and knees.

Myoelectric: An arm prosthesis controlled by detecting muscle contractions.

Neuroma: In amputation, a bundle at the cut end of a nerve made up of nerve cells and fibres.

Neoplastic: In amputation, limb loss relating to a tumour.

Neurogenic: In amputation, limb loss related to the nervous system.

Oedema: Swelling of soft tissues under the skin caused by excess fluid.

Osseointegration: To implant into bone.

Osteo: Prefix meaning 'bone'

Passive: A component that must be manually positioned by the wearer.

Patella Tendon Bearing/PTB socket: A socket for trans-tibial amputees that uses the patella tendon for weight bearing.

Pelvic band: The band that goes around the waist to hold an above knee prosthesis in the correct position.

Phantom pain: Any painful sensation in the absent part of a limb e.g.: an ache in an ankle that no longer exists.

Phantom sensation: The feeling that the amputated limb is still there and any feeling other than pain felt in the amputated limb e.g.: an itchy big toe that is no longer there.

Phocomelias: Missing or shortened at birth. This usually refers to bones and/or limbs.

Pirogoff: A foot amputation that retains the heel pad (outdated term)

Pistoning: When the stump moves up and down in the socket due to incorrect socket fit.

Posterior: The back of the body.

Prehension: To grasp, pinch or hold as you would with a hand.

Primary prosthesis: A definitive prosthesis

Prosthetic limb/prosthesis: Artificial limb.

Prosthetist: A person who makes artificial limbs.

Proximal: The part of the stump that is closest to the body.

Push off: The initial phase of walking where the foot is raised off the ground.

PVD: Peripheral Vascular Disease a common cause of amputation.

Pylon: The pole of carbon fibre, titanium or aluminium between the socket and the foot of a prosthetic limb.

Quadrilateral socket: A type of socket for trans-femoral amputees that has four unique sides including a shelf to bear weight on the ischial bones.

Range of Motion/ROM: How much flexion and extension a joint has.

Residual/residuum: The part of the amputated limb that remains ie. the stump.

Revision: In amputation, surgery to the residual limb to improve prosthetic fit or address a medical condition.

Sheath: A thin sock, usual nylon, which offers protection to fragile skin.

Shrinker: An elastic stump sock used to reduce oedema.

Shuttle lock: A lock used to hold the prosthesis to the liner so that the prosthesis does not fall off.

Silicone: A synthetic rubber used in prosthetics for its softness, durability, ability to be cast with fine details and ability to be custom tinted.

Single-axis: A joint that can only move up and down. Seen in basic foot and knee units.

Sleeve: An elasticised sock used to hold on a prosthesis.

Sock: Socks designed for the stump. There are several different materials used and these are of different thickness.

Socket: The part of the prosthesis that the stump slips into.

Stance: Body position when standing upright.

Stance phase: The phase of walking where the foot is on the ground.

Suspension: The way in which the prosthesis is kept on.

Swing phase: The phase of walking when the foot is off the ground

Symes: An ankle disarticulation amputation (outdated term)

Terminal device: A component at the end of a prosthesis, usually refers to upper limb prosthetic components.

Total Surface Bearing/TSB: A type of socket where the entire stump is in contact with the socket to evenly distribute weight.

Trans-femoral: An amputation above the knee and below the hip joint.

Trans-humeral: An amputation above the elbow and below the shoulder joint.

Trans-radial: An amputation below the elbow and above the wrist joint.

Trans-tibial: An amputation below the knee and above the ankle joint.

Unilateral: An amputation on one side of the body.

Unit: A component made of multiple parts e.g knees

Volume: In amputation refers to the size of the stump and changes caused by oedema.

Voluntary control: Controlling a prosthesis with conscious control of muscles. Used to operate cables in prosthetic upper limbs and terminal devices.

My Contact List

Name/company:

Phone:

Address:

Email:

Appointments

January

February

March

April

May

June

July

August

September

October

November

December

