AMPUTATION BOOKLET

THE REMEDY TEAM APPROACH TO AMPUTEE REHABILITATION

REMEDY

~ A FRESH APPROACH TO REHABILITATION ~

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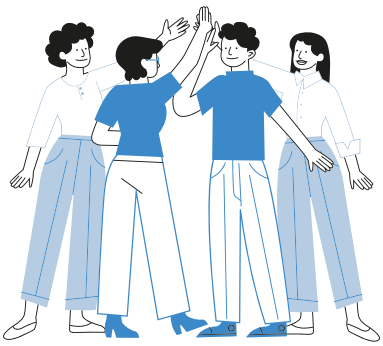
INTRODUCTION TO REMEDY HEALTHCARE



The aim of this document is to supplement discussions you will hopefully have had with your treating team, as well as inform you of the services available via Remedy Healthcare.

The document is aimed at patients who are contemplating elective (non-emergency) amputation or have already undergone amputation for trauma reasons. The vast majority of amputations in the UK occur for vascular reasons, often secondary to peripheral vascular disease or diabetes. Those patients have a very different post-operative prognosis than those secondary to trauma, where patients were often fit and well prior to the incident that injured them. Essentially if you were walking prior to your injury, we will always be aiming to get back to that level of function as a minimum. We achieve this in partnership with a range of prosthetic providers and utilising a team of experienced clinicians to ensure you maximise your potential.

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THE REMEDY TEAM

Remedy Healthcare is relatively unique in having a multi-disciplinary team acting in an inter-disciplinary fashion, working seamlessly with each other, and interacting with a range of external providers in the NHS and in private healthcare. Care is provided in multiple settings ranging from clinic-based environments to residential rehabilitation at our Bagshot Park rehabilitation base, to a variety of community locations including a patient's own home, local gyms and any other setting that facilitates the goal of the session. We are based in the South London/wider Southeast area. The team includes specialists from various clinical disciplines including:

CONSULTANT IN REHABILITATION MEDICINE

This is a doctor with training and clinical experience in helping patients exactly like you. Our rehabilitation doctors all previously worked in the military and as such were exposed to many patients with traumatic amputations and/or injuries that placed them at risk of subsequent amputation. They developed an extensive experience in dealing with traumatic amputees with all variations of limb loss, often complicated by multiple other injuries. Their remit was to case manage these patients which meant being involved in all aspects of their care and future social needs. As a result, their knowledge doesn't just extend to a patient's medical needs but all aspects necessary to get them back to as normal a life as possible after injury. That helps them take an overarching appreciation of any patient's needs as well as meaning they can often highlight areas that may not yet have been considered. They are involved in all aspects of care delivery and provide senior support to the team members to ensure your care is of the highest standard.

Team members: Dr Rhodri Phillip and Dr Alan Mistlin

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THE REMEDY TEAM

PHYSIOTHERAPIST

Physiotherapists have a role in rehabilitation throughout an amputee's journey, including preparing for amputation, post amputation prior to receiving a prosthetic and following prosthetic fitting. Treatment may include a combination of manual therapy and exercise and can also include water-based sessions in a specialist hydrotherapy pool.

Pre-amputation physiotherapy aims to best prepare you for post amputation through education, pain management advice, practising transfers and use of walking aids, and optimising joint and muscle strength and mobility to prepare for prosthetic use. *Post-amputation* the physiotherapist is there to best prepare you for prosthetic use, the focus remaining similar to that of pre-amputation.

Following *prosthetic fitting* the physiotherapist will work on many aspects of your rehabilitation. The focus is always on optimising prosthetic use to achieve functional goals – whether it be upper or lower limb specific. For lower limb amputees, for example, this would include learning to walk and best utilise the various prosthetic devices, as well as prosthetic skills training to learn how to negotiate everyday obstacles e.g. slopes, stairs and more challenging terrain.

Sessions initially start in a clinical environment, including use of parallel bars and walking aids, but as you progress training transitions into the community to facilitate training in the 'real world'. Remedy physiotherapists have extensive experience working with amputees who were previously very active, and treatment can progress to include sport specific training such as running learning how to run with a prosthesis, if indicated. The physios also work closely with the exercise rehabilitation instructors to ensure that all aspects of your physical rehab are aligned and mutually supportive.

Team members: Sam Shotton, Kate Jones, Adele Wingrave, Tom Flint, Helen Saunders, Suzie Brook, Stephanie Stork, James Saunders

REMEDY

THE REMEDY TEAM

OCCUPATIONAL THERAPIST

The Occupational Therapists (OTs) on our team are highly experienced in working with people who have had traumatic or planned amputations and will aim to help get the best possible outcome for you at every step of the way. This will involve helping you to overcome challenges, whether that is at home, returning to work, taking part in your chosen leisure activities (or even new ones) or simply getting yourself dressed and doing the dishes.

We will be focused on your wellbeing, helping you to set and pursue the goals you want to achieve in your rehabilitation. That focus also means assisting in all aspects of your rehabilitation from the provision of equipment, assessing home circumstances and making recommendations, advising on mobility aids and devices, through to relearning basic and advanced skills relevant to your personal independence, hobbies and work roles. It can also mean looking at sleep hygiene, pain management techniques, scar management and taking a lead role in upper limb prosthetic use. By working together, we can identify areas where interventions can have an impact that improves the quality of your life post –injury.

Team members: Allyson Ballard, Trish Chipman,
Alison Troughton

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THE REMEDY TEAM

EXERCISE REHABILITATION SPECIALIST

An exercise rehabilitation specialist plays a crucial role in pre- and post-amputation rehabilitation by designing tailored exercise programs to improve strength, mobility, and functionality. Pre-amputation, the focus is on maintaining overall fitness and preparing the individual for surgery. Post-amputation, the role shifts to helping the individual adapt to their new body mechanics, regain strength, and learn how to use prosthetics if applicable. They provide support, motivation, and guidance throughout the rehabilitation process to optimise the individual's physical outcomes and work towards their rehabilitation goals, often working in close partnership with the physios to work towards mutual goals.

Team members: Jack MacRae and David Fabricius

CONSULTANT CLINICAL PSYCHOLOGIST

Clinical Psychologists draw on psychological science and behavioural theory to help address psychological barriers to patients achieving optimal rehabilitation outcomes. Our clinical psychologist specialises in working with people who are experiencing psychological and emotional difficulties arising from personal injury, major trauma, and critical illness. However, clinical psychology is not just for people who are experiencing psychological distress. The psychology service within Remedy also works with people who consider themselves psychologically well, but who might be struggling to achieve behavioural changes recommended in their rehabilitation. For example, adherence to an exercise plan or smoking cessation. The clinical psychologist is embedded within the Remedy team rather than relying on an off-site service provider, to promote a psychologically informed rehabilitation service at every level which then predicts optimal rehabilitation outcomes.

Team member: Dr Matthew Beadman

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THE REMEDY TEAM

CONSULTANT PAIN SPECIALIST

This is a consultant anaesthetist who specialises in pain management. Potential care input encompasses everything from talking therapies, to oral medication, topical medications and targeted injections as required. Most of these options can be delivered in a clinic setting, though some will require attendance at a hospital for guided procedures. The aim is to complement the therapist delivered care and to optimise a patient's pain management. By working as part of the team the Pain doctor is able to ensure treatment fits seamlessly with the rest of the team's inputs. Interventions can also be timed such that therapy can take advantage of the pain relief window to maximise functional restoration.

Team member: Dr Alex Kumar

ADMINISTRATION SUPPORT

The Remedy administrator is in a key role, linking you with the wider Remedy team and ensuring your care is being delivered as you expected. They will be the first point of contact for arranging rehab provision, setting clinic and review dates and making sure you and any other members of your wider support team are able to interact with the Remedy clinical team. For those patients that take up residential rehab input a once weekly catch up allows you to highlight any concerns or issues or get updates on planned care. They will also prepare and send out cost estimates for care plans, as well as keep track of how many funded sessions remain, highlighting early when further funding will be required to maintain care input.

Team member: Adam Harvey

REMEDY

ASSESSMENT: PRE-AMPUTATION

Around 120 minutes

Not all patients will have the opportunity to discuss amputation prior to it happening, either secondary to the trauma of the injury or because amputation is necessary to save life. For those that do the decision can be a very difficult one, with patients often hearing multiple opinions from a range of specialists. The internet will also provide patients with a range of good and bad stories to further muddy the water.

Our team have looked after multiple patients in this situation and can help in variety of ways. This can include ensuring all has been done to make sure amputation is the right decision, through to supportive conversations discussing the pros and cons related to a patient's specific scenario, and advice on future prosthetic options, likely long-term prognosis and expected functional level.

This is all usually carried out in a clinic setting with all of the Remedy team specialities represented, and often with the prosthetics team in person or remotely. Taking into account any further information provided by your care team we will explore your specific case and assess your current physical and mental status. From that we are able to advise on further inputs prior to amputation, aspects of the surgery that may help you, the post-surgery phase and subsequent rehabilitation needs. Whilst there are similarities between cases, the aim would be to provide you with bespoke advice and future plans to optimise your recovery and subsequent functional level.

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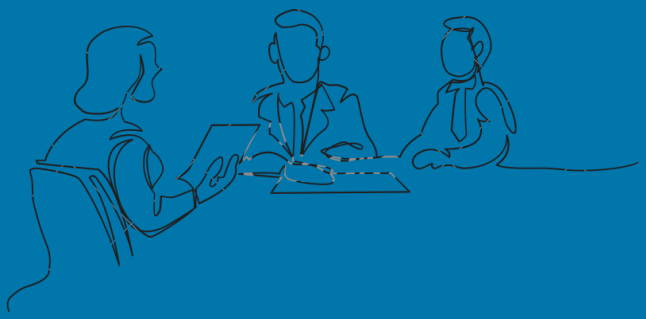
ASSESSMENT: POST-AMPUTATION

Around 120 minutes



For some patients' amputation will have already occurred. Prosthetic input may have started or been limited for a variety of reasons. We assess you in clinic with all of the Remedy team specialities represented, and often with the Proactive Prosthetics team.

We are also happy working with other prosthetic providers and can join with them remotely if need be.

We would assess your current physical status, current and planned interventions or treatments, and look to formulate a plan for taking your rehabilitation forward to optimise your recovery and ultimate functional level.

REMEDY

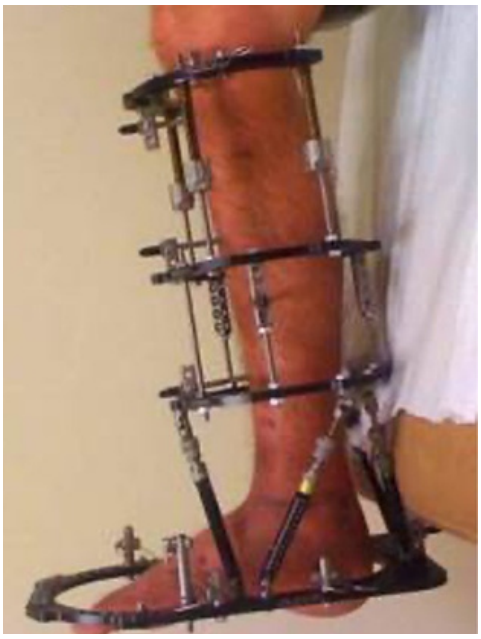
THE SURGICAL DECISION TO AMPUTATE

For many this won't really be a decision as often there are many good reasons why amputation is the next best step.

For some though it can be the dilemma of chronic pain and restricted mobility versus the risks of further surgery and the implications of amputation, often mixed in with a desire to reach a clinical end point and get on with life.

Whilst this is often a discussion already had with your surgical team there are some areas where we have had experience of other patients benefitting from other inputs. These options will be discussed in the next few pages.

Ultimately the majority of patients considering elective amputation will have an amputation. But doing so knowing they have exhausted all other options can be helpful, especially if complications occur post-amputation.



REMEDY

PRIOR TO AMPUTATION

OFF LOADING BRACE

There are various commercial versions of this device but essentially it is a carbon fibre ankle foot orthosis (AFO) that reduces the body weight going through the ankle and foot. It can therefore be of benefit in patients with significant trauma to the foot and ankle that results in weight bearing pain.

The reduction in body weight is thought to be between 50-80% and enables patients to mobilise more easily and with a reduction in pain. Hopefully this translates to increased ability to take part in activity and, in some cases, return to sport.

The devices also mimic a below knee socket amputation socket in aspects of the weight bearing just below the knee. In that respect it's a halfway house towards what wearing a socket on a daily basis would be like. As such it can often be a very sensible next step for a patient with foot and/or ankle issues who is contemplating amputation. In fact, many British military surgeons wouldn't now proceed to elective amputation in such cases without trialling an offloading brace first, given our clinical experience of the benefits.

There are some drawbacks, such as needing a slightly bigger shoe on the brace side, the need to wear a compression sock, and the potential for different versions if using it for everyday walking, as well as running. However, for patients who still ultimately end up with an amputation, very few regret having tried such a device, and it often helps cement their decision to amputate or not.

REMEDY

PRIOR TO AMPUTATION

OPTIMAL REHABILITATION INPUT

The Remedy team has a wide range of therapists and clinical team members who have extensive input in optimising patients' recovery. Utilising the team we can assist in multiple ways, encompassing all aspects of day-to-day life, as well as more specialist areas such as sport or physically demanding roles. For some people rehabilitation means physiotherapy, for us it is always much wider than that.

The previous team member descriptions explain their areas of expertise, but the important element is that they all integrate, and by working as team enhance the effect of each other when done in combination. A rehabilitation prescription should be viewed the same as that of any drug – right interventions at the right time in the right dose and frequency for the right amount of time. Not unlike a drug, if something isn't working or the side effects are not tolerated you look at a different way of achieving the same aims.

So, as a team we will often look at a patient's stated goals and consider whether a period of team delivered rehabilitation may help avoid the need for amputation or provide greater clarity as to the need. We can also support the limb salvage period with what will often be a more comprehensive and complete rehabilitation package than may have been delivered to date, hopefully optimising the chances of a successful outcome. If amputation still ends up the most appropriate next step the patient will be in the best possible physical health to gain the most benefit post-surgery.

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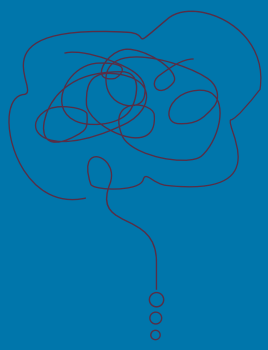
PRIOR TO AMPUTATION

ADDRESSING PSYCHOLOGICAL BARRIERS TO OPTIMAL REHABILITATION OUTCOMES

It is not unusual for people to experience psychological reactions following major trauma. These reactions might include intrusive memory symptoms (flashbacks or nightmares), disturbed sleep, feeling low in mood or depressed, feeling unusually anxious, angry or irritable, or noticing negative changes in the way one sees oneself, the world, or the future. It is important to consider these reactions within a rehabilitation plan, because psychological and physical factors often interact and pose a barrier to optimal rehabilitation outcomes. For example, if someone is feeling unusually anxious, this might affect their ability to focus attention on rehabilitation. If someone is feeling low in mood or depressed, this might affect motivation for rehabilitation.



Prior to surgery, it is important to address any psychological barriers to optimal recovery, so people have a solid foundation from which to take on the challenges of post-surgical rehabilitation.

Post surgery, it is important to address any psychological barriers to people achieving optimal rehabilitation outcomes and adjusting to living well with their prosthesis. At Remedy we take a 'whole team approach' to the psychological health and wellbeing of our patients, because we recognise its importance in predicting rehabilitation outcomes.

REMEDY

PRIOR TO AMPUTATION

WHEELCHAIR PROVISION

Post surgery patients are likely to need a wheelchair, if not already using one. Maximising wheelchair skills, practising transfers and getting up off various surfaces and levels, and increasing a patient's confidence in the wheelchair are all important aspects.

Not unlike a bicycle or car seating position it is important that the wheelchair is the correct size, style and type for a patient's needs, as well as being adjusted to optimise fit. Our team can provide advice on options and assist in the selection and fitting.

MEDICATION

Depending on the nature of the pain being experienced and the pain management delivered so far, there may be a role for medication regime modification, the adding of other meds and the potential for specialist pain management input. Remedy does have access to specialist input, but all the team are well versed in the medications used in both chronic pain and in preparation for amputation.

With phantom limb sensations and pain quite common post amputation pre-loading of some of the more nerve focused medication options can be helpful in reducing symptoms post-surgery if instituted pre-surgery. This is because it can take a period of use before they become fully effective. Remedy has several chronic pain specialists who can also look at methods and techniques for reducing and managing chronic pain, other than purely pharmaceutical options.

REMEDY

POST-AMPUTATION

After surgery patients are often keen to get up on a prosthesis as soon as possible. Most surgical wounds take 2-3 weeks to heal, and a few extra weeks often allows the tissues to settle from the surgery and reduce the chance of breakdown with initial rehab input. Smoking greatly reduces the speed of tissue recovery, and we are most likely to see wound complications in patients who smoke. If possible, it is best to quit pre-surgery and support for this can be sourced via your GP.

During this period the important thing is to recover properly, look after the wounds and start trying to reduce swelling in the stump. This is best achieved with the help of a stump compression sock, the most common being a Juzo. Ideally this should be provided on leaving hospital, but subsequent shrinking will often mean the size needs to be changed a few times in the initial couple of months to ensure adequate compression. Patients should speak to their prosthetic team about this. Early rehab input will be focused on preventing soft tissue tightening/shortening and wheelchair provision should include a stump board to help prevent contractures. Ideally patients should have an exercise regime provided to help prevent soft tissue issues.

Once all wounds have healed and tissues are able to tolerate loading then prosthetic rehab can commence, in combination with the preferred prosthetic provider. Initially this may involve the use of a Pneumatic Post Amputation Mobility Aid, or PPAM Aid. This is an inflatable socket with a metal external structure enabling patients to begin walking on their stump. Whilst getting patients upright and moving can be psychologically helpful it also helps getting the soft tissues working again and prepares patients for their initial proper socket.

REMEDY

FITTING PROCESS

Every private prosthetic company is a little different and patients should discuss the local process with whoever they decide to go with. Allowing the post-amputation wounds to heal is important and generally that takes between 3-6 weeks. This also allows the tissues in the stump to settle from their inflamed state and often makes the early fitting stages less painful. As a rough rule of thumb most companies will look to produce a first trial socket within a few days of the first fitting, producing a clear plastic socket that is ok to take home and start using in both rehab sessions and around the house. This will normally be with walking aids, whichever type is most appropriate.

Over the next 6-8 weeks further tweaks to the socket may be necessary and if there is significant shrinkage of the stump further trial sockets may be needed. Once the socket is fitting well and not causing any problems then a definitive socket will be produced, normally from carbon fibre. This socket can potentially be personalised with different external fabrics. Further socket production will then depend on how the stump changes, how comfortable the socket proves to be, and any areas of rub or discomfort that come to light.

For patients making use of socks to help pad inside the socket the maximum normally acceptable is three thick ones. Once at that stage most prosthetists will be planning for an expected socket change.

REMEDY

FITTING PROCESS

The other important elements of the fit are the liners – which come in multiple sizes, thicknesses and styles to accommodate the wide range of differing stump shapes and connection methods. Connection methods range from sleeve suspension (external sleeve holding the stump to the socket, to vacuum (sucking the stump into the socket – both passive and active systems) and pin-lock (uses a pin on the end of the liner to lock into the socket.

All the different types have pros and cons and the prosthetist will be able to determine the best for the patient, based on experience, the demands the patient is placing on the device and the activities planned.

For those patients with below knee or through knee devices a significant degree of weight bearing will be through the stump itself, for most above knee patients the weight bearing is done through the pelvic bones.

REMEDY

EARLY POST-AMPUTATION COMPLICATIONS

WOUND ISSUES

It is relatively common to have a few issues as wounds heal. As scars form, they will stick to tissues below and so early moisturising and massage to the surgical scar is always beneficial. This will often need to be continued for around six months post-surgery for the best effect. The occasional dissolvable suture may also come to the surface. It's important to not pull these as they can be tethered to deeper structures. Often simply snipping off the bits that are proud of the skin is enough to stop them irritating and the rest will dissolve or come out in due course. As mentioned previously stopping smoking will greatly increase wound healing and is ideally completed pre-surgery. Open wounds can get infected and if that occurs prompt and effective antibiotic therapy is needed. Don't delay in highlighting new areas of redness or discharge to your medical team.

POST-OP SWELLING

This is very common, and it can be 12-18 months before the stump shape fully matures and achieves a consistent size. This is a combination of post op swelling and subsequent redundant muscle atrophy. In the initial stages compression socks are used to reduce swelling and the size will need to be changed to maintain a consistent compression as swelling decreases. Patients can still find compression useful in later periods as time on the prosthetic, especially as tolerance and use increases, can lead to swelling. Simple interventions such as keeping the stump raised when resting and using a stump board in the wheelchair can also help.

REMEDY

EARLY POST-AMPUTATION COMPLICATIONS

SOFT TISSUE ISSUES

Post-amputation any chronic issues with the muscles and tendons secondary to the pre-amputation state can become more obvious. This can range from fixed flexion deformities at various joints to asymmetry of muscle bulk and decreased stability and balance. The issues can be away from the amputation, affecting the other side or lower back, etc. Addressing and optimising things pre-surgery is always best, but some aspects may not be addressable till post amputation.

The use of a stump board whilst in a wheelchair can help, as can a good stretching routine. Some elements will only start to correct once patients are up and using their prosthetic. Our team are able to provide pre- and post-surgery advice to minimise the impact of these issues on your rehab.

STUMP PAIN

This is very common post-surgery and can take a little while to settle. Both soft tissues and bony areas can be painful, and this may increase when loading them in the PPAM Aid or early sockets. It can also be associated with an area of infection so is often best checking with healthcare professionals if you are worried. Patients are often placed on a reducing course of opiate and anti-inflammatory medication to help deal with this. Cool packs and ice can also help.

REMEDY

EARLY POST-AMPUTATION COMPLICATIONS

PHANTOM LIMB PAIN/SENSATIONS (PLP/PLS)

This is very common, and patients will often pre-emptively be placed on neuropathic medications ahead of surgery to reduce the severity of the symptoms. Essentially the brain is continuing to register the limb as being there but is obviously not getting the right signals back. So, patients often report sensations of their foot or hand being in odd positions or cramping or suchlike. The aim of the neuropathic medication is to reduce the sensitivity of the nerves and reduce the intensity of any pain. Over time the brain will recalibrate, and some patients report telescoping, where the phantom limb shortens up towards the end of the stump. Most patients will be able to wean down their neuropathic medication over the first few years.

There is some evidence that PLP can be reduced by nerve surgery techniques at the time of amputation. The terms used are Targeted Muscle Reinnervation (TMR) and Reintegrated Peripheral Nerve Interface (RPNI) surgeries. They will also reduce the likelihood of neuromas, sensitive ends of cut nerves that can interfere with prosthetic fit in the longer term. Patients are encouraged to discuss the use of such techniques with their surgical team ahead of any elective amputation surgery

Some patients also report what is termed visceral stimulation. Because both pain and involuntary control of bodily functions are mediated by a system called the autonomic nervous system, going for a pee, opening bowels or having sex can all lead to an increase in PLP symptoms. This can be quite disconcerting first time but generally settles with time. Prior awareness reduces the surprise.

REMEDY

MEDIUM/LONG TERM COMPLICATIONS

SKIN AND WOUND ISSUES

These issues can arise from time to time and it's not unusual for hair follicles to get a blocked and potentially infected from time to time. Many prosthetic users report the use of antibiotics on a yearly basis when these infections don't settle with simple management. Issues can be minimised with good skin and liner hygiene, addressing issues early and regular moisturising and tissue massage. Barrier creams can also help at areas of rub. As scars mature, they can form clefts and areas of tightness. These can then lead to skin breakdown or infection. Again, good skills and drills reduce the likelihood of these progressing to needing antibiotics.

As muscle tissue atrophies (wasting due to disuse) and swelling reduces patients can be left with loose skin areas or tissue that compromises prosthetic fit. In some cases, this can require stump refashioning in order to tighten everything up. This is often done by plastic surgeons and whilst it does mean a period of post-op recovery it can be one step back to go two forward if prosthetic utility has been compromised. As a team we are used to helping patients recover post such inputs and work with external plastic surgeons to ensure seamless post-op recovery support.

REMEDY

MEDIUM/LONG TERM COMPLICATIONS

SOCKET FIT

This can vary as tissues mature over the first 12-18 months, and when a patient puts on or reduces overall weight, adds muscle mass, or with the weather or periods of immobility such as long haul flying. The prosthetic team will always look to help as required but the simplest way to manage changes in fit is often to make use of the socks provided. It is normal for patients to have to vary the number of socks they may use throughout the day to fill the socket space as swelling increases or decreases. The socks are termed ‘thick and ‘thin’ and once a patient is regularly using more than three ‘thick ‘socks it’s time for a new socket.

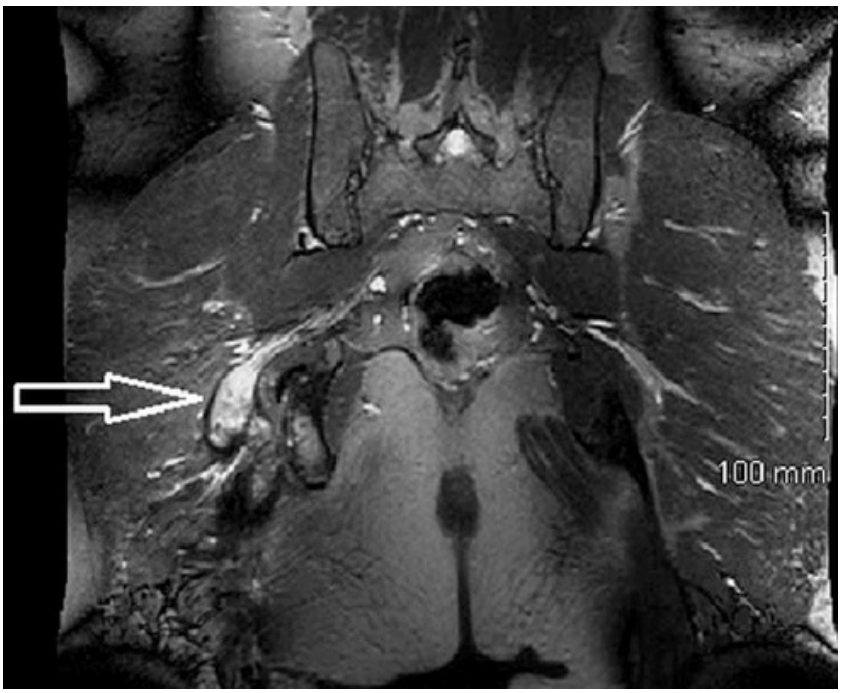
Patients can also suffer from particular areas of rub from time to time and this may require the addition of bits of padding or modification of the trim lines. Less commonly it can necessitate changes in suspension method or change of liners.

The important thing is to feed back to the prosthetist so they can optimise things.

REMEDY

MEDIUM/LONG TERM COMPLICATIONS

NEUROMAS



When nerves are cut in surgery they form a bud-like projection on the end as they try to relink with the previous other part of the nerve. Over time these bud-like ends can become sensitised and may be a source of pain, either local to the nerve or projected down the previous course of the nerve in a phantom fashion. They are often identified clinically by tapping over the end of the nerve, which reproduces the symptoms. Neuromas occur in 100% of cut nerves but some studies have shown only 10% become symptomatic. If neuromas are suspected investigations can include MRI or USS with the use of guided injections to check that the neuroma is the source of the pain.

If a persistent issue affecting socket use, then surgery may be required. Whilst a relative set back it often then means reduced pain and better socket comfort, resulting in a relatively quick recovery and improved prosthetic use subsequently. The surgical TMR and RPNI techniques plug the cut nerve ends into other nerve tissue or muscle tissue to try and avoid the bud formation and increasing evidence shows a decrease in the incidence of issues with cut nerves.

MEDIUM/LONG TERM COMPLICATIONS

LOW BACK PAIN AND OTHER JOINT ISSUES

It is not uncommon for patient to develop low back pain post-amputation. Some patients will have had reduced mobility ahead of their surgery and have become deconditioned. Beginning to walk again and be more upright often results in a degree of low back pain, as can the asymmetry of walking with a prosthetic on one side and not the other. In the majority of patients this will settle with time as gait becomes more normalised. The use of certain prosthetics is also associated with less back pain than some devices. Generally, the microprocessor-controlled devices typically help with this.

Studies have shown the increased rates of osteoarthritis (OA) (wear and tear arthritis) in the other leg in amputees. This is due to the extra reliance amputees often have on their retained limb. Patients may already be at risk of OA secondary to other injuries to the other side too.

Optimising a patient's gait quality, fitness, flexibility, and general health all help to mitigate this, as does ensuring good prosthetic fit and the most appropriate component choices. Our team is well placed to address all of these elements. Whilst not preventing subsequent issues it does minimise the likelihood of them occurring, as well as the severity if they do develop.

REMEDY

LIVING WITH AN AMPUTATION

STUMP CARE

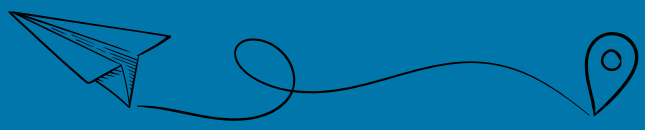
Maintaining a good quality stump is key to regular prosthetic use. This ranges from regularly moisturising and cleaning the stump, managing sweat and areas of rub, addressing area of inflammation early and aggressively, changing liners and socks when worn, and feeding back early to the prosthetic team when socket comfort drops below 7/10. They key is not letting an issue become a chronic problem.

PSYCHOLOGICAL ADJUSTMENT

Some people experience psychological challenges as they adjust to living life with a prosthesis. These psychological challenges might include feeling self-conscious or anxious in social situations, experiencing psychological distress in response to the sight of their prosthesis, or changes in mood - particularly if they are experiencing pain or fatigue. For some people, these psychological challenges might improve as they make progress through their physical rehabilitation. Other people may benefit from working with a clinical psychologist, whose role is to apply psychological science to helping people address these psychological challenges. However, clinical psychologists do not just work with people who are experiencing distressing psychological symptoms. Some people may consider themselves to be doing well psychologically but might be struggling to make certain behavioural changes which have been recommended in their rehabilitation. For example, they might be finding it hard to adhere to a programme of exercise or to quit smoking. Clinical psychologists often work with people to help achieve these behavioural changes, drawing on behavioural science - after all, we can probably all relate to the fact that behaviour change is often easier said than done.

REMEDY

LIVING WITH AN AMPUTATION



TRAVELLING

Most patients will end up with a range of prosthetic devices for different scenarios and may also still need to have access to a wheelchair when travelling, and/or other mobility aids or equipment. This can mean needing a vehicle big enough to accommodate the extra kit, as well as normal items, through to the need for extra assistance being planned for train journeys or flights. The level of disability assistance available at hotels, both UK-based and abroad, can be quite variable. It is always best to enquire prior to booking to ensure facilities will be appropriate to a patient's needs. Patients will also need to check with their travel insurance as to whether they need to change or upgrade their cover, especially as some prosthetic components can be quite expensive to replace.

CLOTHING

Below knee amputees generally have less issues with clothing options than those with through or above knee amputations. But there are still some general considerations. Socket edges are rigid carbon fibre and so will cause rub on clothing. In below knee amputees this commonly occurs at the knee and some patients find benefit in an extra layer of material sewn in under the knee area to better protect the material from being worn through. Looser fitting trousers also help. Some patients, particularly above knee amputees find wearing shorts easier as it allows for freer movement of the knee prosthetic.

There are a number of manufacturers and big companies that produce clothing and footwear designed to make it easier for amputees, utilising a range of different fastening devices enabling access to prosthetics more easily, or simply making it easier to dress. A particular benefit in upper limb amputees. The team can help guide patients in which options may best help them.

REMEDY

DAILY USE DEVICES

Remedy work with a range of prosthetic partners who ensure access to the whole of the prosthetic market. To start with most patients will begin with reliable, stable prosthetics appropriate for their level of amputation. As skills develop and confidence improves patients will be transitioned onto more functional items or prosthetics for specific tasks as required.

For all above/through knee patients' standard practice is to make use of microprocessor-controlled knees that provide greater stability and a more natural, confident walking gait that that seen with mechanical knees.

Below knee patients will typically begin with a simpler mechanical foot but will progress onto more active options. They also often undergo trials of microprocessor-controlled feet and powered options that can make a significant difference to the ability to traverse slopes and difficult ground.

The more advanced options tend to come with a weight penalty, that needs to be considered. It is not unusual for patients to have a range of daily use items to cover their various needs. For example, the addition of a simpler waterproof option for showering and using in salt water.

REMEDY

DAILY USE DEVICES

Upper limb devices can range from simple hooks, claws and grips to body powered devices (often using the opposite shoulder) to myo-electric devices capable of carrying out multiple functions. There are many devices on the market, and all come with different pros and cons. Patients often have a range of devices for different scenarios. Cosmetic options can also be useful, though there is yet to be a convincing cosmetic arm that retains the high level functions of a myo-electric device.

Finding the right devices for a patient is a combination of identifying the various needs, using an experienced upper limb prosthetist and a bit of trial and error. Often patients will try a range of devices on trial before committing to a purchase. Cosmetic options for both upper and lower limb can be very convincing but often preclude higher level functions. Skin tones can be correctly matched and even tattoos, hairs and body imperfections added to make them as accurate as possible.

REMEDY

SPECIALIST DEVICES

Every patient will have different needs and as prosthetic utility improves there may be a need for more specialised items. Examples could include a cycling leg, skiing leg, climbing arm or suchlike. Normally a prosthetist who has produced such items before is best employed and most companies have someone appropriate.

Some higher-level skills require further training, and a good example is running. An amputee gait will be quite different as a result of the nature of prosthetic limbs. The Remedy team have a long track record of getting patients back to running and do so with the use of our return to running criteria.

These were developed over many years of working with military amputees and look to identify the necessary physical training required to successfully get back to running in as safe and effective way as possible. The running criteria are useful in directing rehab physical therapy and identifying when a patient is ready to start running drills. There are multiple running devices out there, but the team will look at a patient's requirements and help them choose an appropriate device. Trials of potential options are also sometimes used. The aim is to maximise function and form whilst doing so in a safe a manner as possible.

REMEDY

NHS VS PRIVATE PROVISION

The main difference between NHS and private care is the budget the teams have to work with, which results in differences in devices available, time per patient and the speed of delivery. The NHS budget per amputee is not high and, whilst many patients may not be able to make use of their allocation for various medical reasons, the reality is that access to higher end equipment is subject to various financial restrictions. The volume of work passing through NHS centres often also means that turnaround times for inputs can be measured in weeks to months. In contrast private prosthetic turnaround times for sockets and interventions are often measured in days to weeks. They also have access to a much greater range of devices, allowing for bespoke prescriptions to best aid a patient's functional recovery. If care is being delivered as part of a legal process many of these decisions will need to be evidence based and as a result trials of different options will often be part of a patient's care plan. Ideally, though, this ultimately results in the best device for that particular patient. The most expensive item isn't always the best for that individual.

It is perfectly fine for patients to remain under the care of an NHS team and a private team. Devices provided from one remain under the clinical remit of that organisation and components cannot be swapped between services. Whilst this can be occasionally frustrating it is done so to best protect the patient from harm and avoid equipment failures or warranty invalidation. Given the expense of many prosthetic devices these policies are best adhered to.

OSSEOINTEGRATION

Osseointegration (OI) has been used for many years in the area of dental implantation. Several surgical techniques are now available that look to use an implant in the patient's bone to act as an anchor onto which prosthetics can be attached. Whilst the ideal is a reasonable length of bone to attach into, there are techniques to compensate for short residual limbs. These devices make use of external parts that are designed to break away rather than risk harming the bone anchor.

The main benefit of such techniques is to avoid the need for a socket and all the associated complications they bring. Some patients describe osseoperception, the ability to sense the nature of the surface under their feet – gravel, sand, tarmac, etc.

It also allows patients to utilise their own skeleton and muscles to suspend and control the position of the prosthetic, particularly of benefit in above knee amputees and above elbow amputees. This can help maintain bone density. It does carry a significant risk of infection of the bone, with variable rates described in the literature of less than 10%. A significant infection could result in further amputation of the residual limb. As a result, this is often used in patients with an established amputation who have failed to tolerate sockets, rather than as a primary procedure.

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OSSEOINTEGRATION

Osseointegration is not currently supported by standard NHS funding, but there are several private providers in the UK and aboard who are able to provide this service. All the mainstream service providers utilise a clinical team to provide pre- and post-surgical support. A psychology assessment is also part of the work up as there will be a part of the metalwork standing proud of the end of the stump. Active smoking and diabetes are contraindications and patients will not be able to do impact activity (e.g. running) post procedure.

This topic can be discussed with patients who are interested and there is always the option to be referred to one of the UK services to be assessed and discuss the process further. Relative costs are reasonably comparable to socket use, given the cost of the surgical procedure, the need for regular follow up and the replacement parts needed externally on a periodic basis. Post-surgery Remedy are able to provide rehabilitation input and have experience of working with OI cases.

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PROSTHETIC PARTNERS

Remedy are lucky to work with some great prosthetic partners, which are listed below. We are also happy to work with any other provider you may choose to look after you.

Dorset Orthopaedic Ottobock.care

Prosthetics and Orthotics

Clinics at Amersham, Burton, Egham, Glasgow, Manchester and Ringwood

Satellite Clinics at Cardiff, Maidstone (Kent), Newcastle and Taunton

Website: www.dorset-ortho.com

Enquiries to enquiries@dorset-ortho.com

London Prosthetic Centre

Clinic in Chessington

Website: www.london-prosthetics.com

Enquiries to enquiries@london-prosthetics.com

Proactive

Prosthetic and Orthotic Care

Clinics at Bristol, Godalming, Cambridge, Manchester and Leeds

Satellite clinic at Exeter

Website: www.proactiveprosthetics.co.uk

Enquiries to clinic@proactiveprosthetics.co.uk

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OTHER INFORMATION AND RESOURCES

- Access Adventures - 'Delivering life-changing adaptive adventure sports'.
  Link: https://www.accessadventures.co.uk
- Day One Trauma - 'Rebuilding lives after catastrophic injury'
  Link: https://www.dayonetrauma.org
- Limb care - 'Offering education for all limb impaired individuals in the UK'.
  Link: https://www.limbcare.org
- Limb Power - 'Engaging amputees and individuals with limb impairments in physical activity, sport and the arts'.
  Link: https://www.limbpower.com
- Limbless Association - 'No amputee need cope alone'.
  Link: https://limbless-association.org
- PIRPAG Exercises. Link:https://www.nbt.nhs.uk/bristol-centre- enablement/services-at-centre/prosthetics/pirpag-exercises
- Steel Bones - 'Helping all amputee families live life to the full'.
  Link: https://steelbone.co.uk

REMEDY

BOOKLET SUMMARY

As a team we can understand that the prospect or reality of becoming an amputee can be very daunting. The aim of this booklet is to increase your awareness of the topic to ensure you are as informed as possible.

It is not exhaustive and you may have more questions as a result. Please do feel free to get in touch with us with any questions you do have.

If considering an amputation it is important you go into any elective surgery with a plan in place and awareness of the likely potential setbacks and how to manage them. Ideally you won't have any but always better to be prepared. Our aim is to help you with that and then hopefully support you in maximising your post-amputation recovery.

Best wishes

Remedy Team

REMEDY

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