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Upper limb technology

What's new in partial foot prosthetics

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Welcome to the second edition of Amplified for 2018.

This second edition comes with exciting news. Limbs 4 Life is proud to announce AMP-ED Up! National Amputee Conference to be held in Canberra in 2019. The two-day AMP-ED Up! Conference will give you the opportunity to speak to prosthetic manufacturing companies and find out about the latest in prosthetic technology, meet amputees for the first time, hear from speakers and most of all have a great time. This is an event you won't want to miss. Registration details will be available soon.

We are excited to launch our National Amputee Advisory Council initiative. The Council is made up of amputee members from each state and territory of Australia who will guide our programs and service delivery both now and into the future. And finally, don't forget to put National Amputee Awareness Week 2018 in your calendar and let us know about your activities between October 4 – 11.

INCORPORATING THRIVE

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Supporting my partner after amputation Thirty-six years ago, David, Sharon and their two boys were a young family enjoying life until an accident in 1982 changed their lives forever.

Prior to David's accident, life was normal for the Hendren Family. At 34 years of age, David was working full time as a Group Booking Agent for Air New Zealand in Sydney and Sharon was a school aid working for a local pre-school in their hometown of Ashfield in New South Wales and they were renovating their home. They had two young boys, David (12) and Sean (10) and life was busy.

According to Sharon, David was an active father and a passionate sports person. "He loved participating in sports; squash, surfing, football, a bit of golf and hockey. The only thing David didn't enjoy was running. So to stay fit, for Christmas that year, he requested a push bike for training," Sharon said. On Boxing Day 1982, David and his eldest son decided to go for a ride together. David's son wanted to show his dad the latest tricks he'd learnt at the local skate park. "The longer I waited for them to return, the surer I felt something terrible had happened," Sharon said.

Sharon looked out of the upstairs window only to see their son getting out of a police car. Unfortunately for Sharon her intuition didn't fail. On the ride back home, David was struck by a 'mini-moke' with a bulbar driven by a young boy. The driver had come onto the wrong side of the road, hit David and sped off. The accident resulted in David landing in the gutter on his right shoulder. He suffered spinal and head injuries. His right leg had been degloved (loss of muscle tissue and skin), and both bones in his lower leg had broken in seven places.

The doctors at the Concord Repatriation General Hospital tried to save David's leg but after ten surgical procedures the outcome wasn't good. They explained that David may never regain the use of his right arm and he would probably need to have his right leg amputated below the knee because the damage was extremely severe. David had a decision to make! He wanted to get on with his life, so he decided on an elective amputation.

"The accident and the decision to amputate David's leg changed not only his life, but our family's life as well. I found myself juggling work, taking care of our boys, managing the household and I was driving back and forth to the hospital to visit David," said Sharon.

In total, David spent six-months in hospital and rehabilitation. Sharon said at the time there was no support or information available for David or their family. "David never received any counselling or support; there were no opportunities to meet with or speak to another amputee. There was just no one to talk to about what we were going through," Sharon affirmed.

When doctors gave David the all clear, he returned home, but life was different. David could no longer play sport or, kick a footy with the boys. David was unable to return to work because he experienced debilitating back pain and he had limited movement in his arm. At home, David spent most of his time using crutches because the skin on his stump kept breaking down and he was unable to wear his prosthesis. Due to the on-going infection doctors decided on stump revision surgery. While in hospital David's crutches slipped on a puddle of water and broke his hip, which required a pin and a plate.



Sharon said David became depressed. He also experienced mood-swings and frustration due to the fact that he couldn't do what he used to do. Sharon also struggled emotionally but the couple were fortunate to have the support of Sharon's grandmother.

Despite having to deal with their new situation Sharon and David were determined to get through it. "In some ways the accident brought David and I closer together. David wanted to get better and be as good as he could be for the boys. We just felt that we needed to try to get on with life.

"I don't know where I got the energy from to get through everything. I guess you just do. I knew that I had to look after my family. It was a tough time." The amputation tested our marriage in lots of ways, but we got through it, Sharon said. Because amputation is such a traumatic life changing event you need all the patience, strength, perseverance, understanding and love to help your partner recover. You also need to take care of yourself and have someone to talk things over with and support you.

Eight years following the accident, David changed doctors and his treatment plan. Slowly he started to get better and things began to get brighter for the Hendren family. They could no longer complete the renovation on their home, so they decided to move to a farm in Moruya, on the far south coast of New South Wales. They were surrounded by wildlife and solitude of the countryside. This serene environment helped to alleviate David's depression.

It was at that time David joined the local golf club, he also found out about golf for amputees.

David and Sharon attended an amputee golf competition not long after. The great thing about amputee golf is that it provides a strong support system; not just for the amputees, but for partners as well. Partners get the opportunity to speak with other partners about life, the challenges we face and our day to day lives. It was a wonderful opportunity to be able to speak to others in a similar situation to my own. In David's case it was the first time that he had been able to speak to another amputee in 23 years," said Sharon.

"For anyone supporting someone new to the limb loss journey, the first few years can be hard. Life does get easier in time, and with love you find a different path together," Sharon said.

Golf Australia works to support inclusion into golf for people with disabilities nationally. If you are an amputee and are interested to find out more about participating in golf or would just like to find your nearest PGA All Abilities Coach, visit www.pga.org. au/find-a-pga-pro. You can also contact an amputee golf association in your capital city.



'Get Your Ribbon On' for National Amputee Awareness Week -NAAW18

October 4 -11 is National Amputee Awareness Week. This annual 'Awareness Week' aims to build community knowledge of limb loss and minimise the stigma that amputees can face, encourage good quality of life outcomes and educate the wider community of the prevalence of amputation in the hope that people better manage their healthcare.

Get on board this year's campaign and show your support. Taking part is easy. Order your free ribbons, and upload a photo of you, your family and friends wearing your ribbons on social media. Don't forget to use the hashtags #GetYourRibbonOn, #NAAW18, #Amputees. For more information or to order your FREE ribbons contact Limbs 4 Life today.

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Meet the members of our National Amputee Advisory Council

Limbs 4 Life is proud to introduce our National Amputee Advisory Council.

The objective of the Council is to provide insight and information about areas of interest at local levels which impact individuals living with amputation and their caregivers and to ensure that Limbs 4 Life's programs and services are effective tools to promote positive outcomes.

The Council is comprised by eight members from each State and Territory of Australia.



Priscilla Sutton Australian Capital Territory Jamie Manning **New South Wales** Shane Grant Northern Territory Glenn Bedwell **Queensland**



Peter Stringer South Australia



Lyn Johnson **Tasmania**



Ren Gallet **Victoria**

Andrew Fairbairn Western Australia

Limbs 4 Life would like to thank all Council Members for their commitment to support and represent the Australian amputee community.

To find out more about the National Council, visit www.limbs4life.org.au/about-us/national-council-members



Upper limb prosthetic technology

The functional restoration of the hand or arm that has been lost or absent from birth has long challenged prosthetists, biomedical engineers and designers to develop and improve technology that will assist individuals to lead more functional and fulfilling lives.

In reality, upper limb prosthetics has lagged behind the advances in many areas of mechanical and electrical technology and it is only in recent times that we are seeing real progress into improving prosthetic componentry and ultimately function for upper limb prosthetic users.

Due to the limitations in prosthetic control systems, suspension systems and hand/terminal device

design, arm prostheses prescribed often have a limited overall range of functional abilities. Specific designs will be particularly good for robust gripping tasks, for example, in an industrial workplace but suffer from poor cosmesis, while some may have excellent cosmetic restoration but may be too fragile or prone to contaminant damage to be used reliably in these environments.

However, to blame the lack of 'cutting edge' technology as the only reason why upper limb prostheses have a relatively poor success rate or that they do not meet public expectations, we need to be aware and understand a number of other important factors.



Below elbow training prosthesis with a TRS cable operated, heavy duty 'gripper'.

Resnick (1) suggests rates of prosthetic abandonment or poor usage are consistently higher for those individuals with higher levels of limb loss and that 'other factors related to rejection include poor prosthesis fit/comfort, weight, repeated mechanical failure, unnatural look, pain, and the lack of tactile sensation.

Also, psychological and psychosocial factors related to prosthetic rejection include negative reactions of other people, low self-esteem, lack of acceptance of disability, unrealistically high expectations regarding prosthetic function, poor initial prosthetic experience and lack of training'.

If these factors can be managed well, there are many advantages of using an actively grasping prosthetic arm, even if that prosthesis incorporates more traditional technology. Functional improvement in activities-of-daily-living (ADLs) performance in personal hygiene, grooming, and dressing are more often observed compared with the use of passive prostheses (non-grasping) or none at all. Rock Gambrell (2) reported that 'regular prosthetic use may help users avoid future cumulative overuse disorders in the sound-side limb, as well as back and neck pain related to poor compensatory strategies, which are commonly reported in this population'. Biddis et al (3) reported that 'most amputees (68%) who have abandoned or rejected prosthetic use might be willing to reconsider using a prosthesis if improvements in technology were made at a reasonable cost'.

Let's take a brief look at some of the new advances in the specific areas of electric hand, control system and suspension system design that are rapidly evolving from theoretical concepts to commercially available componentry in general clinical use.

Hands

The introduction of the Touch Bionics i-limb multi-articulating hand in 2009 started a modern revolution in hand design with improved finger conformity around objects but more importantly allowed the user to change grip patterns away from the single, traditional '3 jaw chuck' position to a variety of pre-programmed grip shapes that greatly improved grasping ability over a wider range of activities.



Touch Bionics Revolution hand

The number of original pre-programmed grips has increased as these hands have evolved and now can even be accessed by a mobile phone app. A number of other hand designs such as the Otto Bock Michelangelo and Otto Bock BeBionic 3 hands have also offered similar multi-articulating designs with improved silicone glove durability and grasp power. Each design has its own unique functional characteristics that allow clinicians to better match these hands to different user needs.

In 2017 the TASKA multi-articulating hand was introduced and immediately set it apart with some unique design features. It too allowed shape conforming finger movements and multiple automatic grasp patterns that the user could access but it was the first electric hand to be fully waterproof



Otto Bock Michelangelo hand



Otto Bock BeBionic3 hand



TASKA Prosthetics hand

and finger joints that could be easily reset if excessive force was applied to them. By listening to user and clinician feedback the designer developed technical solutions that will improve hand durability, reduce costly repairs and reduce disruptions to the user's daily life. Cosmetic gloves are currently not available with this design.

Alongside the development of these hands is the advent of the electrically powered and myoelectrically controlled finger component. This technology was specifically intended for individuals with partial hand amputations that previously had few prosthetic options other than the use of basic static fingers or cosmetic gloves.

Again, Touch Bionics lead the way with their powered Digits in the early 2000's, and later with the i-Digits Quantum, that are mounted onto a custom prosthetic interface and are controlled by myoelectric signals from the small muscles of the residual hand and can automatically change grip patterns by simply moving the hand in space. Cost and complexity remains a barrier for access to this technology for a majority of the user population.



Touch Bionics I-digits electrically powered fingers

For individuals who have sustained finger amputations, simple but ingenious designs such as the body powered M-Fingers provide a relatively low cost and high dexterity option to restore active grasping ability and a normal hand surface area.

This design does not inhibit natural hand flexibility and allows the voluntary control of individual fingers. Another body-powered finger design that doesn't use cables but utilises levers to articulate the prosthetic fingers is the Naked Prosthetics finger options. Both these designs put cosmetic appearance second to grip function as cosmetic covers are often fragile and inhibit the functional potential of these devices.



Liberating Technologies body powered M-Fingers



Naked Prosthetics MCPDriver fingers

Control systems

Most people would be aware of cable operated (body powered-BP) and myoelectrically controlled (externally powered-EP) prostheses. They have been around for many decades and even though EP hand design and other components have evolved, the way they are controlled has been slower to change, until recently. The inability for the user to provide more complex control instructions to the EP elbow, wrist and hand components to allow the prosthesis to move in a more co-ordinated, natural way has been a major technological challenge. Recent advances in surgery and component design are now providing users the potential of complex prosthetic movement and even restoration of sensation. The most common surgical process now available is Targeted Muscle Reinnervation (TMR) where cut nerves of the arm are identified and re-inserted into sections of donor muscles of the chest or the residual arm. These muscles now become active to the new nerve supply and commonly produce six or more individual control channels that now can control an EP elbow, wrist and hand independently of one another using the nerves that originally controlled the natural elbow, wrist and hand. With training, the user thinks about moving a particular component and controls its operation directly, which is very different from the usual two-channel myoelectric systems.



Reinnervated pectoralis muscle (TMR) to control an Above Elbow prosthesis

Another emerging technology is the development of implantable wireless electrodes, such as the Ripple Neuro that can transmit up to 32 channels of data directly from the muscle to a suitably designed prosthesis and offers the possibility of fine, complex movements of individual fingers and more advanced forms of sensory restoration including touch, temperature and joint position awareness.

Suspension

The foundation of any prosthesis is the way it securely interfaces with the human body. Various socket suspension method designs, including harness straps, roll-on silicone liners, vacuum valves and anatomically shaped interfaces are the normal choices a client and the prosthetist make to best suspend the upper limb prostheses. However, wrapping the residual skin in a closed environment and confining natural shoulder movement with harnessing and rigid socket margins is often not well tolerated. Recent application of a bioengineering technology that allows the user to attach their prosthesis directly to the bones of the arm, usually the humerus, is providing a solution to the negative socket-tolerance and suspension issues.



Above Elbow prosthesis with an Osseointegration attachment



Osseointegration (OI) is a permanent surgical process of inserting a titanium fixture and external abutment components directly into the humerus. This technology emerged from the success of screw-in dental implants and lower limb prostheses and now has been adapted for use in upper limb prosthetics. OI is allowing prosthesis users to experience the unrestricted range of motion at the shoulder joint and the comfort of wearing a prosthesis without restrictive straps and sweaty sockets, a major design advancement. OI technology can be used to suspend any type of prosthesis and local and international experience suggests the percentage of complications, including infection, is very low. There are a number of different OI procedures available and the prospective user should research carefully what system would best suit their needs.

Even with the application of some of the advanced technology discussed, the prescription of the prosthetic design should be carefully focused on the primary functional needs of the user rather than trying to be a design that covers all possible activities, an unrealistic task even considering current technology. For the user, discussing prosthetic options with their Prosthetist is essential to define exactly the types of activities they require assistance with and what technology can be realistically funded and applied to them. This is a very important step in the process to successfully developing an appropriate design that will ultimately help provide reliable, basic grip function and assistance to the natural hand in a desired range of daily activities.

David Wilson-Brown Prosthetist-Orthotist CPO, BPO, MAOPA Synergy Prosthetics Pty Ltd

Limbs 4 Life would like to thank and acknowledge David Wilson-Brown, Touch Bionic/Ossur, Rehab Research, Ottobock health Care, TASKA Prosthetics, Liberating Technology and Naked Prosthetics for the use of images in this publication.

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The choices we make

As an amputee we have many choices to make. These choices start from the day we become an amputee.

After my accident the doctor at the hospital presented me with my first choice, he asked me where I wanted to go to have my treatment. I was in Mildura at the time and they didn't have the specialists to treat my type of injury at the local base hospital. The choice was between air ambulance to Melbourne or Adelaide. Adelaide was closer, but I was told that I couldn't have anyone travel with me on the flight, meaning that my wife Helen and the rest of my family would have to travel to Adelaide by car.

The next choice I was presented with was not mine to make; it was a decision made by the surgeons at the Royal Adelaide Hospital. The damage to my arm was extensive. I had a crush injury and severe burns from the heat in the chamber of the machine. My arm had to be amputated. The following morning, I started my new life as an amputee; it is a life full of choices and challenges.

From the beginning I was determined to make the most of what lay ahead not only for me, but for my family as well. I started to teach myself to do as much as I could with my remaining limb. I started to try writing with my left hand, dress and feed myself and all the other things that you don't think about, things that I had always done previously with ease; it was a big learning curve.

My next choice came a few weeks later. Helen and I had returned to Adelaide for my first checkup after being home for a few weeks. The doctor in Adelaide said he couldn't do much as far as getting a prosthetic arm for me but would ring a colleague he knew in Melbourne. We returned to where we were staying (in Adelaide) and while we talked about what we would do next and our plans for the future, my mobile rang. It was a man by the name of Kevin Harrison. Kevin made prosthetics and wanted us to come to Melbourne in the next three days.

Helen hadn't driven in the city before and she was worried about getting there, not to mention the traffic. Helen had to arrange time-off from work. We talked to Kevin at length and made the decision to travel to Melbourne the following Monday. Helen had to follow my directions to Melbourne and across the city to get us out to his facility in Burwood East.

It turned out to be a great choice! Kevin explained what kind of prosthesis he wanted to fit me with, how the socket would be made and the need to get authorisation from the insurance company to cover the costs. Over the next few months we made many trips back to Melbourne. In the end I was happy that I had a very good functioning arm. It looked very life like (which was important to me) and it worked well. I was told by Kevin right throughout the process that I would need to continually practice with the arm and dedicate a lot of time and effort to make sure that I could get the best out of the arm. I did this to the best of my ability.

As it turned out it is not just having the right equipment, it also takes time to ensure that the prosthetic arm does what you want it to do when you need it to - and then confidence to do it. We were also very lucky that when attending Kevin's clinic that we find out about Limbs 4 Life and the work the organisation does for the amputee community.

Since that time, I have met lots of both upper and lower limb amputees. I found that no matter what we have lost or what type of prosthesis we wear, we all have a story to tell and we can all help and support each other.



I was recently fitted with a new arm because like anything they wear out. This arm is an Ottobock arm fitted with a B-bionic hand and it allows me to do a lot more than my first arm did. I am now seeing a different prosthetist, David at Synergy Prosthetics and things are going well. Over the last 2 years I have been lucky enough to work with David's prosthetic students at La Trobe University where the students are learning to make moulds for limbs and learning how to fit a device, along with making sure that it works properly, and that it is comfortable for the user to wear. Seeing these young students learning their craft highlights to me that the future of prosthetics is looking good.

If we don't make the right choices and don't put in the time and effort with whatever prosthetic device we have, we may never feel we have done the best we can with the choices we have made.

Winston Long - Limbs 4 Life Volunteer





www.limbs4life.org.au 1300 78 22 31 info@limbs4life.org.au

Give away! Ditch the Dead Weight by Mike Rolls

Mike Rolls was a sports-mad teenager when he contracted a deadly disease on a football trip. Overnight he was fighting for his life. When Mike regained consciousness, he had lost his right leg, half of his left foot, two fingers and part of his nose, and had extensive internal injuries. His parents were told he had a five per cent chance of survival.

After a painfully slow recovery and eight years of living with a leg that would never heal, Mike made the extraordinarily difficult decision to have his remaining leg amputated. More than just a triumph-over-adversity story, Mike's Ditch the Dead Weight combines personal experience with proven scientific research and a practical methodology for letting go of anything that no longer serves you. An inspirational speaker and ambassador for Interplast Australia and Limbs 4 Life, Mike works as a mentor and counsellor to young people after illness or injury. He also represents Australia as a golfer.

For your chance to receive one of three copies of Ditch the Dead Weight, tell us when and where the AMP-ED Up! Conference is being held?



Email your answer to media@limbs4life.org.au by no later than 10 August 2018.





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Transitioning into the NDIS? We're here to help!

Many of our readers and members have contacted us with concerns about transitioning into the National Disability Insurance Scheme (NDIS). If you are finding it difficult to navigate the system, we are here to help you!

The NDIS is overseen by the National Disability Insurance Agency (NDIA). Amputees and people living with limb loss should contact the NDIA on 1800 800 110 to start the process.

During your initial phone call, you will be asked some eligibility questions, if eligible, the NDIS consultant will send you an 'Access Request - Supporting Evidence Form' which will need to be filled out with the help of your GP, Prosthetic Clinician or Healthcare Specialist. The NDIA will assess you on the information you have provided on the form. So, make sure you provide as much documentation as you can to support your application. You will then be contacted by the NDIA and provided with a 'Participant number.' This is the number that will be used for your plan.

The next step in the process is the 'planning meeting'. Once your Access Form is received and approved by the NDIA, a consultant will contact you to arrange the meeting. Your planning meeting can be conducted over the phone or you can request a face-to-face meeting. This meeting should take between 1 to 2 hours.

During the meeting, the Planner will talk with you about your goals, and what you need in order to achieve your goals. So be prepared! You might like to make use of the 'NDIS Guide' and worksheets which can be found on the Limbs 4 Life website, along with the equipment and service check-lists. At this time, you should also consider speaking with your prosthetic provider to discuss your prosthetic (and related goals) and an occupational therapist. This will help you to be more prepared prior to having your planning meeting.

After the planning meeting has been completed you will receive your NDIS Plan.

Since the initial roll-out of the NDIS, Limbs 4 Life has worked to ensure that all amputees and parents

of children with limb difference are equipped with information and support. If you require assistance with your NDIS application, please call us on **1300 782 231** or download our Guide to the NDIS for Amputees and People with Limb Difference on our website.

TIPS

- 1. Take copies of all paperwork prior to sending anything to the NDIA
- 2. Follow-up. Once you have your participant number, contact the LAC/Planner to schedule your Planning Meeting. Don't leave it too long.
- 3. If you receive your plan and it is different from what you discussed with your Planner, contact them immediately.





VALE: JOHN WILCKENS DENNIS BROOMFIELD AND RENNIE D'ARCY

It is with great sadness that we bid farewell to three of our valued and dedicated Peer Support Volunteers.

John, Dennis and Rennie were extraordinary gentlemen who were passionate about providing support to other amputees. Our thoughts and prayers are with their family and friends. They will be remembered for their selfless efforts, kind and generous spirit and their dedication to the amputee community.

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Partial foot prosthetics Not just a pretty foot

In a partial foot amputation, parts of the frontal section of the foot are surgically removed. This may be necessary following an accident or when there is a lack of blood flow to the foot due to disease.

The most common cause of partial foot amputation in Australia is due to diabetes and its related diseases. It may be difficult to understand how this can happen, but several factors may contribute to the amputation of toes and parts of the foot.

Diabetes may reduce perspiration (sweat) causing the skin on the feet to dry out and crack. Because diabetes also affects the nerves in the body (sugar deposits on the nerves), the affected person may not feel wounds developing from these dry cracks, or from something rubbing on the foot like a stone, a wrinkle in the sock or poorly fitting shoes. Diabetes severely effects wound healing which may cause the wounds to get bigger, the tissue becomes red and swollen and as a result, dies. This is also worsened by the fact that diabetes disrupts blood circulation which also results in tissue death.

After amputation there are several prosthetic and orthotic solutions that can be provided. These attempt to restore the parts of the foot that have been amputated, to control further deformity and to improve balance and walking. Unfortunately,



when you lose part of your foot, you will never be able to walk like you used to. However, some devices can help you get as close as possible to normal walking.

Custom silicone partial feet are one of these options. As the name suggests, these prosthetic devices are custom made and are completely moulded by hand to intimately fit the remaining part of your foot. Whilst they may look like a pretty foot, and are commonly mistaken for a cosmetic option, they are actually very functional.

The custom silicone foot is made up of soft silicone against the skin which is very comfortable and flexible as you walk, so you don't have any hard edges. However, the silicone that restores the part of the foot that has been amputated is firmer, which allows the person to put weight through the front of the prosthesis and roll over smoothly.

These feet can also be worn in wet environments like in the shower, at a pool or at the beach which makes balancing and walking in wet environments much safer. They are simple to use and just slip on the skin without any zips, Velcro or annoying closures which makes it easy if you have any problems with your hands.

If you are affected by an amputation of the toes or part of the foot due to disease or trauma, it may be worth discussing your options with a Prosthetist or Orthotist to see if you are suitable for this device. If you are interested in more information about partial foot amputation or Custom Silicone Partial Feet, please visit **www.partial-foot-amputation.com** Five ways to help prevent a partial foot amputation Take good care of your feet by regularly checking for good feeling or any redness or injury. It might be helpful to use a mirror to check the bottom of your feet so that you can see if there are any problems.

- Buy yourself shoes that are comfortable, breathable, and well-fitting with room for your toes. Many shoe stores offer a fitting service and may recommend extra width or extra depth shoes if you wear insoles.
- If you have been diagnosed with diabetes and are at risk of diabetic foot disease, get professional advice and see a podiatrist or diabetic foot clinic to help manage your symptoms.
- Visit a specialist when there is even the slightest sign of cracks or wounds - ideally, go to a diabetic foot clinic. Do not wait until your toe turns black or your shoe starts to smell. The first signs are dry skin, cracks, loss of feeling in the foot, calf cramps, fungus infections, calluses and warm feet.
- Remember, many facets of diabetes can be prevented or controlled through a wellbalanced diet and regular exercise. Your GP can assist you in a healthy lifestyle plan to avoid the risk of amputation.

Aideen Curran B. Pros & Orth CPO. MAOPA. MISPO Clinical Specialist



Commonwealth Games 2018 - Ottobock Service

In April, I had the honour of participating in the Ottobock Repair Centre at the 2018 Commonwealth Games in the Gold Coast. The Repair Centre was where any prosthetic, orthotic and wheelchair servicing was carried out for athletes and officials in preparation to and throughout the 11-day event.

This year, the Commonwealth Games hosted over 6,600 athletes and team officials from 71 nations and territories around the world. The CG2018 also led the way in being the first time a major multi-sport Games had an equal number of medal events for men and women across all sports and the CG2018 made history by being the largest integrated sports program in Commonwealth Games history, comprising 18 sports and 7 para-sports.

The Repair Centre was located within the athletes' village, so it was easily accessible for those who needed it. They were busy days, and with its purpose of providing Prosthetic, Orthotic and Wheelchair repair services, the Ottobock workshop was fully equipped with two shipping containers worth of stock, and in true Ottobock style, had everything we needed to manage anything that came through the door.

makita

The Repair Centre provided a huge variety of assistance to athletes and officials from all around the world during this time, from repairing punctures, straightening wheelchair tyres, to replacing broken KAFO joints and prosthetic feet.

Prosthetics

Vero was representing Papua New Guinea in table tennis and was also the country's official flag bearer. She came into the Centre soon after arriving at the village wearing an exo-prosthesis for her left PFFD. Vero had saved up all her money to purchase this prosthesis, and after many years of use was in a very poor state. Not only was it irreparable, it was no longer fitting her well at all, causing skin callousing and bruising, not ideal to allow her to compete at her peak in just a couple of days' time. So, the pressure was on to replace her prosthesis with something that she could wear with comfort and perform at her best in time for her first event. It was a combined effort from the volunteers at the Centre; to cast, manufacture and fit a new exo-prosthesis. It was a pleasure to be able to be part of this service, and Vero and her team were extremely grateful for the new prosthesis she received from the Ottobock Service Centre.



Orthotics

Para-powerlifting athlete Hellen also visited the Ottobock Service Centre bringing with her a KAFO that she was given back home in Kenya. The only issue was, the KAFO wasn't made for her, and as a result didn't fit her at all. Hellen relied on using it to support her right leg, while weight-bearing using crutches, when she wasn't using her wheelchair, which she relies on most of the time, due to her paraplegia. The locked KAFO was too old and illfitting to manage to refit to her, so a cast was taken and a new polypropylene KAFO with drop locks was fitted. Hellen was thrilled with her new, well-fitting KAFO and wore it during her para-powerlifting event where she placed 4th.

Wheelchairs

Para-powerlifting athletes Ndidi and Lucy were regulars at the Ottobock Service Centre over the time of the CommGames, and given the state of both their wheelchairs, there's no wonder! Both ladies from Nigeria relied on their wheelchairs due



to paraplegia, and both their wheelchairs were in terrible condition. Michael, the wheelchair technician (Aidacare) that was also volunteering at the Service Centre informed me that in Australia, a wheelchair has had a good life if it lasts 5 years... some of these athletes were using wheelchairs they were given 12-13 years ago, second hand. Fair to say, they were in extremely poor condition and really benefitted from the servicing and parts provided by the service centre. Both ladies came back to show us the medals they won in the para-powerlifting where they won Gold and Silver respectively.



Monique Van den Boom CPO-AOPA BP&O (Hons) Prosthetist



From kindergarten to high school Helping your child transition

Starting school is a big step for you and your child. It can be both challenging and exciting. This article is packed with useful information which might assist you in getting your child ready for school. You will find answers to common concerns relating to: selecting a school; enrolling your child; preparing your child for the big day; accessing support and more.

Kindergarten and primary school years

Starting kindergarten and pre-school is an important social and learning milestone in the life of your child. Your child's commencement in kindergarten and preschool can lead to a mix of emotions for you and your child; emotions that can range from uncertainty to excitement. This period can also be a time when you have many questions and concerns regarding how your child will adapt to this new environment and whether any additional support or adaptations will need to be made to positively accommodate your child's limb difference. Transitioning your child into kindergarten and preschool may also be a period of significant change for parents as, for some, this is the first time that their child has entered into coordinated care outside of the home environment. It is also a period of change for your child who will enter a world that is focused on story time, art and imagination, talking and listening, play time, exploration, socialisation and making new friends.

Selecting a kindergarten or pre-school

Before enrolling visit the kindergarten or pre-school, assess its grounds and facilities, and identify any assistance or accessibility needs your child might require there. In addition, ensure that information about the school's procedures, polices and service license is displayed and/or available to you.

Enrolling your child in kindergarten or pre-school

When selecting and enrolling your child in kindergarten or pre-school, arrange to meet with relevant staff to discuss your child's limb difference and any specific needs or support requirements your child may have. Ensure that the kindergarten or pre-school is aware of your child's abilities and limitations, is inclusive and respectful with regards to your child's needs, is able to provide your child with the appropriate level of support, and that the facilities are accessible (if required). Meeting with staff early will provide them with time to organise the best plan of action for your child, investigate funding opportunities and make any relevant modifications your child might need.

While the process in each state and territory differ, your child's kindergarten and pre-school may establish an individualised plan that is familyfocused and incorporate the involvement of specialist teachers and support agencies designed to ensure that your child's education, development and participation is maximised. Speak to staff at your child's kindergarten or pre-school about their arrangements and/or discuss your child's situation with the relevant Government Education Department, Catholic School Association or Independent School Association in your state or territory.

When enrolling you generally need to provide information, including: your child's name and address; details about yourself and any other parents, carers or guardians in your child's life; details of people who can collect your child; and, any relevant medical health and immunisation status details.

We understand that discussing your child's limb difference can be emotional, however early childhood educators are professionals who care for their student and parent community and will want to support you as best as they can.

When speaking with your child's kindergarten or preschool ask to have all relevant staff present at the meeting. You may want to bring your own support to that meeting; whether that is your Social Worker, a family member or friend. Having another person present can provide you with emotional support and assist you in taking down notes.

Preparing your child for kindergarten and pre-school

Starting kindergarten and pre-school is often a significant adjustment period for children. In light of this, you might want to consider preparing your son or daughter for this milestone prior to their





commencement. Some preparatory ideas include:

- Talking to your child about what to expect and why kindergarten or pre-school is important
- Talking to your child about any concerns they have regarding their limb difference and how it will be accommodated in this new environment (you may want to visit in advance so that any physical or emotional concerns are minimised)
- Supporting your child to manage dressing him or herself, which for some children with limb difference may require additional support or advice from their Physiotherapist or Occupational Therapist
- Reading to your child every night
- Encouraging your child to become independent by giving him or her 'alone time'
- Packing a change of clothes for your child and labelling all belongings
- Building independence by establishing a 'goodbye ritual' which might see you stay for a short period initially and reducing that to a brief goodbye once your child feels secure and settled
- Keeping staff informed of any changes in your

child's life that might affect their experiences at kindergarten or pre-school.

Primary and secondary school years

The primary and secondary school education years are a significant period in the life of children, young people and their parents. During this time parents select the school/s their child will attend, learn about additional support available to their child, build connections with educators, build relationships with other parents, watch their child develop independence and become part of their child's learning. During this time children and young people develop independence, undertake educational development and learning, build friendships, enter into adolescence, and participate in a range of social and sporting activities.

During the education years your child may experience some difficulties and concerns that may or may not be directly related to their limb difference and your child may seek your support to overcome any challenges along the way. Equally, your child will be keen to share his or her achievements and successes with you during this important period of their life.

Selecting a primary or secondary school for your child

The selection of a primary school and secondary

school for your child is one of the most important education decisions your family will make. Selecting a school often involves school visits, meeting with educators and attending orientation sessions prior to school commencement. In addition, factors such as travel, finances, and before / after school care may need consideration before a school is chosen. In some cases, children with a limb difference may be eligible for additional funding and support whilst attending primary and/or secondary school. Approved eligibility may lead to additional funding, provision of accessible resources and assistance in the classroom. Eligibility for support differs between states and territories (as well as the education sector) and it is best to discuss your child's specific needs with your preferred school. You may also want to discuss your child's situation with the relevant Government Education Department, Catholic School Association or Independent School Association in your state or territory.

Enrolling your child in primary or secondary school

When meeting with potential schools, or enrolling your child in a school, it is important to discuss your



child's specific needs with the staff. Discussing your child's individual needs is important so that their schooling can be stress-free and positive for all parties. You may find that your child's school has never educated a child with a limb difference, so you may need to explain this in detail with school management, teachers and other key staff.

Coordinating a school meeting

Coordinating and preparing for a school meeting to discuss your child is one way of ensuring that all staff understand your child's needs. Meeting with the school will ensure that all relevant staff understand your child's limb difference and support needs. Your child's school will likely want to put into place an Individual Plan for your child. These plans have different names in different states and territories and in different educational sectors (eq. Individual Education Plan, Negotiated Education Plan) but largely cover: funding eligibility; required accessibility modifications; classroom assistance; curriculum; and, any other specific needs your child may have. Depending on your child's needs, school location or education sector your child may also be allocated with one-on-one support from a specific staff member in the school

It is important to note that all jurisdictions must comply with the 'Disability Standards for Education 2005' (Commonwealth of Australia) that clarify to education providers their responsibilities under the 'Disability Discrimination Act 1992' (Commonwealth of Australia).

Over the course of your child's education years you and/ or your child may be asked to provide information related to your child's limb difference with new teachers or at the beginning of each school year. This may, at times, feel intrusive or frustrating. But, it is important to remember that the school is asking these questions and requesting information to ensure that your son or daughter is best supported in the school environment and that all opportunities for additional resources and equipment are explored.

Preparing for a school meeting

Prior to meeting with school staff, it is a good idea to make a list of key issues you want to discuss, including:

• **Rests and breaks** - Will your child require additional rest periods during school hours? How will the school monitor and manage rest periods?

- School modifications Does the school need to make any modifications to accommodate your child's accessibility needs and equipment? Are classrooms and toilets accessible? Are there steps in the school that may affect your child's ability to access school grounds? Will the computers accommodate a singlehanded keyboard or specific programs if your child has an upper limb difference?
- **Pain management** Does your child take any pain medication and, if so, what dosage? How often do medications need to be administered and how will this be administered on school grounds?
- Assistance Will your child require assistance moving from one classroom to another? Does your child need assistance carrying bags, books or technology? Does your child require assistance with eating? Does your child require assistance with toileting? What are the procedures around the various types of assistance your child may have?
- **Transport** If your child has limited mobility, are there special arrangements available for school drop-off and pick-up zones?
- Absences and curriculum How will any absence from school (eg. to attend medical appointments) affect your child's learning, marks and completion of certain subjects? What can the school suggest in this area both now and into the future?
- **Communicating with peers** How would you like your child to discuss their limb difference with school peers? How can students best understand your child's limb difference?

Accessing support

The kindergarten and pre-school years as well as the primary and secondary school years can be a



time of great excitement for your family. However, it may also be a time that leads to some concerns or questions along the way. You may want to speak to a Limbs 4 Kids team member who can assist you. You may also want to speak to another parent who has experienced what you are going through. If so, Limbs 4 Kids can connect you to a trained Peer Support Volunteer who you can speak to you. Alternatively, you might like to visit our website at **www.limbs4kids.org.au** for more information, call **1300 782 231**, email **kids@limbs4life.og.au** or join the conversation on Facebook at Limbs4Kids.

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Prosthetic goals

When was the last time you discussed your goals with your Prosthetist?

How often have you taken time to sit down with the Prosthetist and discuss the things that are important to you? You might be finding things difficult because you are trying to hold on with one arm or you can't bend your knee enough because your socket is causing you pain.

Does not being able to do these things make you question if it is possible? Maybe you feel defeated. Perhaps that makes you think "maybe I can't do this activity anymore?" rather than asking your Prosthetist if something can be done (to your prosthesis) to make it easier and/or pain free. There might be things your Prosthetist can help you with that you didn't realise. Perhaps technology has changed and now there are solutions available that didn't exist before. Discuss your needs with your Prosthetist. People's bodies and lifestyles change over time, as does prosthetic technology and funding. So, it's a good idea to make sure you talk with your Prosthetist about what you need and to ensure you are up-todate with any changes in technology or funding. When meeting with your Prosthetist talk about your current prosthesis and what you do or don't like about it, as well as other options that would better suit you and your lifestyle. Ask questions. When talking to your Prosthetist about your current prosthesis think about what you already know, which may include:

- That you know your skin reacts to a silicone liner, you sweat too much to wear a liner, so you might like to talk about other suspension options
- That you need to kneel down to do your job and this often ruins your prosthesis/clothing etc,
- That you need your prosthesis to be as light as possible and you don't care what it looks like as long as it lets you do everything you need to
- The things you like or don't like about your prosthesis and what is important for you (e.g. look, feel, weight, length, function, type)

When speaking with your Prosthetist make sure that you talk about yourself more broadly, which may include:

- Changes to your financial situation which may impact on your ability to pay for prosthetics (or parts) you have used in the past
- Any health issues you might be experiencing
- Goals you would like to achieve (e.g. return to work, driving, sport and recreation activities)
- Difficulties in attending your prosthetic clinic for regular checks

Is your Prosthetist and your prosthesis allowing you to be your best?

When speaking with your Prosthetist discuss changes to prosthetic parts, and new technology.

While this information might not be relevant to you at the time, it may be of use down the track. You may want to:

- Find out about changes to prosthetic funding, such as the National Disability Insurance Scheme (NDIS) or any changes to the current funding scheme in your state and territory
- Learn about different prosthetics, prosthetic componentry and new technology that you have heard about, and ask whether any of these would suit you and your situation
- Ask to trial new prosthetics. Most componentry companies have trial units available so that you

can try a different foot or arm prior to making your final decision. You will never know how something feels unless you try it out first

Think of working with your Prosthetist as a 'team effort', one can't work effectively without the other. In order for you to make decisions and get the best outcomes:

- Ask about the componentry recommended for you before you go ahead and approve it
- Discuss possible prosthetic options and their advantages and disadvantages of each part, so that you can work together to decide what will be best for you
- Ask questions about any other expectations you have of your Prosthetist and/or the facility they work in, for example: "how long will it take from the time funding is approved until I receive my prosthesis?" or "I need to know about my appointments at least two weeks in advance so I can arrange to take time off from work" or "can we please book the next appointment now?"
- If you need to, ask for any information in writing and/or take some notes yourself so that you can discuss these matters with family members or friends

Having more specific discussions with your Prosthetist

Sometimes there are specific things that you might be worried about discussing for fear of offending your Prosthetist in some way. You should know that all health practitioners are required to be approachable about anything that you need to discuss and a good Prosthetist won't be upset if you ask questions. Most likely he or she will enjoy the opportunity to work with someone who is motivated to get the most out of their prosthesis.

A Prosthetist's skill is being able to discuss whether a component is suitable for you, and if not why not. A Prosthetist should also be able to assess and discuss whether the benefits listed in an advertising brochure are things that you will be able to take advantage of. Ask your Prosthetist as many questions as you need so that you can understand and therefore achieve a good outcome.

Need assistance to be able to do tasks at work? Job Access may be able to assist you. To find out more contact: 1800 464 800.





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Special Children's Christmas Parties

Limbs 4 Kids families have once again been selected to participate in the 2018 **'Special Children's Christmas Party'** events held across Australia. These events are sponsored by a wide range of donors and businesses, and it is wonderful that children with limb differences and their families can participate again this year.

Children and siblings will have a great time at these events with features including: stage shows, rides, face painting, dancing, gift bags and presents from Santa! Limbs 4 Life and the event organisers would love it if your family can make it to this free event and join in the fun.

Parties will be held in capital cities and regional centres around the country. For more information including event locations and dates, email **kids@ limbs4life.org.au**

Numbers are strictly limited.



Are you looking for resources relating to limb loss for you and/or your child?

Limbs 4 Kids website contains a wide range of books, films and toys that might be of interest. Some of these resources relate to limb difference specifically, while others relate to differences and acceptance of others in general.

To find out more, go to www.limbs4kids.org.au/books-films-and-toys



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