

# Purpose

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Journal of the



**Amputees  
Federation**  
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November 2016

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## **PURPOSE**

**No. 109**

**November 2016**

**Published by  
Amputees Federation  
of New Zealand Inc.**

Registered with the  
Charities Commission  
(CC26629)  
for income tax  
deductibility of  
donations

**Editor  
Lorraine Peacock QSM  
213a Bay View Road  
St Clair, Dunedin 9012  
Phone (03) 455-6347**

**Email  
info@af.org.nz**

**Website  
www.af.org.nz**

**Contributions welcome.  
Deadlines for articles  
and advertising material  
15th February, June  
and October each year.**

## **Included in this Issue**

|                              |    |
|------------------------------|----|
| The National Executive       | 2  |
| Editorial                    | 3  |
| Rio 2016                     | 4  |
| Conference & GIAG 2017       | 5  |
| Publications                 | 5  |
| Introducing Brian Coker      | 6  |
| Osseointegration             | 7  |
| Introducing Corey Symon      | 9  |
| Our Thanks                   | 9  |
| News from the Regions        | 10 |
| Affiliated Amputee Societies | 12 |

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## The National Executive

### President

Mr John Ealand  
Blenheim

### Vice President

Mr Mark Bruce  
Christchurch

### National Coordinator And Editor of *Purpose*

Mrs Lorraine Peacock QSM  
213a Bay View Road  
St Clair  
Dunedin 9012  
Phone (03) 455-6347  
Mobile 027 4221298  
Fax (03) 455-9547  
Email *coordinator@af.org.nz*

### Committee

Mr Wally Garrett  
New Plymouth

Mr Geoff Hansen  
Hastings

Mr David Johnston  
Invercargill

Miss Claudia Teague  
Auckland

### Nominees to the NZ Artificial Limb Service

(Appointment pending)  
Ms Paula Tesoriero

### Hon Solicitor

Mr Lindsay Trotman LL.M(Hons)  
Palmerston North

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**[www.af.org.nz](http://www.af.org.nz)**

## EDITORIAL

This issue of *Purpose* includes an article on Brian Coker, a recipient of osseointegration surgery. Osseointegration was a hot topic at National Conference earlier this year when concern was expressed that NZ amputees were not given a choice as to which system they could receive, viz. ILP or OPRA. As reported in the last issue of *Purpose*, AFNZ undertook to follow through with MOH and ACC regarding the availability of a choice of procedure for amputee recipients. At the time of writing, a response has not been received from the MOH and we are pursuing this. However, ACC confirms that the surgery (ILP) carried out in NZ has the support and backing of the NZ Orthopaedic Association and that ACC legislation does not permit the funding of treatments undertaken overseas, e.g. the OPRA procedure.

In 2012, following the introduction of osseointegration to NZ, we reprinted articles in *Purpose* on both procedures - ILP and OPRA. It is not the role of AFNZ to have an opinion on the merits of one system over the other; rather it is for us to bring to you the facts in general about osseointegration and we believe the article on page 7 goes some way to achieving this. (Copies of the 2012 articles are available on request).

In the last issue of *Purpose* we included a survey which asked readers what they thought of our national journal. Although we were disappointed in the number who responded, the survey did tell us that most popular in terms of reading were personal stories about other amputees, followed by information on prosthetic updates and changes in technology. Interestingly, the majority of respondents were males in the 51-70 age group. Thank you to those who took the time to complete the survey: if you haven't done so and would like to, it is still available on our website [www.af.org.nz](http://www.af.org.nz).

And of course it goes without saying that the highlight of this issue is the Rio Paralympics. What else can one say but ABSOLUTELY FANTASTIC! Well done to all participants, regardless of what you did or did not achieve in terms of your personal goals. AFNZ is proud of you!

*Lorraine Peacock*

## RIO 2016

What amazing achievements were recorded at the Rio Paralympics! The NZ team beat its pre-Games medal target of 18 by three medals, winning a total of 21 (9 gold, 5 silver, 7 bronze). NZ was 13th in the overall medal haul and was the leading country in the medals per capita against all other countries, as well as setting 11 Paralympic records.

Gold medal recipients, which included 5 amputees, were:



From left - Nikita Howarth, Anna Grimaldi, Mary Fisher, Cameron Leslie, Sophie Pascoe (3), and Liam Malone (2).

Silver medals were also won by Sophie (2) and Liam (1), while Nikita also won a bronze. Other amputees (below) who were awarded medals were Holly Robinson (silver) and Rory McSweeney (bronze).







Blade Runner **Liam Malone** is sure to already know the finer points which enabled him to break the records set by Oscar Pistorius but maybe a study reported in *New Scientist* earlier this year is worth noting. It found that the sprinters wearing prostheses ran 3.9% slower when their affected leg was on the inside of the curve compared with the outside. The fastest runners were those

who could exert the most force on the ground in the shortest time. All athletes ran more slowly around the curves than on the straight, with both amputees and non-amputees' inside legs spending more time in contact with the ground than their outside legs. The effect was more marked for the amputees as their prostheses reduced their ability to generate force with their affected leg when it was on the inside of the curve (*Journal of Experimental Biology*).

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**PUBLICATIONS** available (no cost) from the National Coordinator or Regional Society Secretaries

**A New Challenge - Advice for New Amputees** (a 32 page booklet)

**An Ongoing Challenge** - A 60 page publication which covers a wide range of topics and includes personal profiles of 11 amputees.

**A Challenge with Purpose - A History of the first 50 years of the Amputees Federation of NZ Incorporated** (275 pages)

**The Amputee Society of Otago & Southland Inc. - The first 60 years** (146 pages)

**Little Jellybean** by Margot & Anton Wuts - for child amputees, their parents and families (24 pages)

## INTRODUCING BRIAN COKER

*(Excerpts reprinted with acknowledgement and thanks to the Canterbury/Westland Society)*

February 22nd 2011 is a day that Brian and his family will never forget. Early that morning he dropped his wife, Helen, at the airport for a flight to Palmerston North to visit her sister. As he was leaving his workplace (the PGG building) to go for lunch, the devastating earthquake that has changed our city and his life forever occurred. At the time, Brian was in the stairwell and was pinned by the collapsing debris which caused horrendous injuries. He recounts that he thought the whole city must have collapsed and he despaired at the prospect of ever being rescued. His thoughts were that "This was it" but he somehow managed to get a text to his son, Johnathon, to advise that he was trapped beneath debris in the stairwell. Seven and a half hours later he was located by rescuers and luckily among these people were medical professionals who, after sedating Brian, performed the amputation of his legs above the knees so that he could be extricated from the debris which had him trapped. Brian had to be resuscitated in the ambulance and was moved to Hamilton the following day as the resources at Christchurch Hospital were severely stretched in trying to cope with all the trauma-related injuries from the earthquake. In total, Brian & Helen spent 3 months in Hamilton before returning to ChCh, and by August he was taking his first steps on the prostheses made by the Limb Centre.

Due to ongoing problems with his new legs, Brian & Helen began to investigate other surgical procedures (Osseointegration) to improve his comfort, functionality and mobility. In July and September, 2012,



Brian underwent surgery (ILP) and says that had it not been for this, he believes he would be in a wheelchair today. Brian is very happy with the results and the care given by his medical & rehabilitation teams. He says that his most pressing physical challenges revolve around his general mobility and currently he uses two walking sticks to aid him. Subsequent to 2011, Brian &



Helen sold their city property and have built a beautiful home on a ¾ acre section at West Melton where they enjoy working on their award winning garden. Cooking is also something that Brian really enjoys and says that he and Helen work well together in preparing meals for family and friends as they love to entertain in their home.

Although the last 5 years have been a struggle and tested their resolve to the uppermost limits, Brian says that he attempts to have a positive outlook on life in general. His family remain the most important factor in his life as they have lived the highs & lows of this traumatic time alongside him and he is indebted for their ongoing support.

## OSSEOINTEGRATION

*In response to requests for information in general about osseointegration, the following article is reprinted from Limbs4Life, courtesy of ArtLimb)*

Osseointegration is a direct structural and functional connection between living bone and the surface of a load carrying implant. This implant is inserted into the bone during a surgical operation. In simple words, it is a metal rod which has a very reliable direct connection with the bone. Over the recovery period, bone grows into the implant increasing the strength and reliability of the connection. Once this connection is reliable enough to load through, a prosthesis can be



designed and fitted to the implant by your prosthetist. In a traditional socket prosthesis, the artificial limb uses the surface of the stump as a connection. This connection can be very firm and controlled but there will still be some movement between the underlying skeleton and the prosthetic socket. You can experience this by gripping your arm and turning your wrist. No matter how hard you grip, your bones will still move under the skin and muscle.

An osseointegrated prosthesis has a direct connection to the skeleton, which means that there is no movement between the prosthesis and the bone. This direct connection allows the amputee greater control over the prosthetic limb while providing a very simple and reliable fixation. Due to this direct connection, a prosthetic socket is not required. By removing the socket, the skin and soft tissues are not subjected to the traditional forces experienced in a socket prosthesis. As a result of this, the skin has a much lower risk of getting rubbed or

over pressed by the prosthetic socket. With the skin uncovered, there are also less issues with sweat retention and overheating of the limb. An additional benefit is that to put on the prosthesis, the amputee simply needs to clip the limb onto the metal connector that sticks out through the skin. Without the socket, prosthetic knee units are no longer restricted, allowing the amputee greater range of motion and improved sitting/kneeling comfort.

When walking on a prosthetic limb, there are a lot of forces acting through the prosthesis. In a socket prosthesis, all of these forces are partially absorbed by the soft tissue of the stump. This dulls the sensation of what surface is being walked on and how the mechanical parts of the prosthesis are working. In an osseointegrated prosthesis, the direct connection to the bone heightens these sensations which can be uncomfortable if the incorrect componentry is used.



The most common forces that can cause discomfort and need to be accommodated for are vertical shock, rotation and, in above knee patients, terminal impact (caused by the prosthetic knee). To compensate for vertical shock and rotation, shock and torque absorbing adapters can be installed. Additionally, an appropriately designed modern foot can be used to further reduce these forces. Terminal impact is when the knee comes to a sudden stop with a visible and perceivable impact when it fully straightens as it swings through. To prevent uncomfortable

terminal impact sensations, an appropriate knee unit with a hydraulic control specifically designed to prevent this impact is required. If the forces acting on the prostheses get excessively high and potentially dangerous for the amputee, there is usually a safety device installed in the prostheses that will disconnect it from the body and prevent serious injury.

When deciding if osseointegration is suitable or not, there are several considerations to keep in mind:

- Osseointegration is a surgical operation and it is important to discuss the risks with the surgical team.
- As there is a metal abutment protruding through the skin, there will be a permanent stoma on the stump. Because of this opening

between the outside environment and your stump, a special cleaning regime may be required to ensure proper hygiene of the stoma.

- Currently osseointegration is expensive. The specific cost and funding options are constantly changing and vary depending on individual cases.

Osseointegration is a very modern approach to prosthetics and has shown rapid development over a short period of time. For further information on your individual situation in relation to osseointegration, consult your doctor and prosthetist.

If you are interested in reading more information about prosthetics, please visit ArtLimb online at [www.artlimb.com](http://www.artlimb.com).

## INTRODUCING COREY SYMON



Corey Symon of Dunedin has vowed to learn to play the cello after being fitted with his bionic arm for the first time.

The King's High School 14 year old was born without a right arm but is now the proud owner of a bionic arm built by American company Limbitless Solutions. The Company's Executive Director, Albert Manero of Florida, said his non-profit organisation fitted its first bionic arm in August 2014 and Corey's was the 16th the company had produced. The technology means that when Corey flexes a muscle, it triggers the fingers on the hand on the 3D printed bionic arm to open and close. He is now determined to play the cello and teach himself how

to write with his right hand. The bionic arm replaces a basic prosthesis with a moving thumb and was built in Orlando, using pictures of Corey's right arm. The material to build the arm cost about \$485 but families were given the finished product free of charge.

*(Article reprinted from the ODT, Photo courtesy of Hayden Parsons)*



**OUR THANKS** to the Rehabilitation Welfare Trust for their donation towards the cost of the publication of *Purpose*.

## NEWS FROM THE REGIONS

**Auckland & Northland** - With City Rail "The Build Is On" in Auckland and working with strong input from [www.beaccessible.org.nz](http://www.beaccessible.org.nz), transport in and around Auckland aims to cater for all persons at all mobility levels. Our membership has definitely increased and it is an 'upwards and onward' resurrection for our Society thanks to both the very loyal and loved stalwart members and the vibrant new energy we have. It was good to see one of our members, Ripu Bhatia, featuring in a national documentary [www.attitudelive.com/watch/Being-Me-Ripu](http://www.attitudelive.com/watch/Being-Me-Ripu). (*Helen Kocks, Secretary*)

**Waikato, Bay of Plenty & Districts** - Last month a few Waikato members enjoyed a lunch at Al Fresco Cafe. Coming up on 4 December we have our Christmas lunch at Punnet Strawberry Cafe, situated between Hamilton and Cambridge. An extra bonus is that you can pick your own or buy their large punnets of fat juicy strawberries - a function not to be missed. Another not to be missed is the Waikato/Taranaki Fishing Trip on the Coromandel with a two night stay over - watch this space for the fishy stories to follow! (*Lee Cook, President*)

**Hawke's Bay/East Coast** - Here in Hawke's Bay we are delighted with the results of our last two fundraisers. We recently held a Quiz Night in conjunction with the Napier RSA; the evening proved to be heaps of fun and raised a healthy amount for our society. Our annual sausage sizzle was also well supported; local businesses donated sausages and bread, so most of the takings went into our coffers. Between the two events we raised around \$1300. Our Society has reached a milestone that we have had in our sights for a while: we now have over 100 members. Having our Field Officer out and about, as well as some interesting activities and services, has raised our profile which in turn has built our membership. (*Diane Walsh, President*)

**Taranaki** - Taranaki is very excited to be hosting the National Conference in April next year. We want to show you our place and hope to see you here. We have been involving ourselves in a few new things. On 7/8 October a group consisting of Colleen, Chris, Wally and Bevan were war victims in army exercises at Linton Army Camp. It was for a medical competition between Army, Navy and Air Force which has gone on for many years. The competition was fierce and enjoyed by all of us. Many of the teams thanked us for bringing an element of reality to the war scenarios. Our next adventure as a group is a fishing trip in Coromandel. Some Waikato members are

joining us; hopefully we can win a fishing challenge against them.  
(Anne Fromont)

**M**anawatu - The last member function held in early July was at the Woolshed café in Sanson. Being midway between Palmerston North and Wanganui, it was well supported with 20 members attending. The next member function on Saturday 5th November is a visit to the Enable Centre on Main St in Palmerston North to see the latest offerings in aids and design for those with impaired mobility. A barbecue tea to follow is planned and a good time is anticipated.  
(John Maher, Secretary)

**G**reater Wellington Region - A huge congratulations to all our athletes who did our nation proud at the Paralympic Games. We welcomed home Kate from Rio who is a champion in our hearts. We were delighted to have Lou Garrido, who is the new Central Regional Manager at the Wellington Limb Centre, meet with our committee for an informal coffee and chat. We said farewell to long-time Society member Bill Coburn who passed away recently. On Sunday 18 December we are planning a movie fundraiser with the next Star Wars instalment "Rogue One". (Ken Te Tau, Vice President)

**C**anterbury & Westland - In September, around 20 members and friends made a most enjoyable visit to a local winery, Cracroft Chase, who were kind sponsors for our conference earlier this year. At the end of October, members also enjoyed a visit to the award winning garden of one of our members at West Melton - many thanks to Brian & Helen Coker for their wonderful hospitality. We are now looking forward our annual Xmas luncheon to be held on November 20th at the Hornby WMC. (Mark Bruce, President)

**O**tago & Southland - We were delighted that three of our committee members were medal recipients at the Paralympics - Anna Grimaldi (gold), Holly Robinson (silver) and Rory McSweeney (bronze). Holly also did amputees proud by carrying NZ's flag at the opening ceremony, (Lorraine Peacock, Coordinator)

**N**ewsletters of Regional Societies are available on the Federation's website ([www.af.org.nz](http://www.af.org.nz)) along with other useful information.

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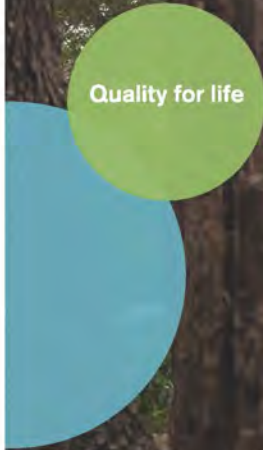
## AFFILIATED AMPUTEE SOCIETIES

| <b>Region</b>                      | <b>Secretary/Contact Person</b>  |
|------------------------------------|--|
| Auckland & Northland               | Helen Kocks<br>P O Box 36-170<br><i>anamputeesociety@gmail.com</i><br>Auckland 0748      Mobile 02108614545            |
| Canterbury & Westland              | Eileen Popplewell<br>P O Box 26-148 <i>ceallaigh4@xtra.co.nz</i><br>Christchurch 8148      Phone (03) 349-9415         |
| Hawke's Bay/East Coast             | Geoff Hansen<br>809A Ferguson St <i>burnoff@xtra.co.nz</i><br>Hastings 4122      Phone (06) 870-3357                   |
| Manawatu                           | John Maher<br>46A Bennett St <i>jmaher@orcon.net.nz</i><br>Palmerston Nth 4412      Phone (06) 354-7023                |
| Nelson & Marlborough               | Claire West<br>5 Cape View <i>jcjcape@slingshot.co.nz</i><br>Nelson 7010      Phone (03) 545-1410                      |
| Otago & Southland                  | Lorraine Peacock<br>213A Bay View Rd<br>St Clair <i>lorrstan@xtra.co.nz</i><br>Dunedin 9012      Phone (03) 455-6347   |
| Taranaki                           | Christine Windle<br>238 Egmont St <i>christinewindle@xtra.co.nz</i><br>Patea 4520      Phone (06) 273-6088             |
| Waikato, Bay of Plenty & Districts | Ruthie Coltrane<br>P O Box 15-130<br>Dinsdale <i>ruthie.coltrane@gmail.com</i><br>Hamilton 3243      Mobile 0273664540 |
| Greater Wellington Region          | Ken Te Tau<br>27 Waiho Tce<br>Elsdon <i>tetau@paradise.net.nz</i><br>Porirua 5022      Mobile 0274876599               |

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