

Emmett at the 2016 Cardiac Challenge

Cardiac Challenge background

The Cardiac Challenge is a fundraising bike ride from Cairns to Cooktown in Queensland, Australia. This year, three hundred and fifty riders participated in the three-day, 333 kilometre trek to celebrate the 10th anniversary of the Challenge.

The Challenge, first held in 2007, was the brain child of Peter McNally. Peter lives in Cairns and had been receiving ongoing heart treatment. At the time, people who lived in Far North Queensland requiring cardiac services had to be transferred or air lifted to Townsville, 350 kilometres away. Peter encouraged the Far North Queensland Hospital Foundation that a fundraising bike ride would be a great way to raise money to improve cardiac care services in the Far North.



Cardiac Challenge Riders, 2016

Funds raised in the Cardiac Challenge were donated to the Cairns Base Hospital Foundation to build a Coronary Catheter Laboratory. The Catheter Lab has

been operational for the past ten years, evolving from a part-time facility to a full-time lab, and it is also utilised after-hours, for emergency procedures. This diagnostic and treatment facility provides a vital and convenient service to people who experience cardiac problems in Cairns and surrounding areas

People of different ages and backgrounds take on the challenge of this long-distance bike ride, including those who have utilised the cardiac service themselves; others may be riding for a friend or family member undergoing treatment; and some take on the ride as a personal challenge, with the added bonus of raising funds for a worthwhile cause. Over the past ten years, the Hospital Foundation has raised over \$2 million.

The Challenge

During the three-day challenge, riders are exposed to intense tropical heat as they cycle through various terrains, experiencing the amazing diversity of Far North Queensland; from the leafy rainforests of Kuranda; to the savannah woodlands of the Atherton Tablelands, and the stunning Coral Sea at Cooktown.

At the end of each day, riders and support personnel set up camp and sleep under the stars in balmy north Queensland. It is a true Australian outback adventure, attracting local and international riders, and volunteers alike. Each year, the number of participants continues to grow.



Camp-site

The Emmett Technique at the Challenge

The Cardiac Challenge is a great opportunity for Emmett Therapists who live in Cairns to promote the Emmett Technique, along with their businesses, as participating riders often develop muscle fatigue, pain and discomfort during the three-day haul. Emmett Therapy is the ideal technique for providing relief to aching bodies, as it is a gentle treatment that assists in decreasing muscle tension and improving range of motion.

Emmett therapists first participated in the Cardiac Challenge in 2014. During the first event, the technique was not known to most riders; however, it didn't take long for the word to spread about the benefits of an Emmett session or two. Riders frequently commented that they 'felt lighter', could 'move easier', and that their pain was considerably reduced.

This year, there were seven Emmett therapists who were, again, warmly welcomed:

- Gemma Dustin
- Rusty Boeterhoek
- Amanda Mode
- Megan McQuillan
- Jane Yeates
- Jayne Guthrie

- Heather Graham



Amanda Mode, Bruce Webster (bike rider representing Emmett Technique) and Rusty Boterhoek



Back (L-R): Jayne Guthrie, Heather Graham, Gemma Dustin, Amanda Mode
Front (L-R): Rusty Boterhoek, Jane Yeates, Megan Quinn



Jane Yeates and Heather Graham providing Emmett sessions.



The Emmett Therapists taking some time out whilst waiting for the riders to come into Cooktown



Hard work deserves a good feed!

Collecting data on the Emmett Technique at the Challenge

This is the third year that Emmett therapists have been involved with the Cardiac Challenge and it provided an excellent opportunity to collect data on the benefits of an Emmett session, as there were 350 fatigued bodies, plus support personnel. All participants who received treatment were asked to provide written consent and feedback after their session.

To assist this research, it was essential that the forms were quick and easy to complete, as the Emmett Therapist had only five to seven minutes to spend with each person. The study used a 'Pain scale' to measure discomfort. This is a recognised measuring scale which helps to identify pain levels. Each data form had a pain scale, along with an outline of a body where the person could indicate their area of pain.

Data sheets were presented to participants who requested an Emmett session. These data sheets had 12 areas of the body identified, plus an 'Other' section which could be used if their pain was elsewhere. Each body part section had 'tick' boxes to indicate whether the issue was on the left or right hand side, (or both, in some cases), as well as a section to state whether the pain was an old or new condition. Each section also had a 'Before Emmett session' and 'After Emmett session' area, for participants to rate their pain level on an 11 point scale (0 = "No Pain", through to 10 = "Worst Pain Possible").

Data Analysis

Two hundred and fourteen (214) data sheets were collected over the three-day event.

One hundred and ninety two (192) data sheets were used in this analysis. Twenty two (22) sheets (10% of data sheets collected) had either 'before' or 'after' scores missing and, therefore, could not be used.

Five hundred and twenty (520) data points were gathered from the 192 data sheets. Many data sheets had more than one location highlighted on the body outline that required an Emmett correction. Unfortunately, some of these individual locations did not have a 'before' or 'after' score; so, they, too, were unable to be used in the analysis.

The reduction in reported pain scores were analysed with a Paired t-test in the statistical software program, SAS Studio.

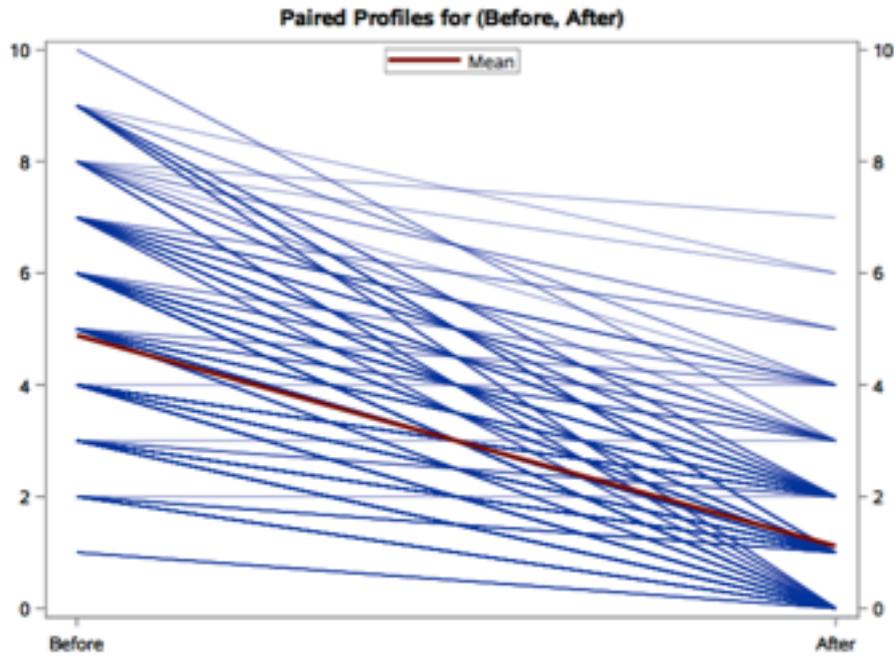
Number of Emmett sessions (N) = 520
Mean - Pain Scale Score before Emmett session = 4.9
Mean - Pain Scale Score after Emmett session = 1.1
Mean - difference between before and after scores = 3.8
Standard Deviation = 1.7
p-value < 0.01

Changes in Pain Scale Scores

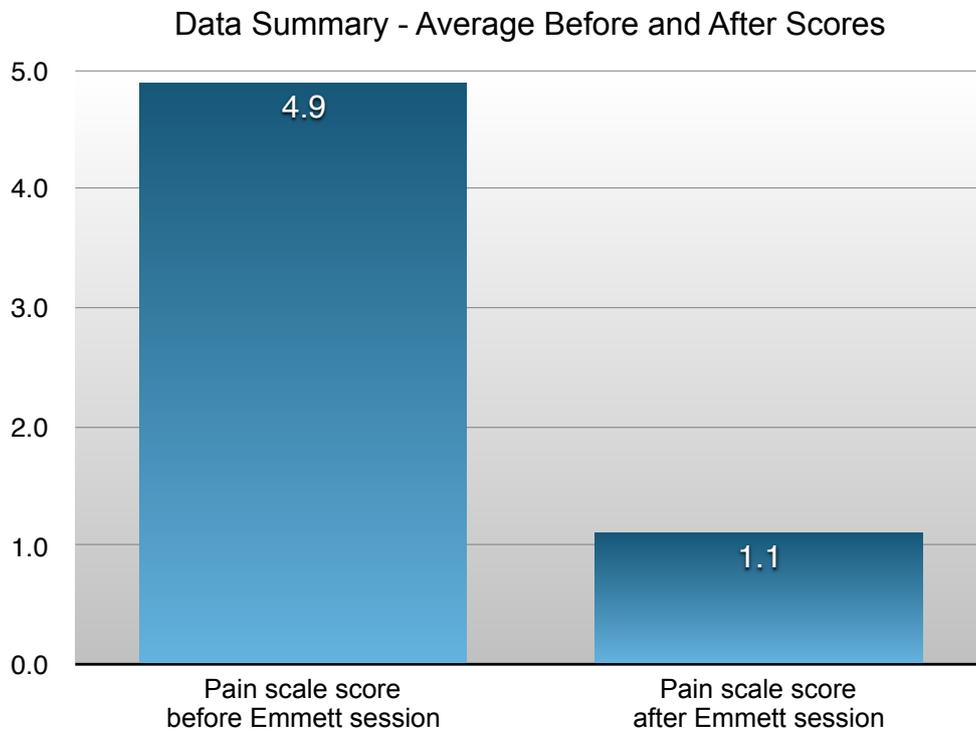
The average change in pain scale scores across all results was a reduction in pain of 3.8 points. The difference between the mean Before and After scores was statistically significant, with a p-value of < 0.01. (A p-value is a rating of statistical significance. A p-value of < 0.05 indicates that differences between before and after scores are statistically significant and not just by chance.)

The biggest change in pain scale score was 9 points; and three people did not notice any change in pain after a hip, a neck or shoulder session.

The graph below displays the mean and paired scores for all 520 data points.



The following graph shows the average pain scale scores, before and after an Emmett session.

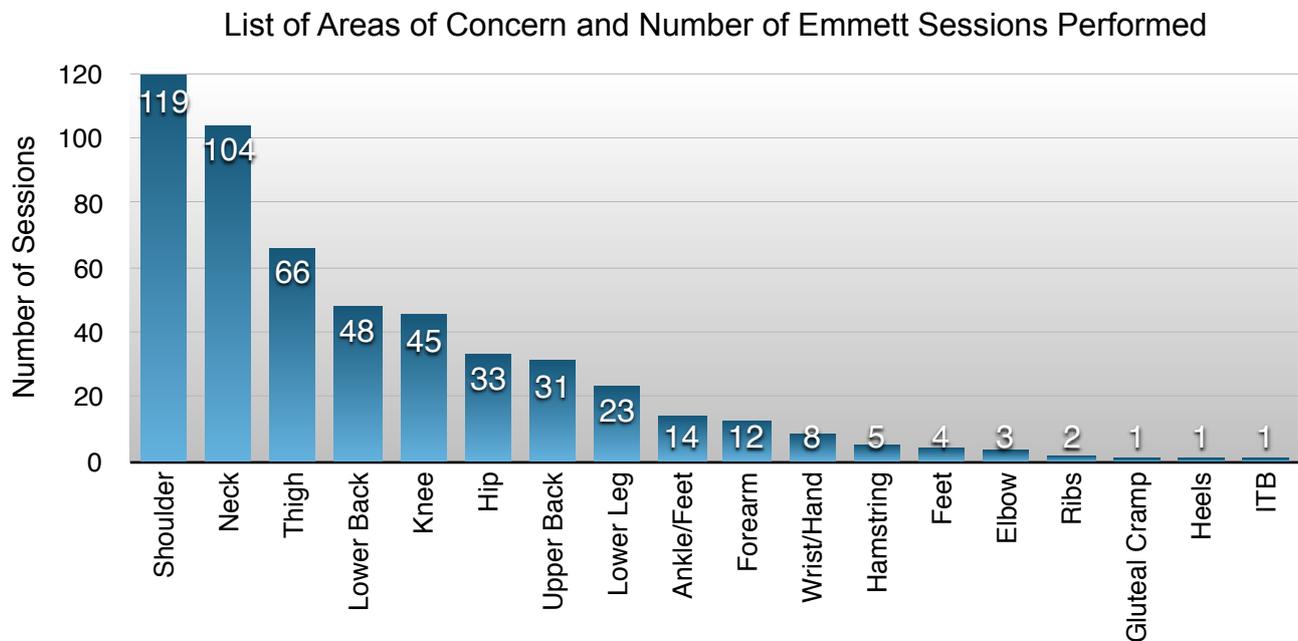


Effect Size

The data from this study has a Cohen's $d = 2.2$; a very strong effect. This figure indicates that there was a notable decrease in pain after an Emmett session. (Effect Size is a statistical measure of how likely it is for change to occur. This measure is a useful statistic used to compare studies that are different in design or measure different features. A study with a "Cohen's d " effect size of 0.2 would indicate a small effect size; 0.5, a medium effect size; and 0.8 is considered to be a large effect size.) Therefore, the result of 2.2 is an impressive one, highlighting the therapeutic benefit of the Emmett Technique.

Range of Areas of Pain Addressed

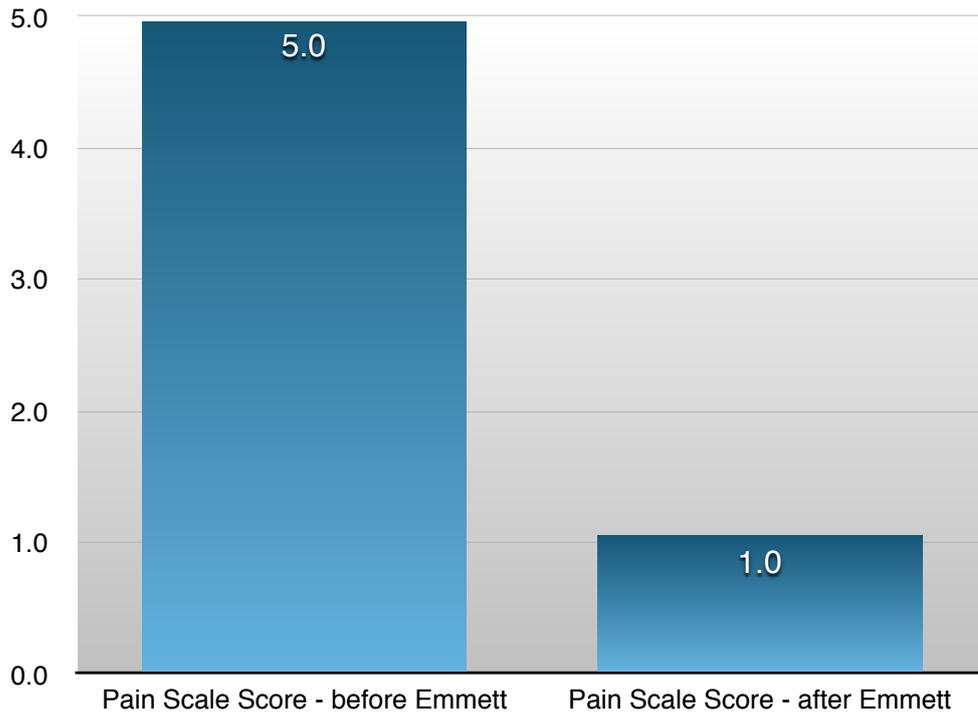
Eighteen (18) areas of body pain were identified by participants across the three days. The following graph displays the range and frequency of concerns. Shoulder and neck issues were by far the most common areas addressed.



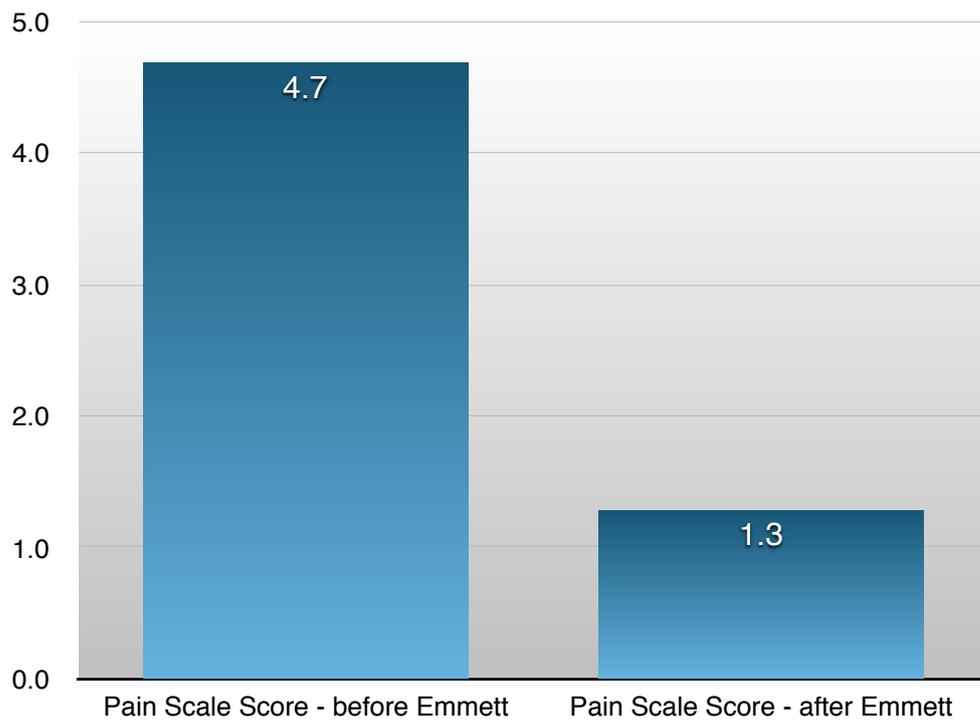
Individual Body Areas

Data from individual body areas displayed similar patterns of change, with all being statistically significant (p -value < 0.01). To illustrate this, the two body areas of Shoulder and Neck, which received the most attention over the three-day event, are presented in the graphs below.

Shoulder



Neck



Old vs New Body Pain

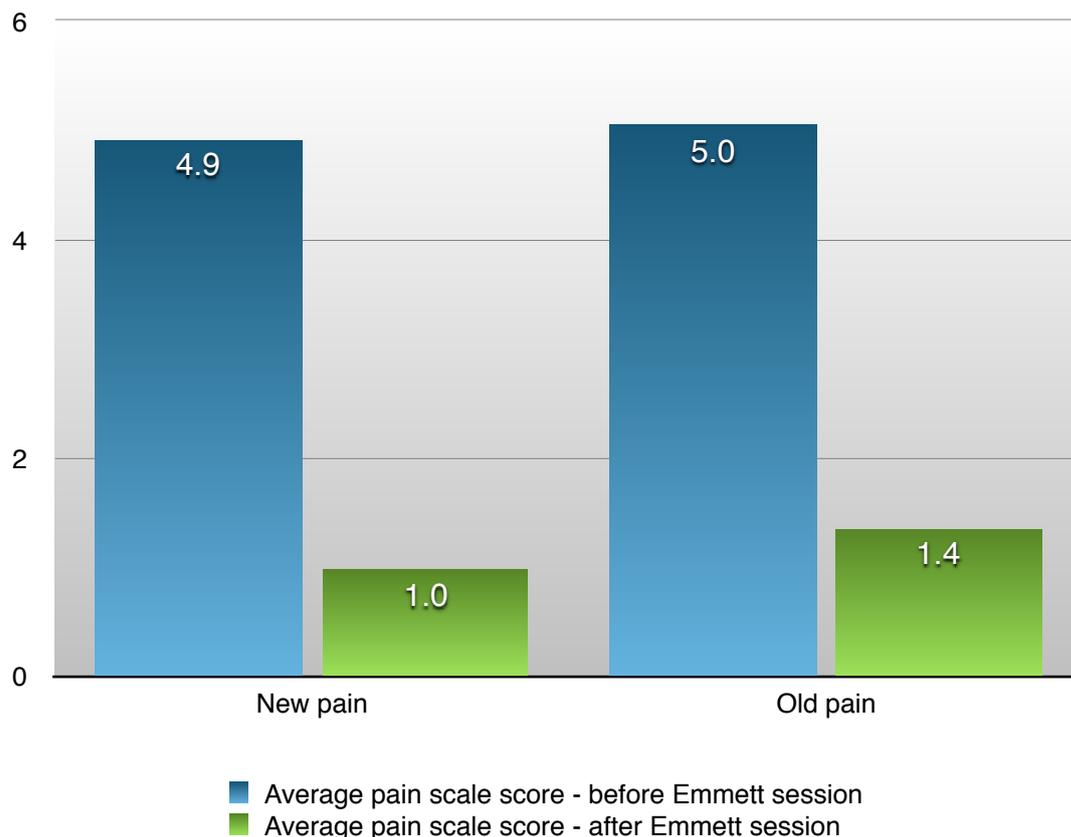
Participants were asked to record whether the area requiring correction was old or new pain. This was recorded on 179 occasions: 96 recorded old pain, and 83 recorded the area as new pain.

An analysis was conducted to examine if there was any discernible difference between results of an Emmett correction to an area of existing pain and a correction where pain had developed over the course of the Cardiac Challenge event.

'After Emmett session' scores were compared to 'Before Emmett session' scores in both groups. In all individuals, there was a reduction in pain scores, ranging from 9 points to 1 point on the 11-point scale.

The difference in scores between 'New' and 'Old' pain were compared, using a Paired t-test in the statistical program SAS Studio. It was found that the two groups had near identical results. The analysis showed that there was no significant statistical difference (p -value = 0.49) between the benefits of an Emmett session on an existing condition or a newly acquired painful condition. Both groups responded equally well and achieved strong reductions in pain.

The graph below displays the average Before and After scores for pain areas identified as Old or New pain.



Summary of Results

The data gathered from this Cardiac Challenge event demonstrates the effectiveness of Emmett Therapy 'in-the-field'. Sessions performed on the side of the road or under a tree are obviously more challenging than Emmett sessions performed in a clinic. However, the therapists were able to

achieve these impressive results in a less than ideal situation; providing rapid and effective corrections.

Information provided by comparing old and new injuries supports the clinical experience of Emmett therapists; that Emmett Therapy can have an impact on recently acquired conditions, as well as on long-term concerns.

The benefit of having Emmett Therapists available throughout the event was clearly demonstrated in these results. The physical relief that riders and volunteers experienced after the Emmett sessions was as compelling as the statistical evidence that was gleaned, and the feedback that therapists received throughout the three-day event was so encouraging.

Written by Gemma Dustin and Greg Wills

Research information compiled by:

Greg Wills BAppSci (OT) MHSci

on behalf of Emmett Therapies HQ (Copyright © Emetros Pty Ltd)

January 2017