Success of the ‘Inside Incredible Athletes’ Documentary

During the summer Dr Vicky Tolfrey worked alongside Renegade Pictures and the British Paralympic Association to produce a 90 minute documentary called ‘Inside incredible athletes’. The programme was filmed by Mike Christie against a backdrop of iconic London locations and gave a breathtaking flavour of the skills required in the athletes’ individual sports.

The documentary was successfully aired on Channel 4 in August and is part of the station’s overarching aim to help raise the profile and shift attitudes of disability and disability sport in the build up to the Paralympic Games. After transmission, The Employers Forum on Disability, carried out audience research with astonishing results. They found that 90% of viewers surveyed said that the film made them more interested in watching the Paralympics, and two thirds said that it had changed their perception of disability sport.

The success of the documentary prompted Channel 4 to create a 30 minute version which was aired on the 3rd Dec. Re-named ‘Freaks Of Nature’, the programme showcased the extraordinary talents of Britain's leading Paralympic athletes and showed their staggering athletic ability, sporting excellence, dedication and will to win.

Main picture and above : The GB Wheelchair Rugby on the Thames ferry going underneath Tower Bridge during filming. Images by Alison Couldridge and courtesy of Andy Barrow who took part in the documentary.
Research Articles


Qualitative Research in Sport & Exercise: Call for Papers

Special edition on the Paralympics and Disability Sport
Edited by Dr Brett Smith – Peter Harrison Centre for Disability Sport, Loughborough University

Qualitative Research in Sport and Exercise is a leading international journal dedicated to the advance of sociological and psychological qualitative research in sport, exercise and health.

This special edition, in conjunction with the Peter Harrison Centre for Disability Sport at Loughborough University, seeks to bring together voices from sociology, sport policy, and psychological research, concerned with opening up new theoretical and empirical understandings on issues relating to the Paralympics and Disability Sport. The substantive concerns of this edition, therefore, are intentionally eclectic. They are also timely. The special edition will be produced in July 2012, a month prior to the beginning of the Paralympic Games in London. Empirical qualitative papers that deepen our understandings of the Paralympics are welcomed, as are theoretical or methodological papers that will significantly add to the continued development of disability sport, health, and wellbeing.

Submission Process

All submissions should be a maximum of 8,000 words including references. All papers will be subject to blind review by a minimum of two referees. Neither acceptance nor place in the special edition is guaranteed. If necessary the special edition will run over two QRSE issues. All submissions should be made online at the Qualitative Research in Sport and Exercise ScholarOne Manuscripts site (http://mc.manuscriptcentral.com/QRSE).

The deadlines for submission are as follows.

Full papers submitted for review August, 2011.
Final papers submitted to editor January 15th, 2012
Intended Publication Date July 2012

Editor-in-Chief, Dr. Brett Smith – Peter Harrison Centre for Disability Sport, Loughborough University
The Latest Invited Presentations from PHC Staff and Students

Presentations & Workshops


• Howe, P. D. (2010). Athlete as Anthropologist, Anthropologist as athlete: a critical exploration of the Paralympic Movement. 1st Annual Trevor Williams Conference, 22nd October 2010, Coimbra, Portugal. **Highlights from this presentation can be read on page 12.**

• Kitchin, P.J. and Howe, P.D. Searching for evidence: A case analysis of the impact of policy on the management of a community sport organisation. 18th European Association of Sport Management Conference, 18th September 2010, Charles University, Prague.


• Silva, C., & Howe, P. D. (2010). The Imagined Paralympian: Supercrip and the impaired sporting body. At the Media Communications and Cultural Studies Association Conference, Currents in the Mainstream, 22nd September 2010, De Montfort University, Leicester. **An article on this presentation can be read on page 12.**

• Smith, B. (2010). Disability, rehabilitation, and spinning (un)healthy narratives, 8th November 2010, Faculty of Physical Education and Health, Toronto University, Canada.

• Smith, B. (2010). Narrative analysis as a turn to theory and angles of vision: Examples from disability research, 9th–11th November 2010, Faculty of Physical Education and Health, Toronto University, Canada.

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**Catch up on the highlights from selected presentations**

Page 12: Read comments from Dr Vicky Tolfrey and Jill Murdoch, the Support Worker at the Brittle Bone Society Annual Conference, held on the 25-26th September 2010, in Loughborough.

Page 12: Read about Dr David Howe and Carla Silva’s experience of the Media Communications and Cultural Studies Association Conference called Currents in the Mainstream, held on the 22nd September 2010, at De Montfort University in Leicester.

Page 12: Catch up on Dr David Howe’s presentation at the 1st Annual Trevor Williams Conference held on the 22 October 2010 in Portugal.

Page 13: Read about why Dr Brett Smith has been giving a series of talks and workshops in Canada during November 2010.
Joanna Kirkby has recently started a PhD at Loughborough University under the supervision of Dr. Brett Smith. Over the next three years her PhD will explore the psycho-social aspects of resilience in relation to the health and wellbeing in people who have suffered a Spinal Cord Injury and their families. The central objectives of this research are to advance theoretical understandings within the fields of health sciences and disability concerning resilience, health, and wellbeing and to assist health practitioners and policy makers in promoting resilience and improving the health and wellbeing of disabled people and their families.

To explore these objectives and to forward methodological understandings within the fields of health sciences and disability Joanna will use qualitative methods and methodologies. In part she will be drawing on narrative theory and narrative forms of analysis and using a combination of life story interviews and audio diaries. This will allow greater understanding of how people with a spinal cord injury can show resilience by negotiating for available resources within themselves, their community, and cultural environment to create a unique pathway towards health and wellbeing.

Joanna originally became interested in this area through a project exploring resilience in elite women’s rugby players during her MSc in Sport and Exercise Psychology. She will be presenting this work at the British Psychological Society conference in December. Joanna feels privileged to be a member of the Peter Harrison Centre for Disability Sport and looks forward to working with colleagues in the centre.

Tom Paulson recently started a PhD Studentship with the Peter Harrison Centre under the guidance of Dr Vicky Tolfrey and Dr Lettie Bishop. For his MSc project here at Loughborough, he worked alongside Christof Leicht a PHC Research Assistant to investigate immune function and infection incidence in members of the 2010/2011 Great Britain Wheelchair Rugby Squad. He developed a strong interest in the research topic of ‘Immunology’ through his MSc taught courses yet this opportunity enabled him to apply this knowledge and also gain valuable experience of working with elite wheelchair athletes. It is this research topic area that will form the main focus of his PhD studies.

First, Tom intends to extend upon the on-going work of PHC members and to investigate methods of monitoring exercise intensity and physical activity in spinal cord injured individuals. The rationale is to establish a cost-effective method for prescribing exercise and ensuring gains in functional capacity are maximised during training. At the same time he will be looking to investigate aspects of immune function in individuals with spinal cord injury and, specifically, the effect of physical activity on immune function and the role of exercise in protecting individuals from illness or infection.

A clear aim of his research is to include both highly trained ‘elite’ populations as well as individuals entering or participating in the rehabilitation process following injury. By doing this he will strive to apply knowledge of exercise prescription or monitoring from elite populations into the rehabilitation setting. Through this work he aims to develop a strong working relationship between The Peter Harrison Centre and the major Spinal Injury and Rehabilitation Centres around the UK.

Mel Preece will be studying for her PhD as a part-time student as she currently works at the North Warwickshire & Hinckley College of Further Education. Mel works as their HE Sports Co-ordinator, lecturing up to HND level, and specialises in teaching about disability in sport. It was her passion for this subject area that lead to her return to study, having previously completed a Sports Management Degree (BA Hons) through Birmingham University.

Within her PhD, Mel is hoping to work with the Great Britain Wheelchair Rugby and Basketball teams, examining their psycho-social health and well-being across time, starting from the point of acquiring their disability and moving towards and beyond the 2012 Paralympics in London. This will involve tracking the teams as they prepare for the Paralympics and considering the role that their sport has played in their lives, and most notably the impact it has and is having on their sociological and psychological health as elite athletes. The research will conclude by examining their lives and health post-games either as they continue as an athlete or retire from their sport. In this way it will be a longitudinal study that maps their psycho-social health status from past, though present and beyond, dissected by the London 2012 Paralympics.

Mel hopes that this research will lead to a greater appreciation of the changing relationship between disability, sport and psycho-social health and well-being over time, and be beneficial for those participating or involved in disability sport at both recreational and elite level.
Dr Vicky Tolfrey provides an update on the ‘wheelchair configuration’ work

UK Sport’s Research and Innovation programme aims to ensure that Britain’s top athletes are among the most feared on the starting line at the London Olympic and Paralympic Games. UK Sport are the facilitators between sport and experts; working in partnership with both to create a system that allows our athletes to be the most prepared and best equipped of all on the world stage. To read more please go to the website link at http://www.uksport.gov.uk/pages/research-innovation/

Investigating the intra-push profiles during wheelchair propulsion enables sports specific information to be fed back to the user and in a sporting context can be used to optimise performance. The use of field testing is a highly important consideration when working with elite wheelchair athletes, as it best simulates the realistic movements and intensities that are performed in competition. During the wheelchair court sports, the ability to accelerate from a standstill, manoeuvrability, braking and sprinting are all extremely important indicators of performance (Vanlandewijck et al., 2001). Some of the recent collaborative work using pervasive sensing technologies for sports training was demonstrated at the Elite Sport Performance Research in Training (ESPRIT) Annual Conference, which was held at Loughborough University in October. This involved a demonstration of the collaborative work of Dr Vicky Tolfrey and Barry Mason with a research team at Imperial College London lead by Prof. Guang-Zhong Yang. Over the summer period significant developments have been made with the sensing devices that could be applied to wheelchair sports. This collaboration compliments the current PHC research interests that focus on elite wheelchair sports performance and wheelchair configurations. The photo shown (right) is the sensing device mounted on the hub of a wheelchair.

Below a GB wheelchair basketball player pushing on the motorised treadmill whilst kinetic data is being collected with an instrumented hand-rim (SMART™) and field based testing is being performed by a GB wheelchair rugby player. These photos illustrate the work of Barry Mason’s PhD that is funded by the UK Sport Innovation programme under the supervision of Dr Vicky Tolfrey and Professor Lucas van der Woude.

References
Dr Brett Smith provides an overview on the Health and Well-being recent work

The PHC is pleased to announce its new focus and research strategy:

The main aim of the 'Health and well-being' research strand is to have sustained academic, social, political, and economic impact by addressing the most important questions concerning disability, health and wellbeing.

**Research project**: Understanding the well-being and care of persons with spinal injury in an isolation ward as a result of pressure sores

Individuals with SCI are at high risk of getting pressures sores. The severity of pressure sores can mean spending a lengthy period of time on bed rest in an isolation spinal ward. Many studies have examined how to treat the biological side of pressures sores in this context. However, we have no evidenced based knowledge concerning the impact that being in an isolation ward has on a person’s psychological well being. We also do not know what the consequences are on their psychological wellbeing after they leave isolation and return to living back in the community. Without this knowledge, it is very difficult to develop and advocate guidelines and interventions for promoting and improving health and wellbeing in this population. This research aimed to examine such matters. The results of this research are now emerging. Of significance here are the following:

**Phase 1 - Pre-isolation: Theme: Cause of pressure sores**

1. Pressure sores often resulted from the introduction of a change or disruption in an individual’s life. For example, when travelling on a plane for the first time one participant struggled to deal with the toilet (including the toilet space), accidently cutting herself on plastic in the toilet, and over the course of the trip developed a pressure sore unbeknown to her. Developing pressures were thus deemed an ‘unlucky’ consequence of a change or disruption in one’s life.

Significance: The participants felt angry or disappointed with health care staff. They as individuals felt they were blamed for their pressure sores. Yet, these participants habitually practiced a variety of preventive techniques and behaviors. They viewed thus themselves as ‘unlucky’ and the pressure sores were beyond their control. In addition to blame and individual responsibility, this finding also has significance for health promotion behaviour: sometimes very little can be done, an understanding of how the pressure sore(s) occurred is needed (based on a typology), and empathy is needed from staff.

2. In contrast to those above, some people reported their pressure ulcer was unanticipated because their health practices, psychological approach, and social/environmental profile remained constant. For example, one person developed a small red ‘spot’ that matured into a full-blown pressure ulcer. He was bewildered by it. But, age-related changes in the skin (e.g. capillary thinning) went unnoticed and preventative strategies remained unchanged until a critical point when the red spot unexpectedly appeared.

Significance: People were unaware that their physical body changes at a very subtle level. They maintained practicing techniques and behaviors that they had successfully developed 10 years ago to limit pressure sores. Age changes in skin meant these practices were no longer appropriate. Education is thus needed and techniques changed as people move through the life course.

3. A number of participants did feel that their pressure sores could be directly attributed to them. These adults often practiced preventive techniques and behaviors. But sometimes they felt pressure sores would not ‘happen to me’, and thus forgo practicing techniques or behaviors. On many of those occasions she or he had eluded pressure ulcers, which provided them with a false sense of security. This false sense of security seemed to have overridden any consideration about perpetual danger.

Significance: Health promotion strategies to change behavior and cognitions from ‘will not happen to me’ to ‘it can always happen to me’ need to be considered.

**Phase 2 - During isolation: Themes included**

1. For the initial period in isolation bed rest had a major negative impact on psychological wellbeing. Contributing to this was: Boredom; a feeling life was shrinking, a sense that one’s self had crumbled; and the future was filled with more despair.
However, the main reason given for poor psychological wellbeing and health was as follows. Participants perceived they had no one to listen to their stories and feelings.

Significance: Listening to patients needs to be practiced. Currently we have few guidelines – informed by theory and evidence based knowledge - that offer ways to listen ‘well’. For example, there is a big difference between listening about stories and listening with them.

2. Whilst all participants stated their psychological wellbeing and health was damaged whilst in isolation, a number of participants also reported that over time they experienced positive change. This is similar to the concept of post-traumatic growth. Examples of positive change included: isolation became an opportunity to a) focus on and change one’s self for the better and b) strengthen relationships.

Significance: Isolation should not be automatically considered simply a negative experience. Future work needs to find out what people are doing well and how they achieve positive change.

**Phase 3 - Life post isolation: Themes included:**

1. Sensory overload: The noise of everyday life was taken-for-granted prior to isolation. Post-isolation, however, they suddenly became hyper aware of noise. This caused anxiety, a sense of feeling overwhelmed, confusion, and a sense vulnerability. They longed for the peace and quiet of isolation. They would sometimes avoid social contact as a result.

2. Risk ratio: participants would impose bed care on themselves if they felt they were at risk of developing another pressure sore.

3. ‘Loss’ of post-traumatic growth: personal growth moved into a narrative where one now declined.

Significance: The isolation experience has lasting impact on people. Coping strategies for life outside isolation need to be considered prior to the person leaving the spinal unit isolation ward.

*This research was supported by the UK Spinal Cord Injury Research Network (UKSCIRN).*

**About UKSCIRN**

**by Sally Henry, Programme Manager at UKSCIRN**

UKSCIRN was launched in March 2003 and is now an NIHR Partnership Organisation funded by the Thames Valley Local Comprehensive Research Network. Our priority is to build the portfolio of clinical research into spinal cord injury and so improve the health care and well being of patients with spinal injury. Funding for research projects have been supported through our own funding, the NHS and partner charity organisations. UKSCIRN are able to facilitate collaborative research through the provision of improved infrastructure for research including research nurses and a full time Clinical Scientist.

As a result of peer reviews UKSCIRN will facilitate the development of National Clinical Guidelines and research protocols suitable for collaborative grant applications including UK participation in projects funded by the Rick Hansen Institute, Canada. UKSCIRN are represented on the National Spinal Cord Injury Strategy Board and Subgroup Committee which aims to determine appropriate information management to promote research activity in the area of spinal cord injury.

UKSCIRN support Patient and Public Involvement (INVOLVE) by bringing people with spinal cord injury, their carers and researchers together and this is reflected in the redesign of our website which includes a forum for researchers and a patient section (forum, trial information).

Please visit: [www.spinalresearchnetwork.org](http://www.spinalresearchnetwork.org)
People with physical disabilities are known to be less physically active than the general population and at greater risk for several secondary conditions such as obesity, diabetes, cardiovascular disease, pain, fatigue, and depression. These chronic conditions are often exacerbated by physical inactivity. However, there is considerable evidence showing that regular participation in sports, exercise and other physical activities can help.

What’s the Evidence?
A review article by K. Martin Ginis and A. Hicks (2008) summarized the evidence supporting the benefits of physical activity for the following conditions: fibromyalgia, muscular sclerosis, arthritis, and spinal cord injury. Fibromyalgia (FM) is a chronic pain disorder characterized by widespread non-inflammatory pain in joints and muscles. Cardiovascular exercise has been an effective treatment of FM for over 20 years and improves disease symptoms, aerobic fitness, strength, and psychosocial wellbeing. Likewise, for people with multiple sclerosis, both resistance and aerobic training are beneficial for improving fitness and psychosocial well-being. There is also strong evidence to show that for people with osteoarthritis, engaging in exercise helps to manage pain, and improve health, well-being, and physical fitness.

Each of the disabling conditions mentioned so far are progressive in nature and are defined as diseases whereas spinal cord injury (SCI) is the result of a trauma to the spinal cord that, in most cases, is not progressive. People with SCI are one of the most physically inactive segments of society; indeed, it has been estimated that 50% of people with an SCI participate in no physical activity whatsoever. While there is limited evidence suggesting that SCI-related symptoms—such as pain—improve by exercising, there is moderate to strong evidence showing exercise-related improvements in aerobic fitness, strength, and psychosocial well-being.

What’s the Problem?
We know that exercise is good for people with disabilities--it improves fitness, strength, and well-being. Nevertheless, most people with disabilities are insufficiently active to reap these benefits. This is probably not surprising given the multitude of barriers to activity such as a lack of accessible facilities, time, and motivation; fear of failure or pain; worries about physical limitations, perceptions of unfriendly exercise environments--the list goes on and on. It is no wonder that people with disabilities are less physically active than the general population.

Another key barrier is the lack of basic information and knowledge regarding how to be active with a disability. Consumers and fitness professionals have expressed concern about the lack of information regarding exercise recommendations and prescriptions for people with physical disabilities. What types of exercises are best, how much, how often, and at what intensity? Evidence-based guidelines that answer these questions and meet the specific needs and health considerations of people with disabilities would help consumers know what to do. Guidelines would also help fitness professionals and practitioners recommend exercise accordingly.

With a set of guidelines in hand, physical activity could be promoted more effectively. For example, family members and friends are sometimes hesitant to provide social support for exercise, because of concerns that exercise is inappropriate or unsafe for a person with a physical disability. With guidelines to draw from, physical activity could be promoted with confidence.

Physical Activity Guidelines for People with Spinal Cord Injury
Recently, a Canadian expert panel developed a set of consensus, evidence-based physical activity guidelines for people with chronic SCI (i.e., at least one year post-injury). These guidelines are presented on the next page.

These SCI guidelines represent a model for the development of consensus, evidence-based physical activity guidelines for people with other types of physical disabilities. We know that physical activity can improve physical, psychological and social well-being. The development of physical activity guidelines for people with different types of disabilities is an important step towards establishing physical activity promotion initiatives for disability communities. Knowledge is power. The right information can help people adopt an active lifestyle and reap the many benefits of a physically active lifestyle. For more information, please visit www.sciactioncanada.ca
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<th>How...?</th>
<th>Aerobic Activity</th>
<th>Strength Training Activity</th>
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<td><strong>How often?</strong></td>
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| **How much?** | Gradually increase your activity so that you are doing at least **20 minutes of aerobic activity** during each workout session. | • Repetitions are the number of times you lift and lower a weight  
• Do **8-10 repetitions** of each exercise, this counts as **1 set**.  
Gradually work up to doing **3 sets of 8-10 repetitions** for each exercise. |
| **How hard?** | These activities should be performed at a **moderate to heavy intensity**  
Moderate intensity activities feel somewhat hard to do, but you can keep doing them for a while without feeling tired.  
Heavy intensity activities make you feel like you are working really hard, almost to your maximum and you cannot do these activities for very long without getting tired. | Pick weights heavy enough that you can barely, but safely, finish the 8-10 repetitions of the last set.  
• Be sure to rest for 2-3 minutes between each set of exercise |
| **How to?** | There are many ways to reach this goal, including:  
• **Arm Exercises**: wheeling, arm cycling, sports  
• **Leg Exercises**: body weight supported treadmill walking, cycling  
• **Whole Body Exercise**: recumbent stepper, water exercise | There are many ways to reach this goal, including:  
• **Free weights**  
• **Elastic resistance bands**  
• **Cable pullies**  
• **Weight machines**  
• **Functional electrical stimulation** |

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**Laboratory gets set-up at Stoke Mandeville**

We have recently set-up a laboratory at the Stoke Mandeville Stadium and are working with the GB wheelchair rugby players to further previous work on ratings of perceived exertion (RPE) to a group of individuals with quadriplegia. In an earlier study we found that the use of RPE to self-regulate exercise intensity in persons with lesions at or below T4 was a valid tool. However, this group consisted of relatively well-trained participants, who when compared to individuals with tetraplegia are likely to show more sympathetic nerve activity and some stimulation of the sympathetic nervous system during maximal exercise. Hence, we are now validating these findings in individuals with tetraplegia who have sustained greater sensorimotor loss and subsequent functional and mobility impairment.

We would like to thank the GB wheelchair rugby association for assisting us with the recruitment for this study and extend our thanks to Martin McElhatton at WheelPower who has helped with the coordination of a testing venue at the Stoke Mandeville Stadium.

To know more about this study then please email Tom at: T.Paulson@lboro.ac.uk
PHC Collaborates with the University of Alberta in Canada

Last September, John and Christof spent three weeks at the University of Alberta, supporting Prof. Martin Ferguson-Pell and his team. John and Christof shared their knowledge and experience of physiological testing of wheelchair users. One of the major tasks of the visit was setting up the laboratory for some possible future collaborative work in the field of exercise prescription during manual wheelchair propulsion. With the engineering background of Dr Mojtaba Azadi, one of the Edmonton team members, and the physiological background of John and Christof new devices were installed and modified which gave John and Christof some insights into the mechanical functions of laboratory testing equipment.

We know that there are many different testing procedures and equipment that have been used all over the World to investigate manual wheelchair propulsion which limits a two-site testing venue. Thus, an objective of this visit was to share this knowledge and as an example to see if it would be possible through future collaborative bids to ensure that some standardisation of mathematical models in the calculation of power output can be developed using slightly different wheelchair roller devices.

Dr Vicky Tolfrey joined us for a short visit and Martin set-up a team meeting with Karen Slater the Acting Executive Director of The Steadward Centre for Personal & Physical Achievement. The purpose of this meeting was to discuss the possible recruitment strategy of participants with a spinal cord injury. We envisaged that in 2011 we will be in a stronger position to apply for external funding with members of Prof. Martin Ferguson-Pell’s research team now that we understand the set-up at the University and the community programmes that run through the Steadward Centre. We also had the pleasure of meeting Louise Miller who is the President of the Spinal Cord Injury Treatment Centre (Northern Alberta) Society (SCITCS) which provides opportunities to people with a spinal cord injury. She is has a great passion for furthering the knowledge of exercise for persons with a spinal cord injury and was very supportive of our proposed work with Martin.

With the laboratory ready for testing, John and Christof took their plane home – But first they made sure that they took in some of Canada’s highlights. Not only have they experienced a brilliant, sunny Indian summer with visits to the Rocky Mountains, they also tasted world-famous steaks from Albertan grass-fed cows and got to see the start of the National Hockey League season. Certainly, it was a great experience.

Comments from Professor Martin Ferguson-Pell on the PHC’s visit.

“John and Christof, with Vicky’s leadership, have started an important collaboration between our labs and universities. The Peter Harrison Centre team have unique expertise in the study of wheelchair performance measurement and they provided us with a great deal of practical advice for setting up our lab to so that in the future we should be able to pool data collected in each of our labs. We look forward to welcoming John and Christof (and Vicky too) back to University of Alberta soon!”
Update from Christof Leicht, PHC Research Assistant

The study "The effects of a respiratory-specific warm-up on the physical capacity and respiratory fatigue in individuals with spinal injury" has now been conducted and published*. Below is a short summary of this study, which was supported by a grant from Healthcare and Bioscience.

**Introduction** - It is well documented that a respiratory warm-up (RWU) improves exercise performance in able-bodied athletes. However, its effects in paraplegic individuals are unknown. Therefore, the purpose of this study was to investigate the effect of a RWU in paraplegic individuals.

**Methods** - On two separate days, 9 spinal cord injured participants exercised using an arm crank ergometer at the same heavy exercise intensity for as long as they could. On one occasion, this was preceded by a RWU (using the device “POWERbreathe”), whereas on the other occasion, participants completed the test without the RWU. For both tests, time to exhaustion was recorded along with measures monitoring the breathing pattern.

From left to right, the “POWERbreathe”, a participant performing lung function measurements and a participant during the performance test.

![Graph showing time to exhaustion](image)

**Main findings**

- Time to exhaustion following the RWU was reduced (see Figure).
- A RWU can fatigue the muscles that support breathing if the resistance of the loading device is too high! This results in an increased pulmonary ventilation and breathing frequency, which we observed in our participants. Therefore, care is advised when selecting resistances for a RWU!
- The resistance chosen for the RWU seemed to be too high. We cannot, however, rule out a potential beneficial effect of a RWU on exercise performance if the resistance of the respiratory loading device had been reduced.
- Future studies should explore alternative RWU programmes in spinal cord people. This could be achieved by modifying the design of RWU programmes; by altering the relative resistance of the respiratory loading device, or the time or length of the RWU.


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Christof is a research assistant funded by the PHC, working within the Sports Science strand. His PhD title is ‘Improving training strategies in wheelchair athletes’.

Christof can be contacted at: C.A.Leicht@lboro.ac.uk
Brittle Bone Society Annual Conference, 25-26th September 2010, UK

Dr Vicky Tolfrey was invited to present ‘Health, Wealth and Happiness – The Role of Exercise and Sport’ at this year’s Brittle Bone Society’s Annual Conference, which was held on the 25-26th September at Loughborough.

Thanks were given by Jill Murdoch the Support Worker from the Brittle Bone Society for Vicky’s contribution to the conference.

Jill commented that ‘both adults and children with osteogenesis imperfecta (OI) are beginning to realise the benefits of exercise in helping them with their OI and in realising their potential. The talk with two of our inspirational young members Jack Binstead and David Phillipson demonstrated to others what can be achieved’.

Vicky said that she found the conference environment very warming and there was certainly a great family feel to this annual event. The conference was opened by the Loughborough Mayor, Councillor Jill Vincent.

For further information about the Brittle Bone Society and the Annual Conference 2010 please visit their website at: http://www.brittlebone.org/index.html

1st Annual Trevor Williams Conference, 22nd October 2010, Portugal

Dr. David Howe was delighted to present the 1st Annual Trevor Williams Conference, held on the 22nd October 2010, in Coimbra, Portugal. Trevor Williams was a trailblazer in the field of Adapted Physical Activity internationally and formerly Lecturer in the School of Sport, Exercise and Health Science before he prematurely past away prematurely in 1998. Professor Jose Ferreira Chair of the Faculty of Sport Sciences and Physical Education at University of Coimbra is a former student of Trevor’s and established this keynote lecturer in his honour. David’s Keynote was entitled ‘Athlete as Anthropologist, Anthropologist as athlete: a critical exploration of the Paralympic Movement’.

New Williams Archive launched at the PHC

The Peter Harrison Centre has launched the Williams’ Archive in honour of the late Dr. Trevor Williams. We welcome contributions to the archive in terms of any materials related to the development of disability sport in the UK and internationally. Meeting minutes, event programmes, newspaper clippings will be stored and catalogued for future generations. If you have formerly been involved in disability sport and want to clear out your spare room or study, then rather than putting this information in recycling why not donate it to the Williams’ Archive!

The Imagined Paralympian: Supercrip and the impaired sporting body, 22 September 2010, UK

Dr. David Howe and Carla Silva presented ‘The Imagined Paralympian: Supercrip and the impaired sporting body’ at the Media Communications and Cultural Studies Association (MeCCSA) Annual Conference on Disability Studies Network called Currents in the Mainstream- Where are we going. The conference was held on the 22nd September 2010 at De Montfort University, in Leicester.

The network aims to promote the research, teaching and discussion over issues of media representations of disability and impairment, which after having received critical attention during the 1980s and 1990s, have been overlooked in the 2000s. The conference is an expression of the effort to bring renovated critical attention to the subject. The Peter Harrison Centre participated in this event with a joint presentation of Dr. Howe and Carla Silva, having as a starting point the contributions of a Foucauldian notion of Bio-Power in the understanding of a constructed notion of impairment and critically exploring practical examples from media representations of athletes with impairment, both from British and Portuguese National Contexts. More information about MeCCSA can be found at: http://www.meccsa.org.uk/index.php

www.peterharrisoncentre.org.uk | Tel: 01509 226387
British Triathlon Media Release: Paratriathlon Performance Squad motivate new wave of British athletes

British Triathlon hosted a paratriathlon open day in October, where athletes from around the world of sport had the opportunity to experience this fast growing and dynamic sport and find out more on local clubs and events. The day also offered a paratriathlon classification for attendees, working through a series of tests with British Triathlon classifiers Penny Broomhead and Sam Densem. This enabled athletes to have their official classification enabling them to compete in future events.

This was no ordinary open day however, as all attendees were joined by current members of the British Paratriathlon Performance Squad who provided some top training tips and advice. The day aimed to enable both open day athletes and current performance athletes to learn from each other, utilising the vast amounts of experience in attendance. The day attracted talented athletes from across the sporting community including previous Commonwealth Games medallists and London 2012 Paralympic hopefuls.

Together with our existing four world champions and two previous Paralympic athletes, the potential for success was clear as athletes were given the opportunity to take part in a coached swim and run session using the world class facilities at the National Performance Centre at Loughborough. Fifteen open day athletes attended on the day, which was considered a huge success and the levels of interest and motivation for wanting to become fully-fledged triathletes in 2011 were high. British Triathlon supported this by offering discounted rates for entry into the 2011 Tata Steel British Paratriathlon National Championships.

British Triathlon had six experienced and well-qualified coaches to help support proceedings throughout the day. Sports specific expertise, coaches from British Cycling, England Athletics and wheelchair racing were also on hand to make sure athletes of all abilities were given the time they needed to achieve their personal goals throughout the day.

Similar schemes will be organised in 2011, therefore if you or somebody you know may be interested in paratriathlon please get in touch with Jonathon Riall, the National Paratriathlon Programme Manager on jonathonriall@britishtriathlon.org

Dr Brett Smith Presents a Series of Talks and Workshops in Canada, November 2010

Professor Gibson is working with Brett Smith on a funded project that aims to advance methods and frameworks for understanding masculinities, disability, health, and transition to adult life. The study also provides the opportunity for researchers from Toronto University, Loughborough University, and Bristol University to combine and share expertise and experience, build interdisciplinary capacity, and develop a team for an international program of research.

The research is funded by the Canadian Institute of Health Research. Brett also gave a series of invited talks on disability and narrative theory to the Department of Physical Therapy, the Centre for Critical Qualitative Health Research, and the Faculty of Physical Education and Health (all at Toronto University).
By Georgina Friend, from the National Spinal Injuries Centre

I am the sports therapist clinical support worker at the National Spinal Injuries Centre (NSIC). My job role is split as fifty per cent of my time is spent working with our current inpatients providing a weekly sports timetable for them to take part in. The sports sessions are part of the physiotherapy and occupational therapy goals including balance and hand grip. Each patient has a weights’ assessment and we then devise a weights’ programme that they continue whilst they are an inpatient. We adapt and adjust the weights programme as they get stronger through their rehabilitation.

The sports sessions vary from, table tennis, badminton, hockey, cricket, wheelchair basketball, wheelchair rugby, fitness sessions, blowdarts, bocca, bowls, tennis and wheelchair skills. We also provide a sports carousel afternoon in the summer for all patients to take part in no matter what level of injury they are. We have also put on a sponsored push for patients to take part in and set their own goals whether it be distance or whether it be to push one lap on their own or walk 100m.

Sports in rehabilitation at the NSIC aims to:

1. To assist/complement the rehabilitation program e.g. strengthening, balance, wheelchair skills and co-ordination.
2. To provide an introduction to sport and physical recreation for continued participation within the community.
3. To offer a competitive platform for future sporting activities, for example the Inter Spinal Unit Games, Newcomers Games and National Games.

The other part of my job is to work with our patients after they are discharged so there is someone they can link in with once they have left hospital. This allows them to seek advice on where their local training venue is, what sports are out there for them, link them up with local coaches and clubs as well as sending out information for different camps and talent pathways that may be of interest to them.

We have recently put on a Sports Leaders level 2 course for fifteen of our ex patients who are thinking of pursuing a career in coaching. We have also arranged a specific young person wheelchair skills session for those patients that have been injured for some time but fall into the age bracket of 5-12 years old. The uptake of these courses has so far been positive and a greater number of our patients are taking up or continuing in some form of sports or exercise on discharge. Forty-five of our ex patients have competed at a Paralympics since 1960.

I am the team manager for the annual Inter Spinal Unit games. Each Spinal Unit in the country can bring up to eight people who have been injured within the previous year to take part in competition in a variety of sports. I follow up on these patients once they have competed in the sports to see how I can help them to find sports that interest them once they have left.

We try and get a variety of sports from the usual to the unusual to visit the hospital so that our inpatients can have the exposure of a multiple of sports that are on offer to them before they are discharged.

Having met with Louise Croft at the Paralympic World Cup in Manchester back in May 2010 she was very keen to pay a visit to the NSIC and see the first hand experience of sports in Rehab. Whilst Louise was here at the Unit there was a suggestion for me to come and see the Elite Research side of disability sport and so a visit was planned for me to visit Loughborough University in October 2010.

During my visit to Loughborough, Louise showed me the laboratory where they carry out the physiology respiratory testing and also talked through the research she is looking into at the moment about energy expenditure of athletes. I managed to see some testing for the able bodied athletes using a

Georgina trying out the wheelchair on the accessible treadmill at Loughborough University

Georgina said:
The day was a great success and I learnt a lot. Thank you for allowing me to have a great visit and I hope we keep the links up between the PHC and the NSIC.
wheelchair on the accessible treadmill which I also managed to have a go on at the end of the day.

PhD student Barry Mason also showed me some of the research he was looking into on wheelchair propulsion. Whilst research assistant, Christof Leicht showed me round the laboratories where the Immune Function research testing is done. I also met with Dr Vicky Tolfrey and Dr Lettie Bishop to talk over some possible research links with us at the NSIC through sports in rehabilitation and onto discharge.

The day was a great success and I learnt a lot. Thank you for allowing me to have a great visit and I hope we keep the links up between the PHC and the NSIC.

Louise Croft comments on her visit to the NSIC

I was fortunate enough to be able to visit the NSIC at Stoke Mandeville Hospital in September 2010. I learnt about the role Georgina plays as a sports therapist clinical support worker in a very unique and necessary programme to aid individuals during rehabilitation after a spinal cord injury. The spinal cord injury unit is the largest in the country and has fantastic facilities. These facilities cater for the physical rehabilitation as well as the psychological aspects of dealing with a spinal cord injury.

I shadowed Georgina for the day and I was able to take part in some of the sports provided for the patients, having a go at boccia, badminton and table tennis in a day chair. The unit and the work Georgina does with her colleagues is an integral part of the rehabilitation process after a spinal cord injury and I thoroughly enjoyed understanding the work that goes on at Stoke Mandeville.

Stop Press Items!

- Dr Brett Smith has recently been invited to be a member of the ‘Learning Legacies Group’ that aims to harness opportunities from the 2012 Olympics and Paralympics (Higher Education Academy Network for Hospitality, Leisure, Sport & Tourism). Details can be found at http://www.heacademy.ac.uk/learninglegacies/home

- Dr Brett Smith is pleased to be working, as Co-I, on a project entitled: Promoting physical activity in the spinal cord injury community: Development, mobilization, and assessment of an evidence-based approach (led by Prof. K. Martin Ginis - funded by Social Sciences & Humanities Research Council of Canada, $1.1 million). Brett will be developing evidence-based narratives and examining the impact of these as an effective method of disseminating knowledge and increasing physical activity in spinal injured people.

- Dr David Howe has been awarded a grant by the Canadian Health Research Institute (CHRI) to carry out research on ‘Transition to community fitness programs for persons with disabilities following rehabilitation’. The project will be undertaken in collaboration with Dr. Donna Goodwin from the University of Alberta, Canada ($148k CDN over 3 years).

- The Peter Harrison Centre has been awarded £19,000 by the Youth Sport Trust (Guin Batten). The aim of the Project Group is to bring expert knowledge and innovative thinking to explore what world class support for school age (11-18 years) talented young athletes with disabilities is, and to develop a framework for coaches, teachers, parents and carers to use. Tim Blowers, Jeanette Crosland and Dr Jonathan Katz are working with Dr Vicky Tolfrey (PI) on this project. There is a small advisory group to this project that includes Nik Diaper.

- The PHC would like to congratulate Paul Davies who has accepted the post of Head of Performance with England Netball. We would like to wish him well in his new role and thank him for his continued support of the PHC.
A little over a year on from its launch, 34 athletes applied to Talent 2012: Paralympic Potential, a campaign run by the UK Talent Team in partnership with ParalympicsGB to find sportsmen and women with the potential to become Paralympic champions in 2012, could be on track to do just that.

Now integrated across eleven Paralympic sports the athletes, who were whittled down from some 350 applicants, are making promising progress and already achieving some significant results at an international level.

Nik Diaper, Senior Talent ID Scientist for Paralympic Sport at the English Institute of Sport (EIS), explains: “Our investigations suggested that there were opportunities to target medals in 2012 if we found the right individuals, with the right profiles and put them in the right systems.

“We worked with a number of targeted sports, particularly those where we felt 2012 success could be achieved in what is a relatively short period of time.”

Launched in December last year, the UK Talent Team (a collaboration between UK Sport and the EIS) worked with ParalympicsGB and with targeted Paralympic sports to filter the applicants with the aim of finding those with the potential profile to win Paralympic medals. These individuals were then invited to undertake a series of talent assessment stages designed to investigate their 2012 potential, before being placed into formal talent confirmation programmes.

“There’s still a difficult journey ahead with many challenges to face but we’ve already seen some promising results, including selection for World Championships, National and International medals and even a World Record. This all suggests we’re heading in the right direction” Diaper says.

One athlete to come through the programme is 24 year old Kate Jones, who won silver representing Great Britain in the mixed adaptive coxed four at the Rowing World Championships in New Zealand held on the 4th November 2010. But with a little under two years to go before the games, do these athletes really have a chance of winning medals in 2012?

“These individuals have confirmed to us that they are talented, not just in the physical sense but mentally as well. Some of them have what it takes to achieve success in 2012 and also beyond but time is critical and there’s still work to be done. We now have new athletes locked into the Paralympic system who we were unaware of a year ago. It’s really exciting and great for British Paralympic sport. “Our role now is to ensure the athletes we’ve found are being supported and making progress, whilst I believe it’s equally important that we look towards the longer term, to 2016 and beyond.

“London 2012 provides us with a unique opportunity to build on our previous Paralympic successes and launch British Paralympic Sport to the top of the world” says Diaper.

For updates on Paralympic Potential please visit: www.uksport.gov.uk/talent

Nik can be contacted by e-mail at: Nik.Diaper@eis2win.co.uk

STOP PRESS:

The PHC hosts the 2nd Handcycling Assessment Day mid December. Following the ‘Talent Day’ earlier in the year coordinated by Nik Diaper and Jayne Ellis (Paracycling Coach) two athletes were identified from this initial testing day. As part of the Talent 2012 Project we are testing four athletes including the Podium rider Rachel Morris. It is likely that future testing will be scheduled mid March after the two Majorca camps and then, depending on the race schedule next season, early summer. We are looking forward to working with British Cycling.