Message from the Scientific Director, Professor Roslyn Boyd

In March, the QCPRRC team attended the Australasian Academy of Cerebral Palsy and Developmental Medicine in the Hunter Valley, presenting 41 abstracts and 4 workshops, a centre record (see p3). In May, we presented Mitii™ at the 37th Annual Brain Impairment conference in Perth and met with our collaborators at the Princess Margaret Hospital. In July, I was invited to participate in a Cerebral Palsy Alliance international summit where 35 researchers presented the latest research on “Early Detection and Early Intervention for CP” including from our team, Kerstin Pannek on the “Baby Connectome (diffusion MRI)”, Dr Andrea Guzzetta on the “Neuroplasticity of Vision”, and together we presented on “Early findings from the UPBEAT trial of Action Observation”. In our next newsletter, I will provide a full report of the summit with the key message being that we have good evidence for early detection of infants at risk of CP and some promising trials of early interventions. The summit was held in Vienna in conjunction with the European Academy of Childhood Disability conference where I presented on “Mitii, is the sum greater than the parts?”, making a great impression with the early results of this large trial, and on “How big should the therapy pill be? Lessons from the COMBIT trial”. PhD scholars, Louise Mitchell and Laura Miller, recently submitted their theses relating to these projects – read about the important findings on page 4 and 5. Four of our team have been nominated for the prestigious international Gayle G. Arnold Award for the best scientific paper at the American Academy of Cerebral Palsy in September (see p6). For our families, collaborators and key stakeholders I hope you find the study updates and highlights informative reading. Warm Regards, Ros Boyd

PREDICT outcomes to inform services for children with cerebral palsy study:

National Health and Medical Research Council (NHMRC) Partnership grant awarded!

Investigators: Boyd, Davies, Ziviani, Trost, Barber, Ware, Rose, Whittingham, Whitty, and Bell.

This new funding will enable us to extend our CP Child study which is measuring brain structure and motor development combined with growth, nutrition and physical activity for children at 8 years of age. We will also examine cognitive, motor, educational, communication, participation and quality of life outcomes related to the costs of health care. This will enable us to better predict health outcomes and planning of the timing/type of interventions to guide appropriate service for our population of children with CP (see P10).

GO GREEN

Register to receive our newsletter via email: QCPRRC@uq.edu.au or by returning the enclosed information slip in the reply paid envelope provided.
Mastery motivation as a predictor of occupational performance following upper limb intervention for school-aged children with congenital hemiplegia


Mastery motivation involves the drive to independently persist with solving difficult problems and master challenging tasks in the environment. The primary purpose of this study was to explore the relationship between mastery motivation and performance of individualised outcomes immediately following upper limb intervention in children with congenital hemiplegia. Seventy-seven percent of children participating in both treatment arms of the randomised control trial “COMBiT” achieved clinically significant gains in occupational performance outcomes. Overall the findings of the study indicate that children’s persistence with object-oriented tasks as well as manual abilities need to be considered when undertaking upper limb interventions. Predetermining children’s motivational predispositions can assist clinicians to tailor therapy sessions individually based on children’s strengths, contributing to effective engagement.

Reliability of a novel, semi-quantitative scale for classification of structural brain magnetic resonance imaging in children with cerebral palsy


Neuroimaging is recommended by the American Academy of Neurology and the Practice Committee of the Child Neurology Society in the evaluation of a child with CP if the aetiology has not been established. The huge variability of clinical patterns of structural MRI in children with CP cannot be explained by a descriptive qualitative approach to neuroimages. A novel tool is presented in this paper for systematically assessing brain lesion severity on structural Magnetic Resonance Imaging (MRI). The semi-quantitative scale showed very high inter-rater and intra-rater reliability for all scores further supporting its application in clinical and research contexts to gain a better understanding of the relationship between brain structure and function.

The State of the Evidence for Intensive Upper Limb Therapy Approaches for Children With Unilateral Cerebral Palsy


Abstract online: http://jcn.sagepub.com/content/early/2014/05/11/0883073814533150.abstract

This article forms part of an exciting special edition in the Journal of Child Neurology entitled “Innovation in the Rehabilitation of Children with Cerebral Palsy. A 21st Century View”. This comprehensive overview of the state of the evidence for intensive upper limb therapies for children with unilateral cerebral palsy, pulls together results from 24 published randomised trials of constraint therapy, intensive bimanual therapy and hybrid therapy combining the two approaches. We now know that intensive models of upper limb therapy improve arm and hand skills to a greater extent than traditional therapy. There appears to be little difference between the different intensive therapy approaches as they all seem to improve children’s skills to a similar degree. The key ingredients of effective upper limb therapy is that it must be goal directed, intensive, repetitive, incrementally challenging with enough practice to drive changes in motor skills. The choice of therapy approach ultimately should be determined by child/family goals and preferences, the individual child and contextual factors.

Everyday psychological functioning in children with unilateral cerebral palsy: does executive functioning play a role?


Abstract online: http://www.ncbi.nlm.nih.gov/pubmed/24392947

The purpose of this paper was to investigate whether deficits in cognitive executive functioning, as measured by a neuropsychological assessment, explain deficits in everyday psychological functioning in children with unilateral CP. Executive functioning is an umbrella term that includes planning, organisation, attention and problem solving. We found that the increased risk of children with unilateral CP for experiencing executive functioning deficits in everyday life, behavioural difficulties and hyperactivity is partially explained by deficits in cognitive executive functioning. This study demonstrates the importance of neuropsychological assessments, including for children with mild CP. Accurate information on executive functioning abilities can assist parents and teachers in supporting children with CP and managing behavioural problems, as well as difficulties with planning, organisation, attention and problem solving in everyday life.
The AusACPDM Conference, was an excellent showcase of the exciting research that is happening in the field of cerebral palsy and developmental medicine. International keynote speaker, Professor Unni Narayanan, an orthopaedic surgeon from Toronto, presented on understanding patient priorities to inform the development of meaningful outcome measures, which made us carefully think about the outcome measures we use as part of our research. The most influential presenter for me was Ian Brown, an acclaimed writer from Canada, who spoke about his experiences raising a son with a severe disability. He critiqued society’s assumptions about disability honestly and spoke about the challenges of the health care system, schooling and family life. It was a moving presentation that was extremely well received and appreciated by conference delegates.

Sarah James OT, PhD scholar

The AusACPDM was an inspiring showcase of science. Professor Kerr Graham, Orthopaedic Surgeon, highlighted the importance of communication ability in children with CP, and stressing the need to focus further on research on communication ability in children with CP in the future. Professor Euan Wallace, Obstetrician, brought a different perspective when discussing his progressive research on minimising the impact of birth trauma and adverse intrauterine events on childhood outcomes. The most powerful and inspiring presenter for me was Ian Brown, who shared some of his journey raising his son who has a disability. This was a pertinent reminder of the vital importance of our research and clinical work in helping parents communicate with their children who have significant difficulties.

Andrea Coleman Sp Path, MBBS scholar

Dr Olaf Verschuren, PhD, a physiotherapist from Holland, presented a fitness workshop which included both fitness testing and training in children and adolescents with cerebral palsy. He integrated many studies in his lecture and practical work. He highlighted that fitness training can increase the level of fitness in children and adolescents with cerebral palsy but the level of fitness rapidly declined after stopping the training program. The most important aspect was to reduce sedentary time in children and adolescents with CP.

Piyapa Keawutan PT, PhD scholar

Researchers from the Mitii™ team at the AusACPDM Conference.
L-R: Stephanie Ross, Louise Mitchell, Sarah James, Emmah Baque and Melinda Lewis.

Congratulations to Dr Koa Whittingham who won the award for the best intervention paper for her “RCT of Stepping stones and ACT for parents” and to Sarah James who won the award for the best scientific poster for her “Systematic review of the psychometric properties of Activity of Daily Living measures”!
Laura Miller has submitted her PhD!

Impact of mastery motivation on occupational performance outcomes following upper limb intervention for school-aged children with congenital hemiplegia

Laura Miller BSc (OT) (Hons); MHSM
Supervisors: Professor Roslyn Boyd, Professor Jenny Ziviani

Findings in this thesis enhance our understanding of factors contributing to therapeutic outcomes following upper limb rehabilitation for children with congenital hemiplegia. Importantly, it provides information regarding (1) the extent to which children’s mastery motivation impacts occupational performance outcomes, (2) how parenting styles and family structure influence the processes underpinning mastery motivation including persistence with challenging tasks and/or emotional responses to mastery attempts, and (3) the way a therapeutic environment can enhance or hinder children’s engagement in therapy. This knowledge has the potential to refine clinical practice and inform future research exploring the efficacy of upper limb interventions in children with CP.

What this thesis adds
• Consistent and positive parental disciplinary practices are associated with greater mastery motivation and task persistence.
• Greater task persistence and everyday hand use during daily activities at baseline predict superior occupational performance outcomes post upper limb intervention.
• Consideration of the socio-environmental context of therapy may enhance children’s willingness to persist with challenging tasks.
• Knowledge of children’s mastery motivation can enhance treatment planning to optimise therapy outcomes. Models of upper limb intervention and therapy activities should be individually tailored to the interests and motivational predisposition of the child.

Achievements
Published 5 papers in international journals with a further 2 papers currently under review.
Presented 10 oral presentations and 2 posters at national and international conferences.
• Miller L, Ziviani J, Ware RS and Boyd RN (2013). Mastery motivation as a predictor of occupational performance following upper limb intervention for school-aged children with congenital hemiplegia.
• Miller L, Ziviani J, Ware RS and Boyd RN (2013). Impact of personal and environmental factors on mastery motivation in children with congenital hemiplegia.
Awarded two post-graduate scholarships: NHMRC Allied Health Scholarship (1039832) and University of Queensland Research Scholarship.
Appointed course coordinator and senior lecturer for Occupational Therapy at the Australian Catholic University Brisbane.
The aims of this research thesis were to:

Move it to improve it: using a web-based therapy program to increase physical activity in independently ambulant children with unilateral cerebral palsy

Louise E Mitchell M.HltSt(ClinEpi); B.Phty(Hons1)
Supervisors: Professor Roslyn Boyd, Professor Jenny Ziviani

Despite the benefits of regular physical activity, children with cerebral palsy (CP) are generally less active than typically developing peers. Active video games could be a useful way to increase physical activity. A novel web-based multi-modal training program called Mitii™ offers strength training with upper-limb and visual perceptual exercises. Mitii™ uses virtual therapists to deliver an individualised therapy program using the internet.

Along with team Mitii™, Louise has been testing this new program to see if it can increase strength and physical activity in children and adolescents with unilateral CP who can walk independently.

Louise’s PhD has shown:

1. Accelerometers (small movement detecting devices) accurately measure physical activity in children and adolescents with CP.
2. Generally, children with CP do not meet the Australian Government’s recommendations of 60 minutes ‘huffing and puffing’ exercise every day.
3. Only 25% of children with unilateral CP who walk independently met these recommendations, but the rest were close at 44 minutes per day.
4. Boys, younger children and those who participate a lot in the home and community are generally more physically active than girls and adolescents.

After 20 weeks of Mitii™ training, children were stronger and could walk further! Despite this, physical activity did not increase following training. We also did not notice an improvement in walking limitations or participation in recreational tasks.

Mitii™ is a good way to increase strength and fitness in children with CP but to increase physical activity, more targeted interventions which look at the underlying barriers to participation might be needed.

Achievements

- Produced seven first-author publications and two co-authored publications for peer-reviewed journals
- 17 presentations at national and international conferences during candidature
- Received a student scholarship to attend the American Academy of Cerebral Palsy & Developmental Medicine Conference in Milwaukee USA in 2013 and in San Diego USA in 2014.
- Shortlisted for Menzies Allied Health Scholarship (one of four people across Australia) in 2013
- Winner of Best Poster for early candidature student, QCMRI Student Expo, Royal Children’s Hospital August 2011
Achievements

The QCPRRC team has 4 nominations for best scientific paper (Gayle G. Arnold Award) at the American Academy for Cerebral Palsy and Developmental Medicine meeting, September 2014, – a Centre record!

A randomised controlled trial of a web-based multimodal therapy on occupational performance, upper limb function and visual perception for children with unilateral cerebral palsy
James S, Ziviani J, Ware R & Boyd RN.
This paper reports on occupational therapy outcomes from the “Move it to improve it” (Mitii™) study. Therapy delivered via web-based or virtual reality systems is emerging as a way to deliver therapy for individuals with cerebral palsy. Research to date is primarily from small studies and this paper reports on improvements in motor planning and upper limb coordination from the first large clinical trial of a web-based therapy program for children with unilateral cerebral palsy.

Patterns of gross motor severity and motor type in preschool age children with cerebral palsy: comparison between high and low resource countries
Benfer KA, Jordan R, Bandaranayake S, Finn C, Ware R, Boyd RN.
This paper discusses the patterns of functional gross motor severity and motor type, co-morbidities (epilepsy, vision, hearing, speech and cognition), aetiologies, and environmental risk factors in a comparison between two samples, one in high-resource setting (Australia) and the other in a low-resource setting (Bangladesh). We found that these factors differed markedly between high- and low-resource settings when using consistent diagnostic methods between settings. These findings contribute to our understanding of the influences and patterns of CP in a low-resource setting, and may assist in delivering optimal services to children with CP and their families in such contexts.

Relationship between brain lesion severity and motor outcomes in pre-school aged children with cerebral palsy
Arnfield E, Fiori S, Guzzetta A, Jordan R, Finn C, Ware R & Boyd RN.
This study is the first to examine the relationship between brain structure on MRI (measured both qualitatively and quantitatively with the new Fiori scale (P2)) and to relate this data to gross motor function and manual ability in our population based cohort of children with CP. Quantitative MRI scores were more strongly associated with all motor outcomes than the currently used aetio-pathogenic MRI classification. A novel, clinically accessible, semi-quantitative MRI scale provides an objective description of the static heterogeneous brain lesions that characterise CP. This scale has prognostic potential in predicting the future potential motor outcomes of children with CP from an early age.

Relationship between brain structure and communication skills in children with cerebral palsy
Coleman A, Fiori S, Weir K, Ware R & Boyd RN.
This study examined the relationship between the type and severity of the brain lesion on MRI and communication skills in preschool-aged children with CP. Our results demonstrated a relationship between type and severity of brain lesion and communication skills. We confirmed the importance of lesions in the deep grey matter, often found in children with CP born at term, in predicting poorer communication skills. We did not find a difference between children with left- and right-sided brain lesions, or lesions in the presumed language pathway.
Meet our new team members...

**Dr Anna MacDonald: Research & Operations Manager**
Anna’s background and experience is in language neuroscience research, clinical speech pathology, research communication and research development. Her research has focused on the cognitive and brain mechanisms underlying language processing, its breakdown and treatment. Prior to coming on board with the QCPRRC, Anna was at The University of Queensland’s School of Population Health in research development and management. Her primary responsibilities revolve around the research governance, operational management and strategic development of the QCPRRC.

**Adina Piovesana: Research Psychologist (Neuropsychology)**
Adina is a registered psychologist and is in the process of submitting her PhD through the University of Southern Queensland. Her research and clinical interests are in neuropsychological assessment. She has experience in paediatric research having worked on a NHMRC funded research project at the Royal Children’s Hospital testing the neurobehavioural outcomes of children with cystic fibrosis. Adina also works with children and adolescents in private practice. Adina has joined Team MiTii evaluating Executive Function outcomes.

**Jarred Gillett: Biomechanist, PhD Student, NHMRC Scholar**
Jarred joined the QCPRRC team in February 2014 to undertake a PhD. He is investigating the impact of heavy progressive resistance exercise combined with functional skills training on muscle structure and gait deficiencies in young adults with cerebral palsy. Prior to commencing his PhD, Jarred completed a Bachelor of Exercise Science with 1st Class Honours at Griffith University and has extensive clinical gait experience working as a biomechanist within the Queensland Children’s Gait Laboratory in Brisbane, Australia. Jarred is also an international FIFA football referee so keep an eye on your T.V. and you may see him running around a football field near you!

**Dervla Ryan: Physiotherapy Honours Student**
As a final year Physiotherapy student at UQ, Dervla is researching the validity of the Ramp Test for measuring lower-limb power in ambulant children with CP. She is very grateful for the opportunity to be involved in paediatrics and the experimental work at the gait laboratory with Dr Lee Barber as her supervisor.

**Felicity Read: Physiotherapy Honours Student**
Felicity is in her 4th year of Physiotherapy at UQ. Her honours project is investigating the effect of Botulinum toxin A on calf muscle volume in children with CP using 3D ultrasound. Felicity is excited to be a part of the QCPRRC team and to gain experience in paediatrics and research under the supervision of Dr Lee Barber.

**Angie Strelow: Administration Officer**
Angie joined the QCPRRC team in April 2014 bringing vast experience from The University of Queensland’s School of Medicine and NSW Local Government. Angie is working Monday to Wednesday in a job share arrangement with Alice Greenwood providing support to the Scientific Director, staff and students at QCPRRC.
**PPREMO: Prediction of PREterm Motor Outcomes**

*Prof Roslyn Boyd, Prof Paul Colditz, A/Prof Stephen Rose, Ms Joanne George, Ms Kerstin Pannek*

PPREMO is investigating whether early brain MRI scans (at approximately 30 weeks gestation) combined with movement and behavioural assessments can help identify which preterm babies are at risk of problems later in life. The goal being an earlier identification of babies at high risk of CP. This may lead to earlier interventions and possibly improved developmental outcomes for their future.

There are 4 assessment time points for the preterm group: 30 weeks gestation, 40 weeks or term equivalent, 3 months corrected age and 1 year corrected age. To date, PPREMO has had 68 preterm babies consent to the study from the Neonatal Intensive Care Unit, RBWH and over 50 of these babies have been assessed.

We have also recruited 14 term born babies, to act as our control group, however we *still need a further 6 babies to complete this group*. If anyone would like to participate, or knows a family who may be interested, please contact the study group.

As the study has been recruiting for over 1 year we now have the pleasure of seeing our earlier participants coming back for their 1 year corrected age assessments.

*Ms Joanne George*
T: 07 3646 9609  
E: j.george2@uq.edu.au

Trial ID: ACTRN12613000280707

Funding support:
Research Foundation of the Cerebral Palsy Alliance  
Financial Markets Foundation for Children.

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**UP-BEAT: Upper limb Baby Early Action Observation Training**

*Prof Roslyn Boyd, Prof Jenny Ziviani, Dr Andrea Guzzetta, Prof Virginia Slaughter, Ms Micah Perez, Ms Lisa Findlay, Ms Bernadette Shannon (ARC Australian Research Council DP110104292)*

We now have a combined cohort of 46 healthy term-born participants and 27 participants with an asymmetric brain injury. We continue to *seek five more families whose babies were born with an asymmetric brain injury to take part*. All babies need to be younger than 9 weeks post-term or corrected age. Participating in this study may enhance the baby’s reaching and grasping skills. At the end of the study, parents will receive a summary report of their child’s development, as well as a copy of all videos taken of the child during the study.

We are in the process of writing papers to report on the development, validity and reliability of the ‘Grasping and Reaching Assessment of Brisbane’ (GRAB), which is a new measure we have developed to evaluate the early development of reaching and grasping behaviours in babies with asymmetric brain injury. Early detection of reaching and grasping asymmetries between hands can allow for prompt and early intervention that may help these babies to develop more complex upper limb motor skills that they will need later in life.

It is an exciting time for the UPBEAT team as we have started to analyse data for our Brisbane and Pisa cohorts.

*For more information or if you would like to be involved, please contact:*

**Bernadette Shannon:** T: 07 3646 5540  E: bernadette_shannon@health.qld.gov.au  
**Micah Perez:** T: 07 3646 5372  E: m.perez1@uq.edu.au

Funding support:
Infant Study Updates

Prem Baby Triple P: Supporting Parents of Preterm Infants
Prof Paul Colditz, Prof Matthew Sanders, Prof Roslyn Boyd, Dr Margo Pritchard, A/Prof Peter Gray, A/Prof Michael O’Callaghan, Prof Virginia Slaughter, Dr Koa Whittingham. (NHMRC 1024345)

Having a very preterm baby can be an extremely challenging time for parents in the Neonatal Intensive Care Unit with the challenges often persisting as their babies are at a higher risk than term babies for many adverse outcomes including behavioural and learning difficulties.

The Prem Baby Triple P Study is evaluating the effectiveness of a parenting program for parents of very preterm infants (<32 weeks gestational age) in improving both child and parent/couple outcomes at 24 months corrected age. Recruitment is progressing well with 113 RBWH and 109 Mater Mothers’ Hospital families now participating. The study is on track to finalise recruitment by the end of April 2015.

If you would like to find out more about this project please visit our website.
Contact us: Dr Leanne Winter (Project Coordinator)
T: 07 3646 2349 E: prembabytriplep@psy.uq.edu.au Website: http://exp.psy.uq.edu.au/prembaby

PREMM Study: PREMature Infants Massage Therapy
Dr M Giulia D’Acunto, Dr Andrea Guzzetta, Prof Roslyn Boyd, Prof Paul Colditz, Ms Naoni Ngenda, Ms Penny Love, Dr Melissa Lai, Ms Bernadette Shannon, Ms Sonia Sam, Ms Kerstin Pannek

The PREterm Early Maternal Massage (PREMM) study is investigating an early intervention programme which is based on enriching the postnatal environment to optimise brain development and infant attachment. Outcomes are being assessed at a radiological level with MRI, neurofunctional level with dense array EEG, body composition level with the PEAPOD (machine designed to measure body fat and lean muscle mass), clinical level with neurodevelopmental assessments and infant observations to assess maternal-infant attachment.

Participants include preterm infants of 28 to 32+6 weeks gestation who are stable off oxygen and have no evidence of intraventricular haemorrhage, periventricular leukomalacia or congenital malformations. Infants are randomised to a massage intervention administered by the mother on a daily basis up until term, or a control standard care group. Recruitment has progressed well and so far we have 47 preterm infants randomised and 10 term control infants recruited. We aim to complete recruitment by the end of this year.

For more information about the PREMM project, please contact:
Melissa Lai melissa.lai@uq.edu.au
Child Study Updates

CP Child: Gross Motor and Brain Development
Prof Roslyn Boyd, Dr Lynne McKinlay, Ms Megan Kentish, Ms Meredith Wynter, Ms Christine Finn, Ms Rachel Jordan (NHMRC 465128)

The QLD CP Child Team has been busy completing the last of our 5 year old assessments, and is now into the final year of the study. We have upcoming outreach trips planned to Cairns, Townsville, Rockhampton, Toowoomba and the Gold and Sunshine Coasts for the CP Child and GNPA studies, which will conclude in March, 2015. The team will be presenting at the American Academy of Cerebral Palsy and Developmental Medicine (AACPDM) conference in San Diego in September this year on the “Relationship between brain structures and motor function” and “Patterns of gross motor severity and motor type in preschool age children with cerebral palsy: comparison between high- and low-resource countries”. The second presentation combines data from children with CP in Bangladesh and Queensland. Both these papers have been nominated for the 2014 Gayle G. Arnold Award for Excellence for best paper (see p6).

Rachel Jordan, who has been with the team for more than three years, as physiotherapist and study co-ordinator, has been on extended long service leave following her wedding in Hawaii in January, and is now planning to continue her adventures in New York. She hopes to catch up with the team at the AACPDM Conference. We wish her all the best.

For more information or if you would like to be involved, please contact Camilla Davenport, who is now in the role of study co-ordinator, T: (07) 3646 5541 or E: camilla.davenport@health.qld.gov.au

Growth, Nutrition and Physical Activity
Prof Peter Davies, Prof Roslyn Boyd, Dr Kristie Bell, Prof Richard Stevenson, Ms Camilla Davenport, Ms Stina Oftedal, Ms Kelly Weir, Ms Kath Benfer, Ms Piyapa Keawutan (NHMRC 569605)

The Growth, Nutrition and Physical Activity study team has been busy conducting assessments, visiting families on outreach and analysing data. Many of the children participating are now being seen for their final assessments. It has been wonderful catching up with families and seeing children graduate from the study after their 5 year assessment. The team has been working hard analysing data relating to dietary intake and body composition, micronutrient and energy intake, physical activity, feeding ability and food textures.

A number of our team members are preparing to present data at the prestigious American Academy for Cerebral Palsy and Developmental Medicine in San Diego in September.

We are well under way with the new arm of the study investigating Bone health in a 30 minute Dexa study. Children who are being seen for their 5 year old assessments and who can travel to the Royal Children’s Hospital are eligible to participate in the bone health study. Please don’t hesitate to contact us if you would like more information.

We are still recruiting and would welcome any children who are born in QLD in 2009 with a diagnosis of cerebral palsy. For more information on the study, or if you would like to participate, please contact Dr Kristie Bell (study coordinator) T: (07) 3646 5541 or E: k.bell@uq.edu.au

STOP PRESS!

We will be inviting back children from the birth years of 2006, 2007, 2008 and 2009 for PREDICT
Families who helped us in the CP Child and GNPA studies can be part of our recently funded PREDICT study when their child reaches 8/9 years. As a “one-off “ visit we will be inviting children to attend a comprehensive evaluation of motor capacity, performance, bimanual coordination, communication, executive function, growth, body composition, bone health, educational attainment which will be related to brain structure. In addition to comprehensive reports on health outcomes, this study will enable us to build prediction models so that for future infants born with CP we can predict their outcomes and service requirements (see p 1).
Mitii™: “Move it to improve it” for Children with Cerebral Palsy

Prof Roslyn Boyd, Prof Jenny Ziviani, Ms Louise Mitchell, Ms Sarah James, Ms Adina Piovesana, Ms Stephanie Ross, A/Prof Anthony Smith

The Mitii™ team are nearing the end of this large randomised clinical trial! We were pleased to have included 102 children with unilateral CP and their families from all over Queensland and New South Wales with assistance from the CP Alliance. Participants have been able to access Mitii™, a multimodal therapy program delivered daily via the internet, in their home for 20 weeks. The multidisciplinary team collected a range of data including daily living skills, upper limb function, physical activity, visual perception, cognitive functioning, participation and quality of life as well as MRI imaging. We have also been interested to hear about the experiences of children and their families participating in this the program through interviews with participants. Results will be published in the near future so watch this space! Louise Mitchell has recently submitted her PhD thesis on physical activity outcomes so a big congratulations to Louise (see p5). We would like to thank all of our participants and their families for their involvement and support of the study.

Mitii™: “Move it to improve it” for Children with Acquired Brain Injury

Prof Roslyn Boyd, Prof Jenny Ziviani, Ms Emmah Baque, Ms Adina Piovesana, Ms Stephanie Ross, Dr Lynne McKinlay, Owen Lloyd.

Mitii™ ABI have recently finished data collection for baseline and 20-week follow up assessments meaning we will be spending the next six months doing final follow up analysing and publishing the results! 58 children with an ABI participated. We will now be able to look at whether 20 weeks of intensive Mitii™ training can improve upper limb functioning, physical activity and cognitive skills in children and adolescents with an acquired brain injury. A huge thankyou to all our participants and their families for their involvement and support of the study.

For more information on Mitii, contact our Mitii™ team:
Phone: 07 3646 6423
Email: Stephanie_Ross@health.qld.gov.au or s.james2@uq.edu.au

Funding support: Queensland Government
Children Study Updates

MiYoga: Mindfulness Yoga for Children with Cerebral Palsy and their Caregivers
Ms Catherine Mak, Dr Koa Whittingham, Prof Roslyn Boyd and A/Prof Ross Cunnington

MiYoga continues into 2014. Eighteen families have signed up and parents and children have reported enjoying the opportunity to take part, meet other families and learn some mindfulness and yoga techniques that can be incorporated into everyday life. There is currently no research into the usefulness of yoga in children or adolescence with CP – this is the first study of its kind and we hope it will add to the available knowledge base in CP research.

Participants will receive a brief neuropsychological report that outlines the child’s cognitive functioning. This written report will highlight their strengths and difficulties. Along with the report there will be some general recommendations and tips on how parents can help their child develop and strengthen different cognitive abilities.

Recruitment is still ongoing, so if you have a child with diplegia or hemiplegia between 6 - 16 years of age and would like to be involved in this novel study or if you would like to find out more about this project, please contact our registered yoga teacher, psychologist and study coordinator: Catherine Mak, T: (07) 3646 5539; E: c.mak@uq.edu.au or visit our website https://exp.psy.uq.edu.au/miyoga/.

Come and join us on our MiYoga adventures! We have been busy exploring through yoga. We travelled in to Space, the North Pole and we even got to meet Superman! I wonder where MiYoga will take you?

Muscle Studies in Cerebral Palsy
Dr Lee Barber, Dr Chris Carty, Dr Glen Lichtwark, Prof Roslyn Boyd

Individuals with cerebral palsy have muscles that have adapted and function in different ways than typically developing muscles. Treatments such as physiotherapy, orthoses, Botulinum toxin A injections and surgery are used to keep the muscles working well and help maintain daily activities. We are continuing to learn new information about the effects of these and new treatments. There are four new studies starting in our Centre investigating treatments and leg muscle function. Mr Jarred Gillett has joined our team as a PhD student funded by NHMRC and Lions Scholarships and is about to embark on a very important study investigating the impact of combined weight training and skills training on muscle stiffness and walking ability in young adults with CP.

Ms Felicity Read and Ms Dervla Ryan are Physiotherapy Honours Research students from The University of Queensland and are investigating the longitudinal effects of Botulinum toxin A on muscle structure, lower limb power generation and walking quality in children with CP. Dr Glen Lichtwark and Shari O’Brien from the School of Human Movement Studies, The University of Queensland are discovering what happens to muscles in young and older adults with CP in a study funded by Cerebral Palsy International.

Dr Lee Barber has teamed up with CP research groups in Victoria and Western Australia to expand the investigation of muscle growth in young children with CP and the impact of Botulinum toxin A in a multisite trial funded by the Research Foundation of the CP Alliance.

Thank you very much to those that have already been involved and we look forward to meeting new interested participants. If you would like to be involved please contact us.

Dr Lee Barber
T: 07 3646 4955
E: l.barber@uq.edu.au

The University of Queensland Australia

[Image of yoga poses]
American Academy of Cerebral Palsy and Developmental Medicine
The 68th Annual Meeting of the American Academy for Cerebral Palsy and Developmental Medicine (AACPDM) will take place between September 10-13 2014, in San Diego, CA, USA.

http://www.aacpdm.org/meetings/2014

The AACPDM Annual Meeting provides high-quality dissemination of information in the basic sciences, prevention, diagnosis, treatment, and technical advances as applied to persons with cerebral palsy and other childhood-onset disabilities. To Boldly Go... is the theme for the 2014 Annual Meeting. Twelve Staff from the QCPRRC will be attending the meeting, presenting a record 22 free papers, 5 scientific posters, two instructional courses and one pre-conference seminar.

Lady Cilento Children’s Hospital
Opening at South Brisbane in late 2014, the Lady Cilento Children’s Hospital (LCCH) signals the beginning of a new era for children's health care in Queensland. The Royal Children’s Hospital and Mater Children’s Hospital will be merged into one hospital to improve patient outcomes. For more information on the LCCH visit:


Centre for Children’s Health Research
Scheduled to open in April 2015 next to the LCCH, the Centre for Children’s Health Research will bring together child-health researchers from the Royal Children’s Hospital, Mater Children’s Hospital, The University of Queensland, Queensland University of Technology & The Translational Research Institute. The QCPRRC team are excited to be a part of this new facility and are busy planning our move in March 2015. In the mean time, it is business as usual.

Congratulations to Hans Kainz
Hans Kainz, Biomechanist and PhD candidate with Griffith University who is currently completing experimental work with the QCPRRC at the gait laboratory has won a 2014 Research Higher Degree (RHD) Scholarship from the Gold Coast Association of Postgraduates. This scholarship recognises RHD students who have combined academic achievement with contributing to the university. Well Done Hans!
How does exercise affect your muscles?

Help us understand how different forms of exercise affect how your muscles work.

We are comparing different types of exercise and training on how the leg muscles and tendons work in young adults with cerebral palsy. We will be using ultrasound, strength testing equipment, and exercise tests to look at how you and your muscles function before and after exercise training.

If you (or someone you know) have cerebral palsy, are between the ages of 15-30 years, and can walk independently you could really help us. We will be conducting the study during 2014 and 2015 and the findings may help tailor future exercise programs for people with cerebral palsy. If this has sparked your interest and you would like to volunteer, or if you have further questions, please contact us and we can send you an information pack.

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Muscle Function and Physical Activity over the Lifespan in People with Cerebral Palsy

We are investigating the factors which contribute to declines in function across the lifespan in people with Cerebral Palsy. This project aims to look at muscle degradation throughout life and its relationship to changes in physical activity levels. We will be using a questionnaire, ultrasound, functional measures, an activity monitor and strength testing equipment to look at how your muscles function and changes in your physical activity involvement.

If you have Cerebral Palsy, are between the ages of 18-65 years, and can walk (with or without a walking aid) you could really help us. We will be conducting the study during 2014 and 2015 and the findings may help your function and activity levels.

If this has sparked your interest and you would like to volunteer, or if you have further questions, please contact us.

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MiYoga Mindfulness Yoga in action

For children with cerebral palsy and their caregiver

Does an 8 week mindfulness yoga program, “MiYoga”, enhance cognitive function such as attention, physical strength and fitness, behavior and emotional control in children with diplegia and hemiplegia? MiYoga incorporates a family centered approach to therapy by inviting a caregiver to participate alongside their child. The program will be facilitated by a registered psychologist who is also a Yoga Australia registered yoga teacher with experience in teaching yoga to children with disabilities.

Participants will receive a brief neuropsychological report that outlines the child’s cognitive functioning. This written report will highlight their strengths and difficulties. Along with the report there will be some general recommendations and tips on how parents can help their child develop and strengthen different cognitive abilities.

Inclusion: Children with diplegia or hemiplegia, aged 6–16 years who can walk independently or with a gait aid (GMFCS I-III) and one of their caregivers

Exclusions: Participants (child and caregiver) must not have:
- Uncontrolled seizure disorder
- Spinal instability or other spinal problems that cause pain or preclude exercise
- Participating caregivers must not be pregnant

Potential participants should have sufficient cognitive understanding and cooperation to follow instructions and perform tasks

Participation commitment:
- 3–4 assessment sessions in Brisbane over an 8–10 month period
- 6 x 90min sessions of MiYoga, once-a-week for six weeks, followed by two once-a-week skype/phone consultations, and daily home practice along with MiYoga poster/DVD for a minimum of 20 minutes a day during the whole 8 week period

FOR MORE INFORMATION

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Queensland cerebral palsy & rehabilitation research centre