

Peninsula Health Physiotherapy Research

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Peninsula Health Physiotherapy Research

Committee:

Narelle Watson

– Chairperson

Physiotherapist Frankston Hospital

Dr Leonie Oldmeadow

– Physiotherapy Clinical Research Coordinator

Jane Roberts

– Director of Physiotherapy

Caroline Stapleton

– Physiotherapist Ageing Well

Peter Hough

– Physiotherapist The Mornington Centre

Mani Sundaram – Physiotherapist Frankston Hospital

Michael Davis

– Physiotherapist Frankston Hospital

Evelyn Quan

– Physiotherapist Community Rehabilitation

Natasha Carpenter

– Physiotherapist Frankston Hospital



Peninsula Health Physiotherapy Research

Our Staff



[Alison Cotton](#)
Physiotherapist
Acute Outpatients and ED
Practitioner



[Mick Davis](#)
Grade 2 Neurology
Physiotherapist
Frankston Hospital



[Peter Hough](#)
Senior Physiotherapist
Geriatric Evaluation and
Management



[Alison Hunt](#)
Senior Physiotherapist
Geriatric Evaluation and
Management



[Fiona Kent](#)
Physiotherapy Student
Coordinator Peninsula
Health



[Dr Leonie Oldmeadow](#)
Physiotherapy Clinical
Research Coordinator
Peninsula Health/Monash



[Caroline Stapleton](#)
Senior Physiotherapist &
Agestrong Network
Coordinator



[Narelle Watson](#)
Primary Care
Physiotherapy Practitioner
Frankston Hospital
Emergency Department

Profile of Researchers within Physiotherapy



Alison Cotton

Current Role: Acute outpatients and Emergency Department Practitioner
Frankston Hospital Emergency Department

Research interests: All things musculoskeletal!

Current Research

Alison is currently undertaking research to investigate the contribution of exercise with and without weight loss to patients' condition while awaiting hip or knee joint replacement surgery.

Contact: physiotherapyresearch@phcn.vic.gov.au

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Profile of Researchers within Physiotherapy



Michael Davis

Current Role: Grade 2 Neurology
Physiotherapist Frankston Hospital

Research interests: Physiotherapy in Acute
Care, Gait Disorders in Neurology, History of
Therapeutic Exercise

Current Research:

Michael is currently the Principal Investigator for the Frankston Hospital arm of the AVERT project, an NSRI randomised controlled trial of the effects of early rehabilitation for acute stroke.

Contact: physiotherapyresearch@phcn.vic.gov.au

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Profile of Researchers within Physiotherapy



Peter Hough

Current Role: Aged Care Senior Physiotherapist
The Mornington Centre

Research interests: Clinical evaluation of aged care interventions

Research Outline:

Peter has been co-researcher in a project evaluating the reliability of a hand held dynamometer in aged patients following a simple protocol in new graduate therapists.

Peter has recently evaluated the impact of a trial period of use of hip protectors prior to permanent issue on their ongoing compliance rates after discharge from a GEM facility.

Current Research

Peter is currently investigating strategies for improving pedometer reliability and validity amongst older subjects with gait anomalies.

Contact: physiotherapyresearch@phcn.vic.gov.au

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Profile of Researchers within Physiotherapy



Alison Hunt

Current Role: Aged Care Senior Physiotherapist
The Mornington Centre

Research interests: Clinical evaluation of aged care interventions

Alison has been co-researcher in a project evaluating the reliability of a hand held dynamometer in aged patients following a simple protocol in new graduate therapists.

Current Research

Alison has recently evaluated the impact of a trial period of use of hip protectors prior to permanent issue on their ongoing compliance rates after discharge from a GEM facility.

Contact: physiotherapyresearch@phcn.vic.gov.au

Profile of Researchers within Physiotherapy

Fiona Kent

Current Role: Physiotherapy Student Coordinator
Peninsula Health, Sessional Teacher Monash
University, APA Neurological Physiotherapist

Research Interests: Fiona is interested in the
evaluation of clinical education and implementation of
evidence based neurological care

Current Research:

Fiona is currently investigating the impact of physiotherapy clinical education on patient care, as part of her Masters in Health Professional Education.

Contact: physiotherapyresearch@phcn.vic.gov.au

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Profile of Researchers within Physiotherapy



Dr Leonie Oldmeadow

Current Role: Physiotherapy Clinical Research
Coordinator Peninsula Health/Monash

Research interests: fracture management, early
discharge programs, extended scope of practice

Research Outline:

Oldmeadow L, Bedi H, Burch H, Smith J, Leahy E, Goldwasser M (2007): Experienced physiotherapists as gatekeepers to hospital orthopaedic outpatient care, *Medical Journal Australia* 2007; 186 (12): 625-628

Oldmeadow L, Edwards E, Kimmel L, Robertson V, Bailey M (2006): No rest for the wounded: Early ambulation after hip surgery accelerates recovery, *Australian and New Zealand Journal of Surgery* 76, 607-611

Oldmeadow L, McBurney H, Robertson V, Kimmel L, Elliott B (2004): Targeted postoperative care improves discharge outcomes after hip or knee arthroplasty, *Archives Physical Medicine and Rehabilitation* 85 (9): 1424-1427

Current Research

Is bed rest necessary after surgical fixation of an ankle fracture?

Three-day stays after elective hip and knee arthroplasty.

A strength and balance exercise program for CKD patient on dialysis.

Contact: physiotherapyresearch@phcn.vic.gov.au

Profile of Researchers within Physiotherapy



Caroline Stapleton

Current Role: Senior physiotherapist and Agestrong Network Co-ordinator

Research Interests: The application of effective Agestrong strengthening programmes in elderly populations

Research Outline:

Caroline has been the principal researcher in a study to report upon the reliability, predictive accuracy, and uptake of a brief falls risk screening tool (FRAT) in subacute and residential aged care.

Current Research:

She is currently involved in research activities investigating the effectiveness of Agestrong (a strength and balance program for older people), and its feasibility in targeted new settings.

Contact: physiotherapyresearch@phcn.vic.gov.au

Profile of Researchers within Physiotherapy



Narelle Watson

Current Role: Primary Care Physiotherapy Practitioner
Frankston Hospital Emergency Department

Research interests: Clinical evaluation and optimal management of musculoskeletal conditions.

Research Outline:

Narelle has developed the role of Primary Care Physiotherapy in the Frankston Emergency Department and measured the impact of this role on waiting time for patients and patient satisfaction.

Current Research

Narelle is currently undertaking a PhD investigating the effects on function of time of immobilisation following Open Reduction and Internal Fixation for distal radius fractures in adults.

Contact: physiotherapyresearch@phcn.vic.gov.au

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Completed Projects

- **The Development of a Falls Risk Assessment Tool For Aged Sub-Acute Residential Care Facilities:** (Stapleton, Hough, Bull, Greenwood and Hill, 2005) Investigation of Predictive validity of a Falls Risk Assessment Tool (FRAT) designed for nurses in non-acute aged care facilities. [\[click to view abstract\]](#)
- **Evaluating Long Bone Fractures in Emergency Department for Children under 5 years: Meeting the Challenge of Child Protection.** (Glover and O'Brien, 2007) An evaluation of the assessment and documentation of ED medical, nursing and allied health staff's interventions with respect to children less than 5 years of age who present to ED with long bone fractures. [\[click to view abstract\]](#)
- **Dynamometer Reliability Study:** (Hough, Hunt, Nguyen and de Morton, 2007) A test of the inter and intra-rater reliability of the hand held dynamometer to measure biceps brachii and quadriceps femoris muscle strength. [\[click to view abstract\]](#)
- **Hip Protector Compliance following a trial before prescription in subacute, elderly inpatients:** (Hough and Hunt, 2008) An investigation into the potential to improve follow up compliance with use of hip protectors 6 months post discharge from a GEM facility through use of an initial trial period prior to prescription. [\[click to view abstract\]](#)
- **Outcome Measures:** (Hale, McGill and Stapleton, 2008) Development and implementation of a suite of outcome measures that will be used in both the inpatient and outpatient settings to evaluate the Agestrong Program. [\[click to view abstract\]](#)
- **Circuit Training for Stroke Patients:** (Kent K, McKenzie D and Sounthakith V, 2008) Ambulant stroke patients with residual gait deficits participated in circuit training in addition to their standard therapy care. Activities included treadmill training, cycling and stair training for a period of 1.5 hrs, 3 times weekly for 4 weeks. Walking speed, endurance and self perceived independence were measured at commencement and completion. [\[click to view abstract\]](#)

The Development of a Falls Risk Assessment Tool For Aged Sub-Acute Residential Care Facilities

Stapleton C, Hough P, Bull K, Greenwood K and Hill K 2005

ABSTRACT

The aim was to investigate predictive validity of a Falls Risk Assessment Tool (FRAT) designed for nurses in non-acute aged care facilities.

Nine items were included: ambulation, cognition, continence, medical conditions, medications, psychological status, recent falls, sensory input and transfers. The validity of the FRAT for predicting faller versus non-faller group membership was examined over four months for 291 residents/patients.

Eighty-nine subjects fell in this period: single=39; 2-3=29; 4or>4=21, non-fallers=202. Comparing non-fallers with fallers a highly significant discriminant function resulted, $x^2(4, n=291) = 89.89, p < .0001$. Four items entered the equation, with correlations between the four predictors and the discriminant function indicating that recent fall was the best predictor (.82), followed by psychological status (.55), medications (.46) and cognition (.41). A composite variable calculated from individual's scores on these four predictors correctly classified 80.4% of individuals, with a specificity of 90.1% and a sensitivity of 58.4%, using a cut-off score of 14.

Four items, easily obtained within two minutes by nurses from admissions procedures, can be used to predict those who are at most risk of falling. Patients scoring highly on these four items of the FRAT need maximum fall alert care. Staff cannot rely solely on this tool, but can expect most fallers to be identified.

Research conducted between 2003 – 2004 at The Mount Eliza Centre.

Address correspondence to: Ms C Stapleton, Project Officer Ageing Well, The Mount Eliza Centre Phone: 97881319.

- Campbell A, Reinken J, Allan B, Martines G.** Falls is Old Age: a Study of Frequency and Related Factors. *Age Ageing* 1981; 10: 264 – 270.
- Whipple Rh, Wolfson JL, Amerman PM.** The Relationship of Knee and Ankle Weakness to Falls in Nursing Home Residents. *J.A.M. Geriatric Society* 1987;35: 13 – 20.
- Tinetti MG.** Factor's Associated With Serious Injury During Falls by Ambulatory Nursing Home Residents. *J.A.M. Geriatric Society* 1987;35: 644 – 648.
- Rubenstein LZ, Robbins AS, Schulmen BL, Rosado J, Osterweil D, Josephson KR.** Falls and Instability in Elderly. *J.A.M Geriatric Society* 1988;36: 266 – 278.
- Vellas, Cayla F, Bocquet H, de Pemill F, Albarede J.** "Prospective Study of Restriction of Activity in Old People After Falls" *Age and Ageing* 1987;16: 189 – 193.
- Whedon M, Shedd P.** Prediction and Prevention of Patient Falls. *IMAGE: Journal of Nursing Scholarship* Summer 1989: 21(2): 108 – 114.
- Macrorowski LF, Munro BH, Dietrich Gallagher M, McNew CD, Sheppard-Hinkel E, Wanich C, Ragan PA.** A Review of the Patient Fall Literature. *Journal of Nursing Quality Assurance* 1988;3: 18 – 27.
- Tinetti ME, Inouye SK, Gill TM, Doncette JT.** Shared Risk Factors for Falls, Incontinence and Functional Independence. *JAMA* 1995;273: 1348 – 53.
- Hernandez M, Muller J.** How to Reduce Falls. *Geriatric Nursing March/April* 1986;97 – 102
- Fife D, Solomon P, Stanton M.** A Risk / Falls Programme: Code Orange for Success. *Nursing Management* 1984: 15(11): 50 – 53.
- Hu M-H, Woollacott MH.** Balance Evaluation, Training and Rehabilitation of Frail Fallers. *Reviews in Clinical Gerontology* 1966;6: 85-99
- Gross Y, Shumanoto Y, Rose C, Fraile B.** Why Do They Fall: *Monitoring Risk Factors in Nursing Homes* 1990: 16(4): 20-25.
- Shumway-Cook A, Gruber W, Baldwin M, Liao S.** The Effect of Multidimensional Exercises on Balance, Mobility and Fall Risk in Community Dwelling Older Adults. *Physical Therapy* January 1997;77 (1): 40 – 56.
- Cannard G.** Falling Trend. *Nursing Times* January 10 1996: 92(2): 36 – 37.
- Thorbahn L, Newton R.** Use of the Berg Balance Test to Predict Falls in Elderly Persons. *Physical Therapy* June 1996: 76(6): 576 – 585.
- Topper A, Maki B, Holliday P.** Are Activity Based Assessments of Balance and Gait in the Elderly Predictive of Risk of Falling and for Type of Fall? *JAGS* 1993: 41: 479 – 487.
- Whelan M, Shedd P.** State of the Science Prediction and Prevention of Patient Falls. *IMAGE: Journal of Nursing Scholarship* Summer 1989: 21(2): 108 – 114.
- Thorbahn L, Newton R.** Use of the Berg Balance Test to Predict Falls in Elderly Persons. *Physical Therapy* June 1996: 76(6) 576 – 582.
- Mion L, Gregor S, Buettner M, Clowirchale D, Lee O, Paras W.** Falls in the Rehabilitation Setting: Incidence and Characteristics. *Rehabilitation Nursing* January – February 1989: 14(1): 17 – 21.
- Gabell A, Simons M, Nayak U.** Falls in the Healthy Elderly: Predisposing Causes. *Ergonomics* 1985: 29: 965 – 975.
- Gaebler S.** Predicting Which Patient Will Fall Again ...and Again. *Journal of Advanced Nursing* 1993: 18: 1895 – 1902.
- Hill KD, Dwyer JM, Schwarz JA, Helme RD.** A Falls and Balance Clinic for the Elderly. *Physiotherapy Canada* Winter 1994: (1): 20 – 27.
- Tinetti Me, Speechley M.** Prevention of Falls Among the Elderly. *The New England Journal of Medicine* April 1989;320(16): 1055 – 1059.
- Hendrich AL.** An Effective Unit-Based Fall Prevention Plan. *Journal of Nursing Quality Assurance* 1988: 3(1): 28 – 36.
- Kilpack V, Boehm J, Smith N, Mudge B.** Using Research- Based Interventions to Decrease Patient Falls. *Applied Nursing Research* May 1991: 4(2): 50 – 56.
- Diaz S.** Falls During Stroke Rehabilitation: A Review of the Literature. *Top Stroke Rehabil* 1995: 2(1): 82 – 90.
- Lamb K, Miller J, Hernandez M.** Falls in the Elderly: Causes and Prevention. *Orthopaedic Nursing* 1987. 6(2) 45 – 49.
- Barbieri EB.** Patient Falls Are Not Patient Accidents. *Journal of Gerontological Nursing* 1983: 165 – 173.
- Tinetti ME, Baker DI, Garrett PA, Gottschalk M, Koch ML, Horwitz RI.** Yale Ficsit: Risk Factor Abatement Strategy for Fall Prevention. *JAGS* March 1993;41(3): 315 – 320.
- Tideiksaar R.** Geriatric Falls: Assessing the Cause, Preventing Recurrence. *Geriatrics* July 1989;44(7): 57 – 64.
- Lord SR, Clark RD, Webster IW.** Physiological Factors Associated with Falls in an Elderly Population. *JAGS* 1991;39:1194 – 1200.
- Berg K, Wood –Dauphinée S, Williams JI, Gayton D.** Measuring Balance in the Elderly: Preliminary Development of an Instrument. *Physiotherapy Canada* November/December 1989: 41(6): 304 –310.
- Morse JM, Tylko SJ, Dixon HA.** Characteristics of the Fall-Prone Patient. *The Gerontologist* 1987;516 –522.
- Salado R, Lord SR, Packer J, Ehrlich F.** Factors Associated with Falling in Elderly Hospital Patients. *Gerontology* 1994;40:325 – 331.
- Campbell AJ, Robertson MC, Gardner MM.** Elderly People Who Fall: Identifying and Managing the Causes. *British Journal of Hospital Medicine* 1995: 54(10): 520 – 523.

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Evaluating long bone fractures in the Emergency Department for Children under 5 years: Is child abuse being missed?

Glover N and O'Brien K 2006-2007

ABSTRACT

The Response, Assessment, Discharge (RAD) Team at Peninsula Health provides an interdisciplinary allied health assessment and discharge planning service to patients presenting to the Emergency Department (ED) at Frankston and Rosebud Hospitals. RAD identified a gap in the management of children presenting to ED with long bone fractures, with respect to the exploration and documentation of indicators of child abuse, and subsequent referrals.

To evaluate the assessment and documentation of ED medical, nursing and allied health staff's interventions with respect to children less than 5 years of age who present to ED with long bone fractures.

A literature review was completed, including articles relating to children presenting to ED with long bone fractures. New legislation surrounding the Children, Youth and Families Act 2005 was reviewed. A retrospective medical record (MR) audit was completed, identifying MRs of all children less than 5 years of age presenting to Frankston Hospital ED with long bone fractures over a twelve month period. A standardised data collection form was used.

Initial results indicate that in 94% of cases there was no documentation that child abuse was considered as cause of injury. 3% of cases were referred to Child Protection (CP) for further investigation and management. 11% of cases were seen by RAD. 26% of cases presented outside of RAD working hours.

In order to screen for and ensure the safety of children presenting to ED with long bone fractures, RAD Team involvement is essential to raise awareness, implement education programs for ED staff, and facilitate reports to CP. To evaluate the impact of this quality improvement activity, a study will be completed 6 months post implementation of the education programs.

Research conducted between 2006 – 2007 at Frankston Hospital Emergency Department.

Address correspondence to: Ms Narelle Watson, Physiotherapy Service Research Committee Chairperson, Frankston Hospital Phone: 9784 7660.

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Testing the reliability of measuring muscle strength with a hand held dynamometer following a brief training protocol.

Hough P, Hunt A, Nguyen Q, and de Morton N 2007

ABSTRACT

Muscular strength in older age is an important indicator of the physical ability of older adults. (Fiatarone et al.,1990) Accurate measurement tools are required to guide treatment progression and optimize patient outcomes.

To establish the inter and intra-rater reliability of the Nicholas Manual Muscle Tester MMT with new graduate therapists following only a brief standardized training regime. A testing protocol was adapted from the literature (Dunn, J. and Iversen, M. 2003). Two new graduate physiotherapists underwent brief (1 hour) training before performing independent assessments on the Biceps Brachii and Quadriceps of twenty Mount Eliza Centre inpatients. Patients screened for entry were of ages ranging from 78 – 92 years. An independent assessor recorded all scores. Patients were tested twice by both testers within 48 hours to reduce the likelihood of actual strength change between tests. Pearson Correlation Co-efficient was calculated for intra-rater measures of both assessors and inter-rater calculations were performed for both initial and follow up tests. Minimal Detectable Change (MDC) was also calculated.

Inter-rater reliability estimates for quadriceps were high ($r = 0.93-0.96$) as were intra-rater estimates ($r = 0.93 - 0.94$). Biceps inter-rater reliability measures were slightly lower ($r = 0.79-0.86$) as were intra-rater measures ($r = 0.76-0.94$). The MDC with 90% confidence was identified to be approximately 2kg for the Nicholas MMT dynamometer suggesting high clinical utility. Estimates of error were similar across measurements obtained from the Biceps and Quadriceps. The results of this research suggest that measurements obtained using the Nicholas MMT dynamometer are both reliable and relevant for clinical practice with new graduate therapists having received only minimal training applied to an aged inpatient population.

Research conducted between January 2006 – September 2007 at The Mount Eliza Aged Care Physiotherapy Service.

Address correspondence to: Mr Peter J. Hough, Physiotherapy Service, The Mornington Centre, Cnr Tyalla and Separation St, Mornington 3931. Phone: 59769025

Dunn J.C, Iversen M.D. Interrater reliability of knee muscle forces obtained by hand held dynamometer from elderly subjects with degenerative back pain. *Journal of Geriatric Physical Therapy.* 2003; 26(3): 23-29

Fiatarone M, Marks E, Ryan N, Meredith C, Lipsitz, Evans W. High intensity strength training in nonagenarians – Effects on skeletal muscle. *JAMA.* 1990; 263

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Hip protector compliance following a trial before prescription in subacute, elderly inpatients.

Hough P and Hunt A 2008

ABSTRACT

Hip protectors are used widely in the prevention of hip fractures amongst older people. A systematic review by Parker et al (2008) revealed a modest effect of hip fracture reduction for residents of nursing homes and residential care though a failure to reduce the incidence in older community dwelling elderly. Compliance issues especially in the community dwelling elderly may account in part for the latter result. Van Schoor (2002) reported compliance levels between 20-90% at follow up review between 3 – 12 months. This correlates with an earlier study at The Mount Eliza Centre (2003) in which 4-6 month compliance was 82% amongst those in residential care and 55% amongst the community dwelling. To improve long term compliance with hip protector use post discharge from The Mornington Centre, a 48 hour hip protector trial program was introduced prior to ongoing prescription. Follow up telephone review at 4 – 6 months post discharge compared with the earlier data revealed improved compliance with ongoing use at 88% for individuals in residential care and 88% for the community dwelling. The authors concluded that a trial period of hip protector use offers a clinically worthwhile effect upon ongoing compliance and should be considered as a key strategy in the assessment of community-dwelling, elderly fallers. Recommendation is made for further research into factors promoting compliance tied to future evaluations of their capacity to reduce the incidence of hip fractures.

Research conducted between January 2007 – September 2008 at The Mount Eliza and then Mornington Centre Physiotherapy Service.

Address correspondence to: Mr Peter J. Hough, Physiotherapy Service, The Mornington Centre, Cnr Tyalla and Separation St, Mornington 3931. Phone: 59769025

Herbert R.D., 2000. How to estimate treatment effects from reports of clinical trials. I: Continuous outcomes. *Australian Journal of Physiotherapy*, Vol 46.

Parker M.J., Gillespie L.D., 2005. Hip protectors for preventing hip fractures in older people. *Cochrane Database of Systematic Reviews*, Issue 3. Art. No.:CD001255. DOI:10.1002/14651858.CD001255.pub3.

Van Schoor N.M., Smit J.H., Twisk J.W., Bouter L.M., & Lips P. 2003. Prevention of hip fractures by external hip protectors: a randomised controlled trial. *JAMA*. 289(15):1957-1962

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Agestrong outcome measures pilot project report.

Hale N, McGill S and Stapleton C 2008

ABSTRACT

Agestrong, a strength and balance program for older people is anecdotally reported to improve the physical function, strength, community participation and psychosocial wellbeing of participants. Benchmarking established that no validated outcome measures were in use state-wide. Development of an appropriate outcome measure suite was planned to investigate the effectiveness of Agestrong, inform key stakeholders and executive management of the efficacy of the program, guide future service delivery, and provide additional motivation to participants.

To measure the effectiveness of Agestrong on the mobility and quality of life of participants, investigate the properties of selected instruments, and guide future implementation of the outcome measure suite within the program.

A working party convened including key stakeholders. Clinical experts were consulted. A suite of outcome measures was developed including the Timed Up and Go (TUG), Activities-specific Balance Confidence Scale (ABC), Step Test and gait aid use. Staff training was provided with subsequent rollout of the tool. Measures were administered at 0 and 8 weeks, and data analysis was conducted using SPSS. Results and recommendations have informed modification of the outcome measure suite and its ongoing use.

One hundred and sixteen complete sets of pre and post measures were collected from 8 community Agestrong sites. Eight week retest results showed significant improvements on TUG ($p < .05$) and Step Test scores (left 23.3%, right 23.9%; $p < .05$). Outdoor gait aid use was reduced from 31% to 23%. Most participants (83%) reported they felt more a part of the community after participating in Agestrong.

Results demonstrate an overall improvement in physical functioning, outdoor gait aid use, and community connectedness following participation in Agestrong over an eight week period. Properties of instruments within the Outcome Measures have been investigated and recommendations have been made for their ongoing use.

Research conducted between 2007 – 2008 at the Peninsula Health Community Rehabilitation Centres Physiotherapy Departments.

Address correspondence to: Scott McGill, Physiotherapy, Frankston Community Rehabilitation Service Phone: 97831288

- Hill, K. D., Bernhardt, J., McGann, A.M., Maltese, D., & Berkovits, D.** (1996). A new test of dynamic standing balance for stroke patients: reliability, validity, and comparison with healthy elderly. *Physiother Canada*, Fall 48(4): 257-62
- AHMAC** (September, 2004). *A guide for assessing older people in hospitals*. Melbourne: Metropolitan Health and Aged Care Services Division, Victorian Government Department of Human Services on behalf of AHMAC.
- Hill, K.** (2005) Activities-specific and Balance Confidence (ABC) Scale. *Australian Journal of Physiotherapy*, 51:197
- van Iersel, M. B., Munneke, M., Esselink, R. A., Benraad, C. E. & Olde Rikkert, M. G.** (2008) Gait velocity and the Timed-Up-and-Go test were sensitive to changes in mobility in frail elderly patients. *Journal of Clinical Epidemiology*. 61(2):186-91
- Langhammer, B., & Lundmark, B.** (2007). Performance-Related Values for Gait Velocity, Timed Up-and-Go and Functional Reach in Healthy Older People and Institutionalized Geriatric Patients. *Physical and Occupational Therapy in Geriatrics*. 25(3):55-69
- Townsend, K. C. & McWhirter, B. T.** (2005) Connectedness: A Review of the Literature with Implications for Counseling, Assessment, and Research. *Journal of Counseling & Development*, 83:191-201

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Circuit Training for Neurological Patients

Kent K, McKenzie D and Sounthakith V 2008

ABSTRACT

In 2007, a trial 4-week program of circuit-based exercises targeting stroke patients showed significant functional gains. Research suggests that these functional gains may also be achieved by this type of program for those managing other neurological conditions. In 2008, the program was reviewed and a new intake of neurological patients completed the program. The aim was to increase participants walking speed, walking endurance, ability to stand up from a chair and performance on the step test.

The protocols used for the 2007 trial were reviewed. Inclusion criteria were broadened to include ambulant patients with Multiple Sclerosis and patients recovering from Stroke. Participants attended 1 hour exercise sessions up to 3 times week for a 4 week period. Exercises included treadmill walking, stair climbing, exercise bike riding, sit to stand, leg press and other leg strengthening exercises. Measures for walking speed, walking endurance, balance and timed performance of sit to stand were taken at commencement and completion of the program.

Fourteen sets of measurements were collated. Walking speed improved an average of 5.96 seconds over 10 metres, walking distance improved an average of 32.43metres over 6 minutes, ability to stand up from a chair 3 times improved an average of 2.24seconds, and performance of the step test improved on average by 1.66steps.

Participation in a 4 week circuit program demonstrated significant functional gains in walking speed, walking endurance and ability to stand up from a chair.

Research conducted between 2007 – 2008 at Physiotherapy, Frankston CRP.

Address correspondence to: Mr Vathana Sounthakith, Physiotherapy Department, Rosebud Rehabilitation Unit, 288 Eastbourne Rd Rosebud 3939. Phone: 59812166.

Dean C.M, Richards C.L, Malouin F. Task Related Motor Training Improves Motor Performance of Locomotor Tasks in Chronic Stroke: A Randomized,Controlled Pilot Trial. Arch Phys Med Rehabil . April 2000; Vol 81: 409-417

Blennerhassett J. & Dite W. Additional task-related practice improves mobility and upper limb function early after stroke: A randomised controlled trial . Australian journal of Physiotherapy. 2004; Vol 50: 219-224

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Projects in progress

- **Pedometer Accuracy Project:** (Hough 2008-) A test of the potential to establish accurate recording of aged patients with gait disturbances and gait aid use with a simple pedometer placed at the knee to overcome the inaccuracies noted for hip placement. [\[contact Peter Hough at physiotherapyresearch@phcn.vic.gov.au\]](mailto:physiotherapyresearch@phcn.vic.gov.au)
- **Physiotherapy Education Research:** (Kent 2008-)The primary aim is to ascertain patient perceptions of their involvement in physiotherapy clinical education. A secondary aim is to ascertain what effect the clinical education session has on the consultation. [\[contact Fiona Kent at physiotherapyresearch@phcn.vic.gov.au\]](mailto:physiotherapyresearch@phcn.vic.gov.au)
- **Get Fit For Surgery – Prehab for patients awaiting Total Hip and Total Knee Replacement Surgery:** (Cotton and Harrowfield 2009-) An investigation of the contribution of exercise with and without weight loss to patients' condition while awaiting hip or knee joint replacement surgery. [\[contact Alison Cotton and Sally Harrowfield at physiotherapyresearch@phcn.vic.gov.au\]](mailto:physiotherapyresearch@phcn.vic.gov.au)

Posters

- **Dynamometer Reliability Study:** (Hough, Hunt, Nguyen and de Morton, 2007) A test of the inter and intra-rater reliability of the hand held dynamometer to measure biceps brachii and quadriceps femoris muscle strength. [\[click to view poster\]](#)
- **Circuit Training for Stroke Patients:** (Kent and McKenzie, 2007) Improving walking speed, endurance and self perceived independence of stroke survivors. [\[click to view poster\]](#)
- **Orthopaedic Elective Surgery Waiting List Initiative:** (MacCombie 2007) Provision of physiotherapy treatment and assessment as an initiative to manage patients on the orthopaedic elective surgery waiting list. [\[click to view poster\]](#)
- **Screening Stroke Patients for a Very Early Rehabilitation Trial (AVERT):** (Davis, 2007) Participation in a randomised controlled trial to investigate the efficacy and cost effectiveness of very early mobilisation of stroke patients. [\[click to view poster\]](#)
- **Evaluating Long Bone Fractures in Emergency Department for Children under 5 years: Meeting the Challenge of Child Protection.** (Glover and O'Brien, 2007) An evaluation of the assessment and documentation of ED medical, nursing and allied health staff's interventions with respect to children less than 5 years of age who present to ED with long bone fractures. [\[click to view poster\]](#)
- **Hip Protector Compliance following a trial before prescription in subacute, elderly inpatients:** (Hough and Hunt, 2008) An investigation into the potential to improve follow up compliance with use of hip protectors 6 months post discharge from a GEM facility through use of an initial trial period prior to prescription. [\[click to view poster\]](#)
- **Outcome Measures:** (McGill and , 2008) Development and implementation of a suite of outcome measures that will be used in both the inpatient and outpatient settings to evaluate the Agestrong Program. [\[click to view poster\]](#)