

Mercer's Institute

for

Research on Ageing



Annual Report 2010

Index	Section Pages
MIRA Personnel	1 - 3
Director’s Report & Executive Summary	4 - 8
The Memory Clinic	9 - 14
Falls, Blackout, Bone Protection and Osteoporosis Services	14 - 24
Stroke, Research and Clinical Services	25 - 26
Medical Physics and Bio- Engineering	26 - 27
TILDA – The Irish LongituDinal Study on Ageing	28 - 29
TRIL – Technology Research for Independent Living	30 - 32
TUDA - The Trinity, University of Ulster and Department of Agriculture Study	33 - 34
Publications	35 - 45
Partnership	46

MIRA Personnel

Steering Committee Members

Prof. Davis Coakley (Chairman)
Prof. J. Bernard Walsh (Director)
Prof. Rose Anne Kenny
Prof. Brian Lawlor
Prof. Jim Malone
Dr. Conal Cunningham
Mr. Desmond Dempsey
Dr. Miriam Casey
Dr. Joseph Harbison
Dr. Elaine Green
Ms Carol Murphy (Administrator)

Watt’s Clinical Research Fellow

Dr. Kevin McCarroll

Memory Clinic Research Fellows

Dr. Aíne Ní Mhaolain
Dr. Eileen Sweeney

Lecturer

Dr. Clodagh O’Dwyer

Falls and Osteoporosis Unit

Dr. Joseph Brown

Clinical Neuropsychologists

Dr. Robert Coen
Dr. Marie McCarthy

Clinical Nurse Manager

Ms. Irene Bruce

Senior Social Worker

Mr. Matthew Gibb

Biostatistician

Dr. Cathal D. Walsh

IT Consultant and Technology Adviser

Mr. Vincent Quinn

Falls and Osteoporosis Clinical Nurse Specialists

Ms. Niamh Maher	Ms. Kara Fitzgerald
Ms. Nessa Fallon	Ms. Georgina Steen
Ms. Kara Fitzgerald	Ms. Dympna Hade
Ms. Lisa Byrne/Ms. Olivia Mahon	Ms. Ciara Rice

Senior Radiographer

Ms. Eilish McDermott	Ms. Sophie Toth
----------------------	-----------------

Medical Physics and Bio-Engineering

Dr. Gerard Boyle	Mr. Ciarán Finucane	Ms. Emer Kenny
------------------	---------------------	----------------

The Trinity, University of Ulster and Department of Agriculture Study (TUDA)
Project Team:

Dr. Conal Cunningham, Principle Investigator
Ms. Helen Toohey, Research nurse
Ms. Sinead McNiffe, Research Nurse

Enhancing Care in Alzheimer’s Disease Study (The ECAD Study)
Dr. Kevin McCarroll

Adjunctive Protein Supplementation in Osteoporotic Patients Treated with Recombinant Parathyroid Hormone
Dr. Miriam Casey, Principle Investigator
Dr. Guan Choon Chan, Clinical Research Fellow
Ms. Caoimhe McDonald, Clinical Nutritionist

Secretaries

Ms. Deirdre Cummins	Ms. Martha Gavin
Ms. Rachael Farley	Ms. Nicola Doherty
Ms. Lisa Masterson	

Past Personnel

(Whose published work was carried out while working in the Mercer’s Institute for Research on Ageing details of which appear in this year’s annual report or in recent reports produced by the Mercer’s Institute)

Research Registrars

Dr. C. Connolly
Dr. A. Denihan
Dr. R. Doyle
Dr. A. Eustace
Dr. C. Fallon
Dr. R. Mulcahy
Dr. M. Kirby
Dr. H. Lee
Dr. A. Lynch
Dr. C. Maguire
Dr. M. Moran
Dr. D. Gallagher
Dr. R. Romero
Dr. L. Cogan
Dr. S. Ni Bhrian
Dr. H. O’Connell
Dr. D. O’Mahony
Dr. G. Swanwick
Dr. D. Hennelly
Dr. T. Coughlan
Dr. S. Kennelly
Dr. D Robinson
Dr. C. O’Luanaigh
Dr. N. Collins
Dr. S. Squires

Medical Physics & Bio Engineering
Mr. M. Al-Kalbani

Research Psychologists

Dr. A. Blanco
Ms. B. Cullen
Mr. N. Kidd
Ms. S. O’ Doherty
Ms. E. Palombella
Ms. L. Carolan
Mr. I. Evans
Ms. F. Hamilton
Ms. E. Tehee
Ms. S. Callinan
Ms. D. Finnegan

Medical Social Worker
Ms. M. Headon

PhD Student
Ms. M. O’Reilly

Physiotherapist
Ms. M. O’Sullivan

Social Scientist
Ms. C. Somerville

Research Assistants
Ms. V. Buckley
Ms. B. O’Dea
Mr. C. Wynne

Director’s Report and Executive Summary

2010 was a very eventful year for the Mercer’s Institute for Research on Ageing. The Department of Health and Atlantic Philanthropies both confirmed their commitment to building our new Centre of Excellence for Successful Ageing.

Ms. Mary Harney, Minister for Health & Children made the official announcement of the development of the New Centre at a ceremony in the Hospital Board Room on May 17th 2010.



L-R Prof. JB Walsh, Mr. N. Mulvihill, Prof D. Coakley, Minister M. Harney, Mr. G. Heather, Mr. R. Ensor, Prof. RA Kenny, Dr. G. FitzGerald.

wards, the outpatient department and ambulatory clinics of the Department of Medicine for the Elderly. It will also incorporate the Mercer’s Institute for Research on Ageing and the Dementia Services Information and Development Centre.

The project team is currently meeting regularly and hope to appoint the design team shortly.

2010 saw the development and launch of a new web site for the Mercer’s Institute for Successful Ageing [MISA]. The site will encompass the clinical, research, training and creative strands of the Institute’s remit. (www.misa.ie)



The new proposed centre has been renamed The Mercer’s Institute for Successful Ageing.

We will also be using an adapted crest of Mercer’s Hospital similar to that of Mercer’s Institute as this maintains the Good Samaritan logo and motto.



When the New Centre is completed it will contain the current inpatient



L-R Prof. JB Walsh, Ms. C. Murphy, Mr. I. Carter, Prof. RA Kenny, Dr. G. FitzGerald, Minister M. Harney, Mr. C. McCrea, Prof. D. Coakley



During the year Professor Davis Coakley took early retirement from his hospital consultant post but he is continuing in his Trinity College position and remains Chairman of the Steering Group of the Mercer’s Institute for Research on Ageing. He will also continue to play a very active role on the project team of the New Mercer’s Institute for Successful Ageing.

A Festschrift was held on September 17th 2010 to pay tribute to the phenomenal contribution Professor Coakley has made to patients, to staff and to the hospital over the period of his tenure at St. James’s Hospital. There was special emphasis on his outstanding commitment to the establishment and evolution of the Mercers Institute for Research on Ageing and to the development of the Centre of Excellence for Successful Ageing at St. James’s Hospital.



*Professor Davis Coakley and
Mr. Merlin Holland
(Grandson of Oscar Wilde)*



*Professor Davis Coakley and
Professor J. Bernard Walsh*



*L-R Stephern Coakley, James Coakley, Professor Davis Coakley,
Mrs. Mary Coakley and John Davis Coakley*

The event had a duel format with a morning that highlighted Professor Coakley’s many achievements and interests with presentations on his contribution to The Development of Geriatric Medicine in Ireland, to Fostering Diversity in Academic Life and Practice and to Davis Coakley - the Medical Historian and leading authority on Oscar Wilde. Professor Brendan Kennelly wound up the morning with the closing address. The afternoon had a social focus that included colleagues, family and friends.

All the Units within the Mercer's Institute and allied to it have increased their activity in 2010.

Bone Health & Osteoporosis Treatment Unit - The activity of our Bone Health and Osteoporosis clinic increased by over 20% in the last year. We were also involved in local, national and European studies on bone health and osteoporosis. All hip, Colles and peripheral fractures are followed up in our clinics. The last few years have seen the continued development of new therapies for the treatment of osteoporosis and patients attending our unit have been able to benefit from these developments. The current research activities are described in the report and the publications are listed in the final chapter.

In 2010 we have had a number of major publications from the European EFOS Study which looked at the use of PTH in patients with severe osteoporosis. St. James's Hospital was a very active participant in this study.

Dr. Joe Browne is looking at bone quality in hip fractures and has been very involved in studies on Vitamin D supplementation, PTH treatment and Strontium therapy. He presented his findings at International Meetings in the UK, Europe and the United States in 2010.

Our **Medical Physics and Bioengineering Unit** is at the centre of our technology related research in the MIRA. It has a major focus on the study of gait imbalance, syncope and falls and is a major support of the work of the Technology Research for Independent Living [TRIL] programme. It has also continued its work on ocular microtremor.

Ciaran Finnucane who has just completed his PhD has also been the main bioengineer in the TILDA research programme into the cause of syncope and falls and orthostatic hypotension in patients presenting to the TILDA clinics.

Stroke Service & Research Unit - Dr. Joe Harbison has been appointed the National Lead on Stroke services. The Mercer's Institute has also benefited from the establishment of a technology campus company in Trinity College where a stroke application for the Apple iPhone was created and is being distributed on the App Store. Fifty percent of the income from the stroke app is being donated to the Mercers Institute for the care of stroke patients.

The stroke service cared for 275 in-patients in 2010 in addition to 1200 outpatients who presented with early stroke symptoms. The stroke service has seen continuing developments in its clinical and research activity. A major HRB funded project investigating the relationship between infarction in the border zone regions of the brain and neuro cardiovascular instability got underway. Dr. Joe Harbison is working closely with Professor Jim Meaney and is availing of the 3 Tesla MRI scanner in the Centre for Advance Medical Imaging Unit in St. James's Hospital to further evaluate any brain injury that these patients may be experiencing. A list of publications and presentations from our Stroke Service is at the end of the report.

The Falls and Blackout Unit (FABU). All patients who attend St. James's Hospital with unexplained blackouts are seen in the Falls and Blackout Unit. The Unit also provides an ambulatory 24hr blood pressure and ECG monitoring service.

The Falls & Blackout Unit has seen the number of patients increase from 1259 in 2006 to almost 3000 last year. In addition its monitoring service reviewed over 600 patients. The Falls and Blackout Unit runs a one stop assessment clinic where all tests are carried out on the day and a diagnosis often made with only one visit being required. FABU has a very close working relationship with the Medical Physics and Bioengineering Unit and with the TRIL (Technology Research and Independent Living) clinics. Its publications are listed at the end of the report

The Memory Clinic has also been very active in 2010 with more patients being seen earlier in their illness. This increases the possibility of identifying treatable causes of a patient's cognitive deficit.

In the Memory Clinic ongoing work is being undertaken to look at best methods of family support in patients with dementia. We are also studying younger patients with early onset neurodegeneration and continuing our work on autobiographical memory. The Memory Clinic has a very active and collaborative role with the TUDA and TILDA studies which are discussed elsewhere in our report. The MSc in dementia studies in TCD was successfully launched in 2010 and the MIRA staff were closely involved in the curriculum development. They continue to be involved as teachers. The Enhancing Care in Alzheimer's Disease study (ECAD) completed recruitment in January 2010. This is a study of the economic, psychosocial and physical impact of Alzheimer's disease upon patients and care givers. A major five year study on translational research in neurocardiovascular influences on cognitive functioning is now into its final year with over 210 participants having been enrolled. A list of the Memory Clinic publications are listed at the back of the report.

TILDA (The Irish Longitudinal Study in Ageing) The Irish Longitudinal Study in Ageing is the most comprehensive study of its type ever conducted in Ireland. TILDA started collecting baseline data in October 2009 looking at all aspects of the life of people aged 50 and over living in Ireland. The Principle Investigator and Research Director of TILDA is Professor Rose Anne Kenny who has been the driving force behind the study from its beginning. By the end of 2010, 7,828 of the 8,000 respondents had been recruited, Centres are based both in Dublin and Cork. 3,958 full health assessments have also been completed. Funding for TILDA has been received directly from the Department of Health, Atlantic Philanthropies and from Irish Life Insurance. A TILDA report was published in 2010 detailing its study objectives as well as the study design. This document is available in PDF format on the TILDA website (www.tcd.ie/TILDA) A list of research publications and presentations appear at the end of this report.

TRIL (Technology Research for Independent Living) The TRIL Clinic has recruited over 600 older people. TRIL is a collaborative programme combining Intel personnel and researchers from other universities and hospitals. TRIL's mission is to discover and deliver technology solutions which will support independent living. The aim is to improve the quality of life of older citizens while reducing the burdens on carers and on the health care system. The TRIL clinic is based in MIRA on the Top Floor of Hospital 4.

There were 314 clinical and home assessments in 2010, and over 400 telephone interviews as part of the longitudinal follow up of the original 600 participants.

In 2010, TRIL moved over to paperless gathering of clinical data using rugged medical touch screen tapped computers. A list of publications and presentations is at the end of this report.

TUDA (Trinity University of Ulster and Department of Agriculture Study) TUDA is a large collaborative study involving the Mercer's Institute for Research on Ageing, Trinity College Departments of Gerontology, Old Age Psychiatry and Biochemistry. The University of Ulster and the Department of Agriculture. The aim is to create a national genotype/phenotype database of 6000 subjects on the island of Ireland (north and south) with certain age related diseases.

Three-quarters of 2000 subjects over the age of 60 are been recruited with a focus on cognitive impairment, cardiovascular and skeletal function. 4000 subjects, 2000 with cognitive impairment and 2000 with brittle bones are being recruited from patients attending the MIRA

and MedEL services in St. James's Hospital. To date over 1700 patients in St. James's Hospital have participated in the TUDA study. Once completed the database will represent a very important national resource for further investigation of these diseases and will be one of the largest of its type in Ireland. It will also provide a large bank of clinical data for further research at the Mercer's Institute for Research on Ageing.

The Mercer's Institute for Research on Ageing works very closely with other departments and units in St. James's Hospital and Trinity College Dublin. Our close working relationship with Trinity College and with many of the Departments within TCD has been at the centre of our core strengths and these links continue to develop. It also is increasing its collaborative work with research and clinical units in other Universities and Hospitals both nationally and internationally. The TILDA and TRIL studies and Bone for Life Group are examples of this close collaboration. MIRA continue to work very closely with primary care practitioners and community health services involved in the care of elderly patients.

We would particularly like to thank Atlantic Philanthropies, Mary Harney, the Department of Health and the Health Services Executive for their commitment to the development of the Mercer's Institute for Successful Ageing. The Board and Executive of St. James's Hospital continue to actively support all our clinical and research activities. We also value our links with the pharmaceutical industry who have supported many of the research activities within MIRA.

Last but not least the main supporters of the Mercer's Institute for Research on Ageing and our main source of flexible funding remains the Mercer's Hospital Foundation. We are deeply appreciative of its Chairman Mr Graham Heather, its Secretary Mr Richard Ensor and its Board Members who continue to support and encourage all our activities over the last 22 years. Their continuing support remains invaluable and central to our work. With the confirmation of the development of our new Mercer's Institute for Successful Ageing being confirmed in 2010 we look forward very much to 2011 which will see significant developments in the planning and design of the new Centre.

J. Bernard Walsh

A handwritten signature in dark ink, reading "J. Bernard Walsh". The signature is written in a cursive style, with the first letter of each word being capitalized and prominent.

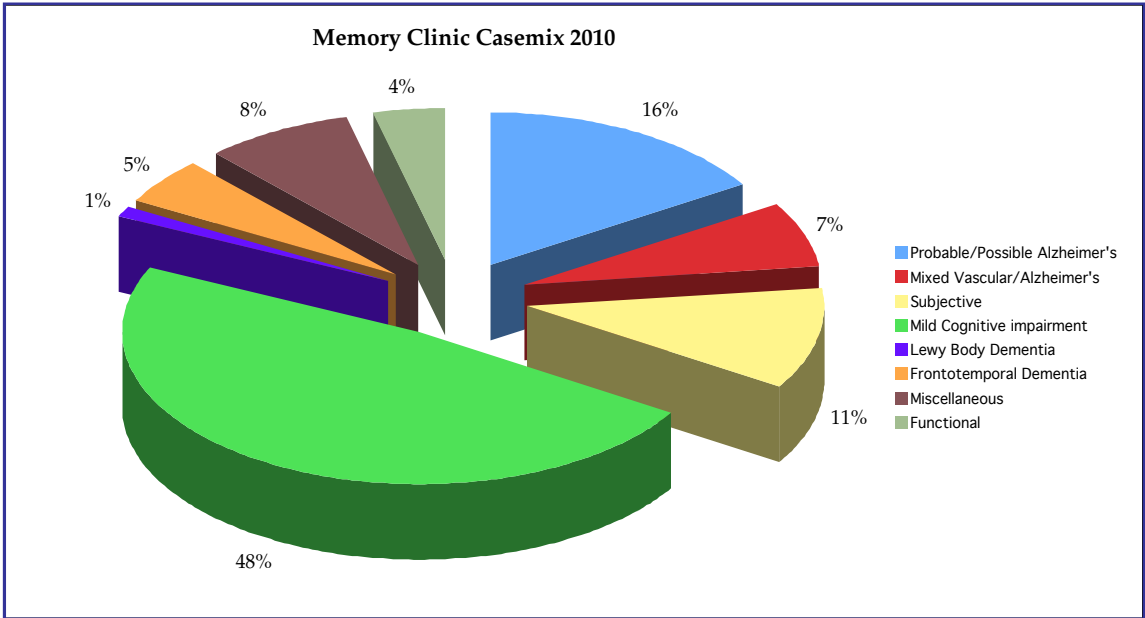
Director

Memory Clinic

Last year saw an increase in the number of patients seen in the memory clinic with approximately 430 attending in the last 12 months. Referrals are received both locally and nationally reflecting the multidisciplinary expertise that is built around our team which includes a clinical nurse specialist, clinical research registrars, senior neuropsychologists, a social worker and consultants in psychiatry of older age, gerontology and liaison with neurology. Over 200 new patients and 230 return patients were reviewed.

All patients initially underwent a comprehensive two to three hour assessment involving a structured interview and psychometric testing and were subsequently brought back for feedback when test results, diagnosis and management plan were discussed. Cases are discussed each week at consultant led consensus meetings with input from neurology on a regular basis. The vast majority of patients (48%) who attended were diagnosed as having mild cognitive impairment allowing for follow up and potential detection of early progression to dementia.

In collaboration with the Radiology Department at St. James's since November, the use of PET imaging of the brain in selected patients has greatly facilitated both the early detection and/or differentiation of specific dementia subtypes.



Pilot study of Anxiety Management for patients attending the Memory Clinic

The prevalence of anxiety disorders in older people varies with rates of up to 15% reported. Recent studies suggest that rates of anxiety may be higher in individuals with Mild Cognitive Impairment (MCI). Anxiety certainly has an impact on function in the cognitively impaired. In dementia, it decreases independence, limits activities of daily living, increases burden on caregivers and the likelihood of placement in long-term care facilities (Qazi et al, 2010). Additionally there is a growing body of literature implicating anxiety as a risk factor for progression from MCI to dementia (Palmer et al, 2007).

Cognitive Behavioural Therapy (CBT) has proven benefit in the treatment of Generalised Anxiety Disorder (GAD) in older adults both as monotherapy and adjunctive therapy (Wetherell et al 2010). Modifications to the structure of therapy are important to take into account the particular needs of older people, particularly those in whom cognitive impairment

is an issue. A group format for CBT may have added benefits for older adults and has been found to be effective in individuals with MCI (Kipling et al 1999).

The engagement of family members may be of significant benefit in the therapeutic process. The burden of illness as perceived by family members has been shown to predict older patients' response to pharmacological treatment in depression, independently of baseline levels of depressive symptoms (Martire et al, 2008). This is likely to be a factor in anxiety disorders underpinning the rationale for involving caregivers in the therapy process.

The availability and accessibility of CBT for older adults, particularly those with memory complaints, is extremely limited. This pilot study aims to investigate whether a memory clinic based intervention could help to address this significant unmet need.

Dr. Eileen Sweeney, Research Fellow in Psychiatry, together with Ms. Irene Bruce, Clinical Nurse Manager in the Memory Clinic, has designed a group-based psychotherapeutic intervention for generalised anxiety, aimed at Memory Clinic patients diagnosed with Mild Cognitive Impairment or Subjective Memory Complaints. This intervention is based on well-proven Cognitive Behavioural Therapy (CBT) techniques. It is in response to the longstanding unmet need seen by staff in the clinic of older people who are unable to access CBT in their local primary care or mental health services and whose anxiety symptoms are impacting on all aspects of function – social, occupational and cognitive. If the outcomes of the pilot and the anticipated follow-on study are favourable, the ultimate aim is to create a manualised group anxiety-management program, that health professionals in the memory clinic can facilitate on a regular basis. In order to upskill themselves to facilitate the groups, Dr. Sweeney and Ms. Bruce are currently students on the Foundation course in Cognitive Therapy at Trinity College, Dublin. As part of this training, Ms. Bruce is conducting a literature review of cognitive versus behavioural interventions in therapy and Dr. Sweeney is examining the patient's role in the therapeutic alliance.

The pilot protocol for this study has been submitted for consideration by the hospital's ethics committee, as has the protocol for a related cross-sectional investigation of the possible connections between generalised anxiety, cortisol levels and hippocampal function in amnesic Mild Cognitive impairment. As part of the groundwork for these studies, an extensive literature review of anxiety in Mild Cognitive Impairment is near completion and will be submitted for publication in the coming months. A comparative review of the psychiatric and the geriatric medicine literature, examining 'fear of falling' as a diagnostic entity in older people is also underway.

Young Onset Neurodegeneration Study

Dr. Thomas Monaghan, Specialist Registrar in Neurology has been recruiting suitable subjects who attend the memory clinic for participation in the Young Onset Neurodegeneration study since November 2010. This is being conducted under the direction of Prof. Orla Hardiman at Beaumont Hospital, Dr Colin Doherty and Prof. Brian Lawlor at St. James's and the Dublin Centre for Clinical Research (DCCR). It aims to explore the epidemiological factors in young onset neurodegeneration as well as its social and economic impact.

Activities and Developments in The Memory Clinic - January to December 2010

Primary duties relate to the Neuropsychological assessment of clients referred to the MIRA Memory Clinic and overseeing the assessments undertaken by Dr. Marie McCarthy, Nurse Irene Bruce and additional staff as appropriate. Duties also include Clinical supervision of Trainee Clinical Psychologists who undertake specialist placements in MIRA as part of their Clinical Training, teaching/training on programmes for Trainee Clinical Psychologists and

Medical Students, and research supervision / collaboration on a variety of studies and research programmes. Below is a summary of Clinical and research-related activities during 2010:

Suzanne Carroll, Psychologist in Clinical Training, TCD Doctoral Programme in Clinical Psychology successfully completed a Specialist Clinical placement with Dr. Coen from May 2010 until September 2010, 2 days per week.

Cognitive rehabilitation in Mild Cognitive Impairment (MCI)

Maria O'Sullivan, Trainee Clinical Psychologist, NUIG, completed a Specialist placement with Dr. Coen in 2009. Marie also undertook research on "Cognitive rehabilitation for people with mild cognitive impairment: Development and piloting of an individualized intervention" that ran through 2010 and was submitted for her Research Thesis. This research forms part of the D Clin Psych programme and focused on memory enhancement strategies. Maria achieved a distinction and presented the findings at the 40th Annual Conference of the Psychological Society of Ireland, Athlone, November 2010 for which she won the Society's Deirdre McMackin Memorial Medal.

Autobiographical Memory

Based on Muireann Irish's work (see previous MIRA reports) through which we developed a novel measure of Autobiographical Memory for which she was awarded a Ph.D from TCD 2008 we continue to write and submit papers for publication and to present findings at Scientific meetings. See publications.

Efficacy of a Cognitive Stimulation Programme for people with dementia.

This was a research study devised by and jointly supervised by Dr. Robert Coen and Dr. Jennifer Edgeworth (Senior Neuropsychologist, Beaumont Hospital) in collaboration with the Occupational Therapy Dept, St. James's Hospital (SJH) and Residential Care staff in Beaumont Hospital. The findings have been presented at scientific meetings, and a paper is close to acceptance for publication pending minor revisions. See publications.

The Trinity, University of Ulster and Dept of Agriculture (TUDA) Cohort Phenotype/Genotype database.

Dr. Robert Coen in collaboration with Dr. Kevin McCarroll and Philip Coey, an MSc Psychology student from University College Dublin, completed an analysis of the normative interpretation of data on the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS). The findings have been presented at two scientific meetings. See publications. The TUDA study is ongoing (see elsewhere in MIRA report).

The Memory Clinic and The Irish Longitudinal Study on Ageing (TILDA).

Having assisted with the development and implementation of the cognitive battery used in TILDA, Dr. Coen in collaboration with Dr. Paul Dockree, Psychology Dept, TCD and Grainne Sexton, MSc Psychology student UCD, is undertaking a normative analysis of the cognitive tests from the TILDA battery.

Study of Post stroke fatigue and PTSD

Dr. Coen, Dr. Joe Harbison, Stroke Consultant, and Claire Crowe, a Psychologist in Clinical Training, TCD Doctoral Programme, have been developing a research project to investigate possible links between post stroke fatigue and PTSD. A protocol has been developed for submission for Ethics approval.

Single Assessment Tool (SAT) Working Group

Dr. Coen is a member of the Single Assessment Tool (SAT) Working Group established by the HSE Older Persons Care Group Team and chaired by Prof. Brendan McCormack. The workgroup has been working on the development and implementation of a national standardised needs assessment instrument (the SAT) for use throughout Ireland.

Encouraging behaviour change in mild cognitive impairment patients: development of educational material.

Dr Coen and MIRA Staff are involved in a cross-border CARDI-funded research study in collaboration with Dr. Jayne Woodside, Nutrition and Metabolism Group, Centre for Public Health, QUB, Belfast, Prof. Peter Passmore, Ageing Research Group, Centre for Public Health, QUB, Belfast and colleagues. The aim of the study is to develop educational materials encouraging adaptive behaviour change in individuals with mild cognitive impairment, and to evaluate its utility.

MSc in Dementia, School of Nursing and Midwifery, TCD

MIRA staff were involved in the Curriculum development for the MSc in Dementia programme which was successfully launched this year in the School of Nursing and Midwifery, and have continued to be involved with teaching input.

Enhancing Care in Alzheimer's Disease Study (*The ECAD Study*)

The Enhancing Care in Alzheimer's Disease study (ECAD) is a study of community dwelling patients with AD and mild cognitive impairment (MCI) and their primary caregivers which completed recruitment in January 2010 (n = 115). It is a study of the economic, psychosocial and physical impact of Alzheimer's Disease (AD) upon patients and caregivers. It is hoped that an increased understanding of the financial, social, physical and psychological challenges faced by caregivers and dementia patients will facilitate more effective planning of interventional strategies to achieve improved outcomes for patients and caregivers alike. It should equally inform decision-making regarding the most effective deployment of existing healthcare resources in the Irish context.

Progress to Date: Baseline data from the ECAD study is currently under analysis and will provide valuable information regarding the stage specific costs of AD in Ireland today in addition to drivers of caregiver stress and burden and other markers of psychological health in caregivers. The ECAD database also includes markers of physical wellbeing and frailty from patients and caregivers which are being analysed to assess for effect of adverse health states in both patients and caregivers. Funding has been obtained to engage in a longitudinal wave of the ECAD study. Recruitment of previous participants for follow-up is currently underway and 10 longitudinal assessments will be complete by February 2011. This recruitment and longitudinal follow-up will continue through 2011. The longitudinal data will yield additional valuable information regarding the important predictors of costs, psychological and physical health over time for both dementia caregivers and care recipients.

Disclosure of Diagnosis Study:

Dr Damien Gallagher, Dr Aine Ni Mhaolain and Dr Kevin McCarroll are currently collaborating on a study regarding the attitudes and preferences of patients and caregivers to the disclosure of a diagnosis of Alzheimer's disease. This study follows on from research previously completed in the Memory clinic (Maguire et al. *BMJ* 1996) which highlighted the frequent dissonance between patients' and caregivers' desire for information in this context.

Progress to date:

Over 60 patients have been recruited to participate from the Memory Clinic and recruitment is ongoing. Preliminary analysis of the data collected is underway. We anticipate that findings from this study will inform standards of clinical care in the Memory clinic.

Dublin Healthy Ageing Study:

As part of the Dublin Healthy Ageing Study the use of psychotropic medication in community dwelling elderly patients been evaluated. The principal aim of this study was to use the current gold standard in prescribing guidelines for the elderly to identify the prevalence of potentially inappropriate prescriptions of psychotropic medication in a cohort of older non-demented community dwelling people. Our findings have been presented in a national forum and have also now been published in a peer-reviewed international journal. Further work on this cohort of community dwelling elderly has involved investigating the biopsychosocial predictors of life satisfaction a measure of subjective well-being and quality of life. Our results from this investigation have also been presented at key international meetings.

Cognitive Studies Clinic

The Cognitive Studies Clinic (CSC) is a “rapid access” clinical memory service aiming to assess patients with undiagnosed memory difficulties within 8 weeks from time of referral.

The clinic is operated by Clinical Research Fellows and nurses involved in the study: Neurocardiovascular Influences on Cognitive Functioning: Patients referred to this clinic have a comprehensive clinical assessment, neuropsychological testing, and neuro-imaging as appropriate. Patients are discussed at the Consensus meeting every week, which is attended by professionals from the fields of psychiatry, medicine, nursing, social work and neuropsychology.

During 2010 the Cognitive Studies Clinic assessed 100 patients. In November 2010, Dr. Carla Perrotta MD MPH PhD, was appointed as the new Clinical Research Fellow. She is a Specialist in General Internal Medicine and holds a PhD in Epidemiology. For 2011 we have doubled the number of clinics. We have two nurses at Clinical Nurse Manager II grade administering the neuropsychological assessments (Ms Sheila Dillon and Ms Phil Keane Egan) and two SpR's performing the clinical examination and relevant studies (Dr. Thomas Monahan SpR Neurology and Dr. Carla Perrotta)

Translational Research in Neurocardiovascular Influences on Cognitive Functioning: Basics and Clinical Mechanisms

This is a five year longitudinal study of older persons with Mild Cognitive Impairment (MCI) examining the influences of Neurocardiovascular Instability (NCVI) on cognition at baseline and on progression/transition to dementia over 3 years follow up.

The study is now in its final year. 210 participants have been enrolled, of which 140 are cases and 70 are controls. Participants are assessed once a year with a comprehensive cognitive assessment battery and neurocardiovascular examinations. Recruitment for healthy controls has been completed and we are aiming to recruit at least 150 cases.

Preliminarily baseline results were presented at the American Autonomic Society Meeting in Florida last year by Dr. Orla Collins.

The Research Team

Lead Principal Investigator, Prof. R.A. Kenny, Professor of Geriatric Medicine
Principal Investigators, Prof BA Lawlor, Connolly Norman Professor of Old Age Psychiatry,
Prof M Rowan, Professor of in Pharmacology
Research Team: Dr. Carla Perrotta, Clinical Research Fellow; Sheila Dillon, Clinical Research Nurse; and Phil Keane Egan, Clinical Research Nurse.

Bone Health and Osteoporosis Unit

The Bone Health and Osteoporosis Unit continued to be very active in both the diagnosis and clinical management of patients with osteoporosis. Prof JB Walsh and Dr Miriam C Casey are the Principal Consultants within the Unit and are involved in the co-ordination of the research activities and running of the service.

Summary of Unit:

- Clinical Nurse Specialist-Led Preassessment Clinics
- Fracture Liaison Service
- Specialised Colles and Hip Fracture Clinics
- Parathyroid Hormone Treatment Patients
- Intravenous Zoledronic Acid Clinic
- Early Discharge Service for the Acute Medical Assessment Unit
- Bone Health Appraisal Clinics
- Inpatient Falls and Fracture Prevention Service
- DXA service
- Research Projects
- Clinical Nurse Specialist-Led Preassessment Clinics

CNS-led pre-assessment clinics (twice-weekly) continue to be the first point of contact for patients who are referred for assessment of their bone health and risk for fracture. Patients attend from 3 sources:
External referrals from their general practitioner or other hospitals,
General Medicine Clinics within St James Hospital including the MedEL Department, and Fracture Liaison Service.

A comprehensive assessment on all patients is performed which includes risk factors for osteoporosis, risk factors for falls and advice on diet, lifestyle modifications and education on treatment. On a patient’s first attendance at this clinic a full initial screen is undertaken. This includes a DXA scan, a bone ultrasound, a full biochemical and hematological workup including an estimation of serum bone markers.

In 2010, a total of 973 patients were seen in these clinics, which is an increase of 20.1% from the previous year. The breakdown of patients seen in the various Osteoporosis assessment clinics is as follows:

Table 1. Breakdown of Patients attending the Various Osteoporosis Clinics within the Bone Health and Osteoporosis Unit.

Clinic Type	2009	2010
Preassessment Clinic (Total)	510	710
New		278
Review		279
Colles Fracture	44	59
Hip Fracture	75	94
Bone Health Appraisal	116	103
IV Zoledronic Acid Clinic	125	160

Parathyroid Hormone Treatment Patients

342 patients have been commenced on or completed parathyroid hormone therapy. These patients have established osteoporosis, which may have been refractory to other forms of treatment or have evidence of fragility fractures. For patients who have sustained a vertebral fracture, several international studies have shown a substantial improvement in bone quality but also an improvement in back pain after treatment with both forms of PTH therapies available.

Prof. J B Walsh has been involved in the analysis of a large International study, EFOS, which has shown a substantial improvement in back pain in patients treated with teriparatide. MIRA was an active participant in this study and the findings were presented at European and American International Meetings this year.

Intravenous Zoledronic Acid Clinic

Intravenous zoledronic acid is a very effective treatment in the prevention of vertebral and non-vertebral fractures in patients with osteoporosis. It has been shown to significantly reduce mortality in patients after hip fracture. It provides an alternative to oral bisphosphonates or patients who are deemed not suitable for PTH therapy.

Over the previous 4 years, 180 patients have been treated in the Robert Mayne Day Hospital with intravenous zoledronic acid. There is an increase in the number of patients receiving IV zoledronic acid with 160 attending on a yearly basis for assessment and treatment. It may be given 6 monthly and yearly and as a result the osteoporosis unit has developed an IV zoledronic acid clinic. Patients are assessed prior to administration of the drug and follow up for post infusion monitoring.

Since July 2009, a new protocol was successfully implemented to monitor Serum Calcium and Vitamin D levels within one week following infusion to observe for any hypocalcaemia. This has reduced the incidence of complications from the infusion and seen an improvement in patients symptoms post treatment.

Fracture Liaison Service

The Fracture Liaison service, which incorporates orthopaedic ward rounds, has been present within St James Hospital for over 8 years. Patients who have sustained a fracture and admitted under our orthopaedic colleagues service are reviewed on the ward or can be followed up if discharged from the Emergency Department. The more common fractures seen include hip, Colles, vertebral, humeral and pelvic fractures.

The service has grown to incorporate all patients with fragility fractures (hip, wrist/Colle, vertebral, pubic, humerus and tibial fractures) over the age of 50 years attending the orthopaedic service within the hospital. These patients with fractures are offered a detailed screening for osteoporosis, including DXA scan, biochemical blood markers and follow-up in the bone health clinics.

Hip Fractures

Hip fractures are the most common fracture seen within the orthogeriatric clinics and ward rounds. Hip fractures are associated with increased morbidity and mortality and tend to occur in older patients. These patients require significant input from the multidisciplinary teams including nursing, physiotherapists, OT, social workers and medical staff. Hip fractures account for nearly 10% of all non vertebral fractures and for a much higher proportion of fractures in the elderly. This year we have seen a rise of the number of fractures referred to the service due to awareness of the issue of osteoporosis and inclement weather.

With the above issues, Ms Niamh Maher, Ms Sheila McCarthy and Dr Joe Browne are currently researching the area of fragility fractures in the elderly with particular emphasis in hip fractures, which will be detailed later.

Table 2. Number of Hip Fractures admitted to St James’s Hospital every year since the setting up of the service

Year	2005	2006	2007	2008	2009	2010
Hip Fractures	164	196	167	172	180	197

We have seen an increase in the number of falls with subsequent hip fractures in the past 12 months compared to previous years. This may be related to environmental issues but the increasing number of older people in the catchment area is another contributing factor.

Colles and Peripheral Fracture Follow-up Clinic

All older patients presenting with a peripheral fracture, particularly those who present with Colles fracture are offered a follow-up appointment at a Specialised Osteoporosis Clinic, which occurs every 2nd Thursday morning. This nurse-led clinic reviews risk factors for falls and osteoporosis. Patients are commenced on treatment as indicated by their assessments.

Inpatient Falls and Fracture Prevention Service

Inpatients at high risk of falls are targeted for fall and injury prevention once they are admitted under the care of the MedEL department. Each patient is screened for their falls risk on admission using a falls risk assessment tool (STRATIFY).

Summary of Inpatient Falls and Fracture Prevention in 2010.

Total of 375 post-fall assessments carried out: 172 new patients were assessed with 203 reviews on recurrent fallers.

37 (9.9%) Falls were in Connolly Norman Ward (PsychEL).

Injurious falls (MedEL & Connolly Norman) were 92 (24.5%)

Twice-yearly audits on falls risk assessment and hip protector compliance are conducted.

Fall Prevention Strategies are in use throughout MedEL

Fall alert signs are placed over bed (if patient has consented to this)

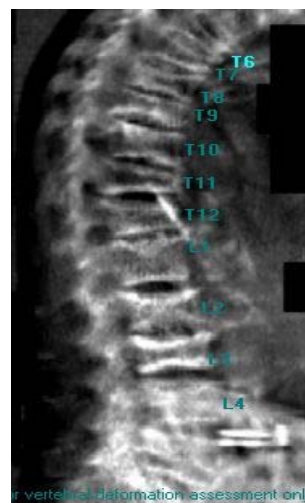
Fall (orange) wristband wearing by patients at risk of falls (if patient has consented to this).

Nurse fallers adjacent to nurses station

Chair/bed alarms for recurrent confused patients.

Fall & Injury Prevention in-service at ward level run by MedEL Clinical Nurse Specialists.

Notification by nursing/medical staff to MedEL Clinical Nurse Specialists regarding patients



who have been admitted with a fall or is at high risk for fall so that pre-fall assessment can be carried out.

Use of ‘specials’ for recurrent fallers prone to injury if indicated.

Use of STRATIFY (now incorporated into nursing documentation)

Use of fall diary on each faller.

DXA (Clinical Densitometry Service) Service

The DXA service has increased further the number of scans per year. 2398 patients were scanned in 2010, which is an increase of 10% from the previous year. This is in part due to a stream-lining of referrals and improvement in administration of appointments by our DXA secretary Ms Deirdre Cummins.

The service is available both to community GPs and hospital consultants. Patients identified as having significant osteoporosis are offered appointments for the Pre-assessment clinics and are assessed appropriately.

In addition to the DXA, patients also have their vertebrae assessed for fractures. The picture to the left demonstrates a Lateral Vertebral Scan of a patient with several vertebral fractures.

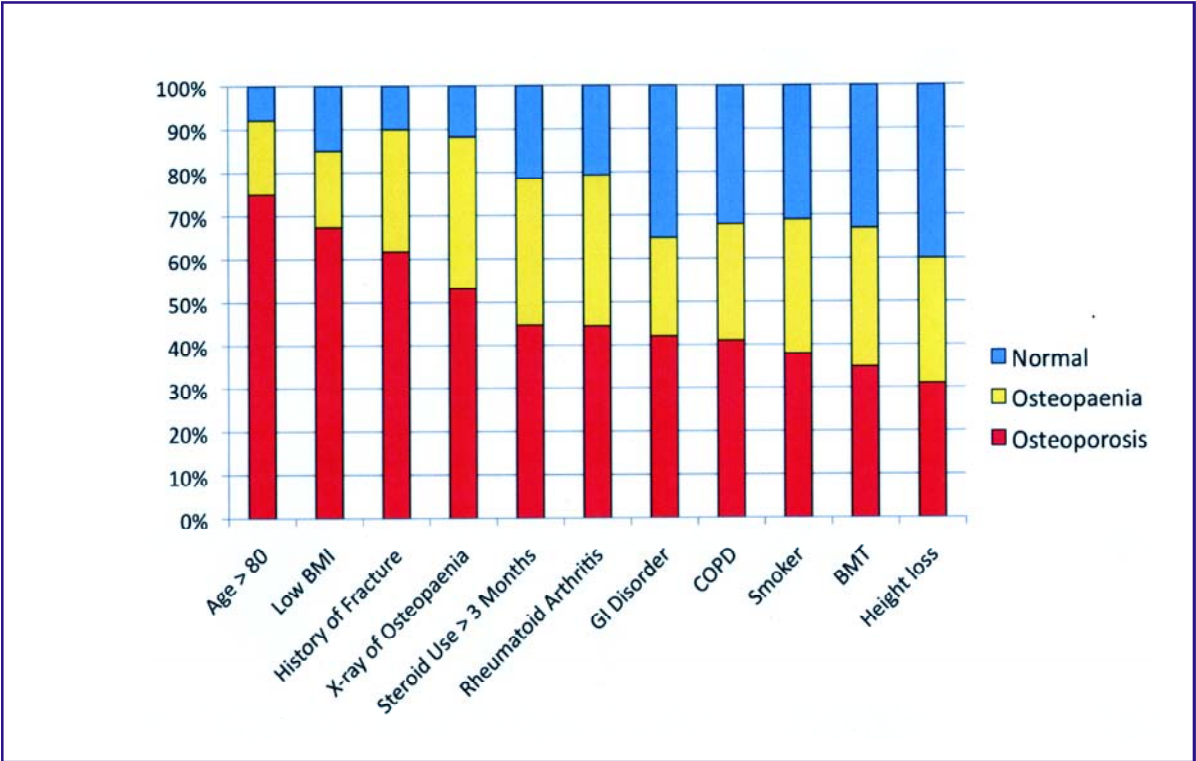
10,832 new patients have been assessed for osteoporosis since the DXA scanning service commenced in 2003. Patients are prioritised according to their risk factors, with those having significant risk factors for osteoporosis being prioritised for an early scan.

	2010	2009	2008	2007	2006	2005	2004	2003
Total New Patients Scanned	1636	1498	1436	1364	1448	1436	1277	688

One thousand six hundred and thirty six (1696) new patients had DXA scans in 2010, which was an increase of 9.2% increase from the previous year and the highest number of patients assessed in a given year by the DXA service.

Patients are prioritised based on their risk factors for osteoporosis with those having the highest risk being assessed as early as possible. The diagram below demonstrates the most significant risk factors for osteoporosis in patients attending the service.

Figure 2. This diagram demonstrates the breakdown of 3,691 patients referred for DXA by Reason for Referral. Age was the most predictive factor for osteoporosis, with 75% of 80 yr old patients having osteoporosis on DXA.



St. James’s Hospital Clinical Biochemistry Department

Our close links with consultant chemical pathologist Dr. Vivion Crowley and senior biochemist Dr. Martin Healy have been indispensable in enabling us to provide comprehensive biochemical studies and bone markers on patients attending the various clinics within the Bone Health and Osteoporosis Unit.

These bone markers provide us with critical information on the rate of new bone formation and the rate of bone turnover and bone loss in individual patients. We also gain essential information on patients’ individual Vitamin D status and bone turnover marker levels. With the help of this information we are able to make critical choices on the correct therapy for each individual patient where in the absence of this knowledge we would be making these clinical decisions purely on the basis of clinical information and bone imaging.

Dr. Martin Healy is a leading international expert in the area of bone biochemistry and Vitamin D. Dr Healy’s insight into newer markers and diagnostic techniques have added greatly to the treatment decisions in the osteoporosis clinic, particularly in the area of vitamin D deficiency. Various projects have been carried out with the department of biochemistry looking at TRAP and 25(OH)D levels. The department of Biochemistry acquired a new Mass Spectrometer, which allows for a more rapid measurement of Vitamin D and for a greater range of analysis of Vitamin D metabolites and active forms of the Vitamin D hormone.

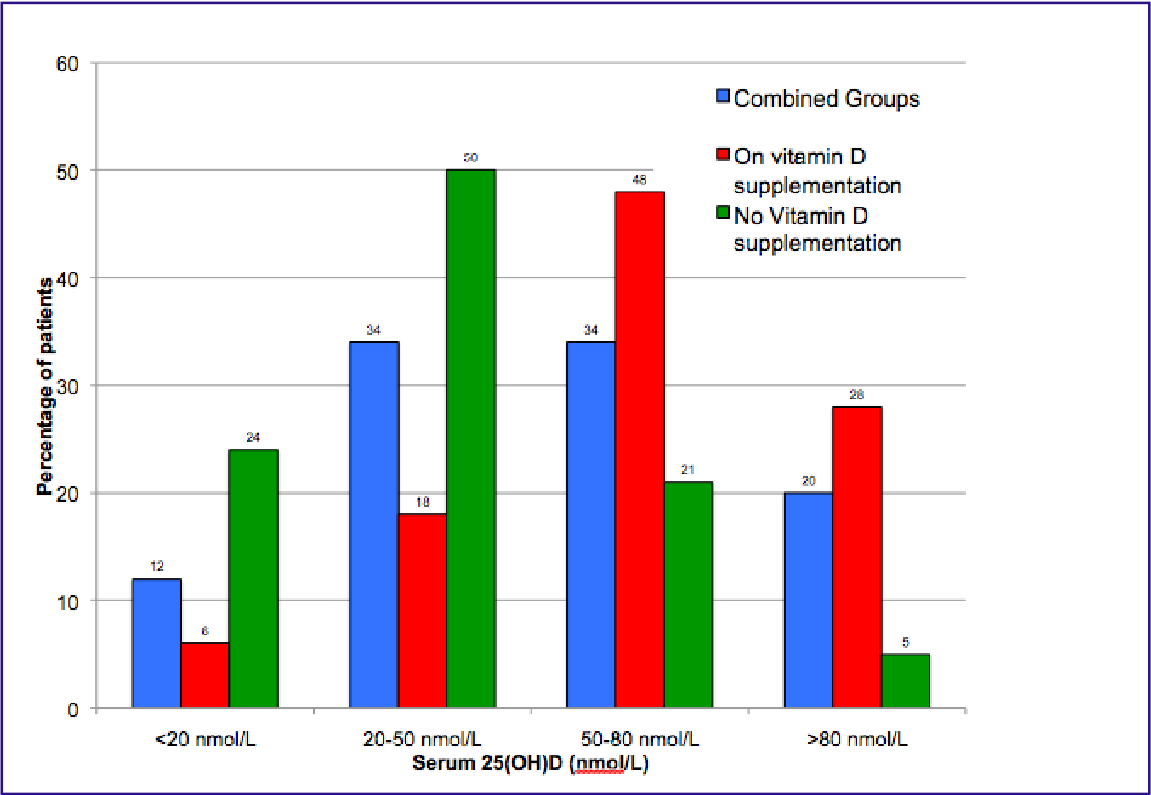


Figure 3. The above diagram shows recent data on the prevalence of vitamin D deficiency in 633 patients attending the osteoporosis clinic in St James’s Hospital. A Vitamin D level above 80nmol/L is now considered ideal. We can clearly see that most patients attending our Osteoporosis Clinics are vitamin D deficient, requiring supplementation and monitoring of their serum vitamin D levels. The above work would not be possible without Dr M Healy’s and Dr Crowley’s input and has been presented at the International Osteoporosis Foundation (IOF) meeting in Florence (May 2010).

Research Activities

“Bone for Life” Group

This is a collaborative research partnership between the Departments of Mechanical and Tissue Engineering in Trinity College, Dublin, the Department of Anatomy in the Royal College of Surgeons and Department of Veterinary Medicine in University College, Dublin. Members of the group include Professor Patrick Prendergast, Professor Clive Lee and Professor David Taylor, Prof. Fergal O’Brien and Dr. Jackie Daly. This work covers research in animal models of osteoporosis and links this knowledge with the study of therapeutic compounds, which are used in humans suffering from this disease.

Investigating Bone Quality in Hip Fracture and Osteoarthritis Patients using Novel Bioengineering Techniques

Principal Investigator:	Dr Joe Browne Ms Claudine Murphy Mr Tariq Mesalati
Supervising Investigators:	Prof David Taylor (Department of Mechanical and Tissue Engineering in Trinity College, Dublin Bioengineering, TCD) Prof JB Walsh Dr MC Casey

Hip fractures are often a consequence of reduced bone quality and increased propensity to falls. However, not all of these patients show evidence of osteoporosis on DXA. Previous studies within the Osteoporosis Service have shown that approximately 30% of patients do not have osteoporosis on subsequent DXA scanning after the fracture. The picture to the left demonstrates a microscopic picture of bone in a patient with osteoporosis.



The objective of the study is to investigate differences between patients with normal, osteopaenia and osteoporosis who have fractured their hips. It is becoming more evident that DXA does not identify all the risks for subsequent fracture. Bone samples from the femoral heads of hip fracture patients are being used to assess the quality of bone in these patients comparing them to the DXA results and will add to understanding of the biomechanics of bone structure and bone quality of these patients.

We are currently working in conjunction with the Royal College of Surgeons and Bioengineering Department in Trinity College Dublin. The use of microCT scanning and nanoindentation will explore the microarchitecture and mineralisation respectively.

Analysis of the bone will be performed in conjunction with the Department of Pathology and Dr Mary Toner where samples will be examined for evidence of underlying metabolic bone disease.

A further arm in the study is a collaboration project with Croom Orthopaedic Hospital, Limerick. Patients with hip fractures and those having elective Total Hip Replacements for Osteoarthritis have been consented for evaluation of their hip bone. To date, 23 patients have

consented to having the evaluation performed over a 3 month period.

Investigating the Effects of Vitamin D Deficiency on Balance and Muscle Strength

Principal Investigator: Dr Joe Browne,
Mr Ciaran Finucane

Supervising Investigator: Prof JB Walsh

Several recent studies in the department have shown a large proportion of patients attending the osteoporosis clinic or being admitted with fracture have vitamin D deficiency. Up to one third of patients have severe vitamin D deficiency and almost three-quarters have a level less than 50 nmol/L, the optimal level being 75nmol/L.

Vitamin D in recent years has been shown to be important in several areas outside bone health and may be associated with muscular weakness, falls, reduced cognition, mood disorders, increased risk of cancer (particularly breast and bowel cancer) and orthostatic hypotension. This year we plan to study the effect of vitamin D supplementation in the older person, focusing on bone health, falls reduction and improvement of blood pressure.

This study is assessing patients with vitamin D deficiency and assessing alterations in muscle strength after supplementation with oral vitamin D. This study began in October 2010 and to date there have been 47 patients assessed. It is hoped that it will be completed in the next 6 months.

Fosavance 5600 Study

Clinical Investigator: Ms Georgina Steen
Dr JG Browne

This study has been completed this year. It was carried out in conjunction with Merck Sharp and Dohme and it looked at the effect of alendronate and vitamin D3 on patients with vitamin D deficiency focusing on falls reduction and improvement of vitamin D levels.

PACE Study

Clinical Investigators: Clinical Nurse Specialists
Ms Georgina Steen,
Ms Nessa Fallon,
Ms Kara Fitzgerald

This study commenced in early 2009. It is a European observational study and collected information on adherence, demographics and clinical characteristics of patients prescribed PTH 1-84 (Preotact) and will be monitoring safety for 2 years following initiation of treatment. 13 patients have been enrolled and the study will conclude in 2012.

Intervention of the Clinical Nurse Specialist in Hip Fracture Patients

Clinical Investigator: Ms Niamh Maher, Clinical Nurse Specialist

“Post Hip Fracture in Older Adults: Interventions and Strategies for Improving Outcomes. The role and Function of the Clinical Nurse Specialist within an Elderly Falls Unit”

Hip fracture patients are at an increased risk of disability after hip fracture and may be at risk of further falls and fractures. Ms Niamh Maher has commenced a study in the area of optimising the management of hip fracture patients. Patients are being assessed and advised with regards to osteoporosis in the nurse-led clinics, with particular interest in falls prevention

as 90% of our hip fracture population have sustained a fall at the time of fracture. Niamh Maher, Clinical Nurse Specialist in Falls and Osteoporosis, is researching the value and additional benefit of having a clinical nurse specialist intervene in patients who have had a hip fracture and the optimisation of outcomes for these patients assessing quality of life, improved mobility and compliance with medication. To date, 228 patients have been recruited in the study.

Biomarkers in Osteoporosis

Principal Investigators: Ms Laura Corrigan
 Dr Jackie Daly

Clinical Investigator: Dr JG Browne
 Ms Kara Fitzgerald, Clinical Nurse Specialist

The osteoporosis service has commenced an interesting study looking at the possibility of identifying proteins that vary between patients who have normal, osteopaenic and osteoporotic bones based on DXA.

This study is being done in conjunction with RCSI and is identifying patients with normal and low bone mass. Serum biomarkers are being used for identification of patients at higher risk of low bone mass and fracture. This may provide a screening blood test to identify high-risk patients. To date, 206 patients have been assessed.

STRONGER Study

Clinical Investigator: Ms N Fallon, Clinical Nurse Specialist
 Dr JG Browne

This study involves the review of patients commenced on Strontium therapy for the treatment of osteoporosis. It will review the outcome, quality of life, benefits and side effects of strontium in patients over 1 year. Currently, there are 9 patients from our centre.

Falls and Blackout Unit (FABU)

This is an out-patient assessment clinic that runs five days a week where patients with unexplained falls and blackouts are investigated using state of the art cardiovascular technology. The clinics are currently staffed by:

- Two consultants Prof Rose Anne Kenny (Director) and Dr Conal Cunningham
- 1 Clinical Lecturer in Gerontology
- 3 Clinical research registrars
- 3 Clinical registrars
- 3 Clinical nurse specialists
- 1 Administrative staff.

The clinic commenced in 2003 with Dr Conal Cunningham and with the arrival of Prof. Rose Anne Kenny moved to a new expanded site beside the Emergency Department in December 2005. An increase in staff and space allowed for a rapid increase in numbers of patients assessed. Activity continues to increase significantly every year with the main source of referrals coming from the Emergency Department, Inpatient referrals, GPs, Cardiology services, Neurology services, MedEL services and Peripheral Hospitals from all around the country. It provides the largest syncope clinic service within Ireland and the numbers of patients assessed increases on a yearly basis.

Falls and Blackout Clinic attendances:

Falls & Blackout Clinic	New Patients	Return Patients	Total
2006	710	549	1259
2007	690	1178	1868
2008	710	1574	2284
2009	974	2143	3117
2010	837	2079	2916

Monitor Clinic - Falls & Blackout Unit

	New Patients	Return Patients	Total
2009	27	200	227
2010	89	514	603

Falls and Syncope Assessment

40% of individuals will have an episode of blackout or fainting at some point in their lives. For the majority of younger individuals this represents a benign faint and they do not need to be assessed by a doctor. However if this proves recurrent or if a blackout occurs in an older individual this does require investigation due to the risk of underlying cardiovascular aetiology. The Falls & Blackout unit allows for a detailed investigative work-up of these patients negating the need for admission to hospital. It acts as a one stop assessment where all tests can be carried out and a diagnosis made often with only one visit required. Some individuals present with unexplained falls. In older individuals there is often amnesia for loss of consciousness. Technology within the unit allows for this to be teased out and assessed further.

All patients attending the unit have a detailed history and examination from which an appropriate investigative pathway can be determined.

Investigations carried out include:

Active stand test: to identify the presence of orthostatic hypotension

Carotid sinus massage : For the diagnosis of carotid sinus hypersensitivity

Head-up tilt table test: To reproduces Vasovagal syncope

All testing is supervised by nursing staff trained in the use of finometer equipment which allows beat-to-beat blood pressure measurement. All nursing staff are specialised in either cardiology or Care of the Elderly.

Patients with non syncopal causes of falls or multifactorial aetiology of falls are linked in to the Day Hospital services within MedEL. Otherwise treatment is instigated within the FABU clinic with follow up of patients to assess response. The vast majority are dealt with solely by the clinic and discharged back to the community. Referral to Cardiology, Neurology and ENT services within St James’s Hospital is arranged, if required.

Dizzy Clinic

The Dizzy clinic was set up in February 2009 by Dr Mimi Fan as an adjunct to the Falls and Blackout clinic specifically for assessment and treatment of this symptom. This clinic focuses in particular on assessment of patients presenting with dizziness secondary to vestibular disorders. Dizziness is a common symptom with many causes. Patients can access the Dizzy clinic which is held once a month by referral from their General Practitioner or doctor within the hospital. The evaluation of the patients include a detailed history and examination for both

cardiovascular and vestibular causes for dizziness. For patients with vestibular dysfunction, patients are given written information regarding vestibular rehabilitation and are referred to a physiotherapist with an interest in vestibular rehabilitation. Particle repositioning therapy for benign positional paroxysmal vertigo is provided. Any suspected blood pressure or heart rhythm cause of dizziness will be comprehensively investigated and managed in the Falls and Blackout Unit. To date, 150 patients have attended the clinic. Specialist registrars are also taught the particle repositioning technique during their training in the Falls and Blackout Unit.

Nurse led Clinics and Education

Nurse led autonomic function testing clinics occur once a week in the FABU. These investigations are necessary in some patients to investigate underlying causes for syncope and falls. Autonomic function tests are performed and interpreted by the specialist nurses in the unit.

Nurses within the clinic act as a direct line of contact for patients who phone in on a 9-5pm basis and are able to advise and instigate conservative measures often preventing unnecessary A&E attendances.

Nurses solely supervise attachment of monitors for patients within the clinic and also on the wards. This allows for quick assessment of blood pressure and heart rate on a 24 hour or seven day basis. Monitors available are 24 hr BP monitors, 24 hr ECG monitors along with seven day event monitors. Downloading of results and reporting are carried out by nursing staff.

Training of both medical and nursing students occurs on an ongoing basis along with visiting nursing staff from centres in other hospitals where syncope units are in the early stages of development.

In 2010 a remote monitoring system for Implantable Loop recorders was established. This service provides a facility where patients can send heart recording via a telephone line for immediate review by nursing and medical staff, thereby improving efficiency and safety for these patients. To date 35 patients across Ireland have availed of this service in 2010. The service allows for immediate review of heart rate activity thereby reducing the number of hospital visits required for that patient.

Research

Ongoing research continues within the clinics. The FABU also works closely with the TRIL clinic, both with assessment of patient referrals from TRIL and referring research participants to TRIL.

Areas of research include neurocardiovascular instability and its relationship to falls, blackouts and cognitive deficits. Collaboration is ongoing with the medical physics department of St. James Hospital studying pathophysiology of Carotid Sinus Hypersensitivity.

Research is ongoing into prevalence and causality of amnesia for loss of consciousness, as well as symptom patterns in vasovagal syncope in different age groups in a two year study due for completion June 2010. Collaboration with colleagues as part of this study for analysis of EEG output is with Dr Sean Connolly and Dr Yvonne Langan in Neurophysiology and Trinity Bioengineering.

Researcher: Dr Clodagh O'Dwyer

Supervisors: Prof Rose Anne Kenny; Dr Mimi Fan

Research completed to date in 2010 has been presented at national, european and international forums.

Stroke Research

2010 has been an exciting year for stroke research in St. James Hospital. This year has seen the commencement of a 3 year HRB funded project which will investigate a relationship between infarction in the borderzone regions of the brain and neurocardiovascular instability. This project has commenced recruitment of patients from both the falls and blackout services and the stroke services. It aims to recruit an older cohort of people which we believe are quite sensitive to variations in blood pressure. We will determine whether low blood pressure dips are causing injury to their brain through the use of a 3 Tesla MRI scanner at the Centre for Advanced Medical Imaging, St. James Hospital. This 3 Tesla MR machine is one of only 2 such scanners in Ireland. The high quality image resolution will facilitate exceptional sensitivity with regards demonstration of any form of brain injury these patients may be experiencing. Patients will also be assessed in the falls and blackout service to determine whether neurocardiovascular instability is present and tease out the nature of their neurocardiovascular instability.

Patients will also undergo transcranial Doppler ultrasound examination using the recently purchased Transcranial Doppler Ultrasound. This highly complex, mobile, non-invasive, practical instrument was generously donated to the stroke service by the Mercers Institute for Research on Ageing. It detects cerebral blood flow in the intracranial arteries and can demonstrate narrowing of an artery as well as the nature of change in the artery in response to stimuli such as changes in posture. It will undoubtedly prove invaluable in both the clinical investigation of stroke and as a research aid to facilitate a greater understanding into the mechanisms of stroke disease. The project will be co-ordinated by Dr. Daniel Ryan, MedEL SpR under the guidance of Dr. Joe Harbison and Professor Roseanne Kenny.

This year Dr. Marianne Falconer, under the supervision of Dr. Harbison, published research which describes the nature of fatigue among stroke patients in the Journal of Stroke and Cerebrovascular Diseases.

The Stroke Diploma, under the ongoing guidance of Dr. Harbison, has grown in popularity and standard. Currently 27 people are enrolled in this diploma which aims to increase the standard of stroke care among the trainee geriatricians, neurologists and general physicians in Ireland.

2011 looks to be even more exciting as 2 separate studies will begin which will investigate the relationship between post traumatic stress disorder and fatigue following stroke. These will be conducted by a psychology PhD student, Claire Crowe and Dr. Martin Mulroy, Stroke Senior Fellow. Dr. Carl Boyle, Stroke Fellow, will return from Stroke work in Canada to begin research in the stroke department. The Stroke Department at St. James will participate in a novel European multi-centre study which will investigate the benefits of reducing core body temperature immediately following a stroke event.

From the clinical point of view the Acute Stroke Unit on William Wilde Ward continues to be a success. St James's now has the shortest mean and median length of stay for stroke patients of any Dublin Hospital and a stroke mortality significantly lower than the European average. The St James's Hospital Foundation has been fundraising for the stroke service for the last 2 years and has collected nearly 250,000 euros for equipment, infrastructure and training which has greatly helped in the care of stroke patients at ward level.

In the last year we had 1200 outpatient attendances at our clinics and we saw the vast majority of suspected stroke patients on inpatient consults, seeing approximately 50 - 60 consults per

month. We cared for 275 inpatients directly and saw the majority of the others on consultation and reviewed them through a dedicated weekly multidisciplinary team meeting. We continue to review all carotid surgery patient pre-operation to ensure best quality care and 50 of these procedures were performed last year.

Sr. Suzanne Walsh has recently been confirmed as St James's first Clinical Nurse Specialist in Stroke medicine and has successfully completed her Nurse prescribing training. She is currently organising St James's second National Stroke Nursing Meeting.

In the course of the last year we established a not-for profit company to develop hand held computer applications to help with the care of stroke patients and this is now available on the Apple iPhone App Store. We are currently in the early stages to develop an interface app to enable collection of data to be used in a national stroke register.

Medical Physics and Bio-engineering

Technology related research at MIRA

MIRA has long recognised the potential of technology in the care of older people and has been committed to fostering interaction between technology specialists and clinicians. Growing from this interaction, a themed strand of Technology and Enablement now forms part of the Mercer's Institute for Successful Ageing research strategy. The theme draws on a wide base of clinical, academic and industry collaborators. The Department of Medical Physics and Bioengineering (MPBE) at St. James's Hospital has been a long time partner of Mercer's Institute on projects concerning technology for older people. This collaboration has grown over the years, with MPBE engineers/scientists now also helping support activity at the allied units at TRIL and TILDA. MIRA-MPBE activity in 2010 included:

(i) Gait and Balance

Tim Foran (MPBE) is continuing research into the gait and balance characteristics of fallers under the supervision of Prof. Rose Anne Kenny. Novel wireless inertial sensor technology is used to record the gait patterns of older fallers and non-fallers as they walk a test route in the research clinic. Signals from the sensors are evaluated using linear and nonlinear processing methods to assess the degree of variability and stability inherent in the walking patterns. This analysis will contribute to the assessment of falls risk in older people.

(ii) Measurement and Biophysics of Ocular Microtremor

Emer Kenny continued her SFI funded research into developing optical methods for Ocular Microtremor (OMT) measurement under the supervision of Prof Davis Coakley and Dr. Gerard Boyle (MPBE). Ocular Microtremor (OMT) is a minute eye movement related to brainstem function, which has diagnostic and prognostic potential in brainstem disease. Research on the preliminary results of using a high speed camera in OMT measurement was presented at the SPIE Photonics Europe in Brussels in April 2011, the main European optics conference. Supporting work concerning computer modelling of measurement process presented at the BioPic (BioPhotonics and Imaging Conference) in October.

Mohammed al-Kalbani was awarded a PhD for his research on eye contacting methods of OMT measurement in 2010.

(iii) Syncope and Falls

Ciarán Finucane (MPBE) completed his PhD research on Syncope and Falls under the supervision of Prof. Rose Anne Kenny and Dr. Gerard Boyle (MPBE). Much of this work was presented at international conferences including Cardiotim, 2010 and the American Autonomic Society international meetings held this year.

In this work, Ciarán has brought engineering principles to bear on the problem of Carotid Sinus Syndrome (CSS), a major cause of falling in older people. This project has taken a novel but comprehensive and coherent approach to the study of CSS. The components of the projects range from the study of the underlying physiological causes and signs of CSS to the development of improved tools for CSS diagnosis.

Several exciting findings and advances have been made, some of which have already been submitted for publication. In this work a complete computer based mathematical model of the cardiovascular system has been implemented. The model integrates discrete mathematical models of the elements cardiovascular system (e.g. the major vessels, heart chambers, the neck 'baroreceptors' or blood pressure sensors) into a single model showing how these elements interact to maintain blood pressure and heart rate. This is the first model designed and implemented to allow modelling of CSS. The model has already been demonstrated to replicate known blood pressure and heart rate features of CSS seen clinically. The model will allow hypotheses on the physiological causes of CSS to be tested.

A major objective of this work has been to simplify and improve the clinical tests used to diagnose CSS. Currently, CSS is diagnosed through Cardiac Sinus Massage (CSM) – the observation of heart rate and blood pressure responses to neck massage. Using signal processing techniques, the group has demonstrated that the analysis of ECG and blood pressure traces may in the future form an alternative, non invasive approach to the diagnosis of CSS, with the potential to replace or augment the CSM technique. In addition, Ciarán has designed several technical improvements to help standardise and improve the accuracy of CSM.

(iv) Support for TRIL activity

MPBE continues to take an active role in the Technology Research for Independent Living program, providing scientific support for the clinical research activity. The clinic introduced a Longitudinal follow up study in 2010, where to date 311 participants have attended. A novel digital data collection tool (MCA) was introduced for data collection which feeds to a local server prior to an automated transfer of data to a central TRIL Data Repository in UCD. This novel process ensures integrity of data collation.

(v) Support for TILDA Research in Syncope & Falls

Ciarán Finucane is currently continuing his research in Syncope in the elderly as part of the TILDA project. Following on from a novel cluster analysis technique developed by Ciarán in 2008, Ciarán is now currently working in collaboration with Dr. Mimi Fan to develop optimal analysis techniques and software for detection of poor cardiovascular control in the elderly. This will be the first population based study of its kind to examine the patterns of blood pressure control following standing and should lead to better understanding of Orthostatic Hypotension and its role in Frailty and Cognitive impairment at a population level. In tandem under the same theme Ciarán is also looking at other non-invasive measures of neurocardiovascular control i.e. blood pressure variability, heart rate variability and baroreflex sensitivity and their role in healthy ageing.

The Irish Longitudinal study on Ageing



The Irish Longitudinal Study on Ageing (TILDA) is the most comprehensive study of its type ever conducted in Ireland. TILDA started collecting baseline data in October 2009 on all aspects of the lives of people aged 50 and over living in Ireland, including the economic dimension (pensions, employment, income and assets, etc.), health aspects (physical, mental, service needs and usage, etc.) and social aspects (contact with friends and kin, formal and informal care, social participation, etc.). Designed as a longitudinal study, respondents will be reassessed every two years over a ten year time horizon.

The background and rationale to the study were described in the 2009 MIRA report. Further details on the study, including the structure of the organisation and researchers involved are available on www.tcd.ie/tilda. The focus of this report is to update readers on the description of the study and the goals reached in 2010.

Project Description:

A nationally representative sample of at least 8,000 adults aged 50 and over, resident in Ireland, is selected using a population sift. Each address in the nation has an equal probability of selection. If all eligible households participate, the study will represent the urban/rural mix in the country as well as income, education, gender and geographical groupings.

The study is composed of 3 steps:

Step 1: The selected addresses are visited by a fieldworker and all persons aged 50 or over (and their spouses of any age) are canvassed to participate in the survey. If agreeable, respondents are first interviewed in their own home using Computer-Aided Personal Interviewing (CAPI) techniques. The CAPI interview covers social, economic and health domains.

Step 2: Respondents who complete the CAPI interview are left a self-completion questionnaire (SCQ) that they fill out in their own time and return to TILDA. This SCQ covers some of the more sensitive social & health questions as well as questions that require reflection and time to complete.

Step 3: All respondents who complete the CAPI interview are invited to attend for a health assessment in one of two dedicated health centres (Cork & Dublin). If the respondent is unable or unwilling to attend a health centre, he/she is offered a home assessment (modified assessment). All health assessments are conducted by trained research nurses.

All the information that is given is treated with the strictest confidence and is anonymous.

Major Developments in 2010

2010 was a busy and exciting year for the TILDA study with major developments in the following areas:

Fieldwork:

The first three months of the year were busy recruiting and training social interviews to conduct the CAPI interviews. By April 2010, more than 120 trained interviewers were in the field actively recruiting eligible respondents. By December 31st 2010, 7828 of the 8000

respondents had been recruited. It is anticipated that all 8000 respondents will have been recruited by the end of January 2011.

Health Assessments:

The demand for centre based health assessments in both Dublin & Cork remained high, necessitating the recruitment and training of a further 12 research nurses. February 2010 saw the introduction of home assessments, a shortened version of the centre based assessments. Results from the national pilot in 2009 demonstrated a large difference between respondents who attended an assessment centre (younger, healthier) and those who required a home assessment (older, frailer), indicating the importance of including both approaches to avoid systematically over-representing younger healthier respondents. By April 2010, we had a total complement of 17 research nurses and one full-time Research Nurse Manager working on TILDA. As of December 31st 2010, 3958 health assessments had been completed.

Funding & Grants:

Since its initiation, TILDA has been funded from two sources; a grant from Irish Life as well as a series of grants from the Atlantic Philanthropies. In 2010, a new major funder came on board in the form of the Office of the Minister for Older People who committed 12 million euro to TILDA over the next seven years. The total grant award from all funders amounts to 29 million euro.

In November 2010: Dr George Savva was awarded a grant from the Centre for Ageing Research and Development in Ireland (CARDI) to investigate the relationship between multi-morbidity and disability using existing epidemiological datasets from Northern Ireland and the Republic of Ireland.

In December 2010: TILDA submitted a grant application to the NIH, in collaboration with the SHARE pan-European study to conduct health assessments on their Irish respondents. If successful, we anticipate conducting additional health assessments on approximately 800 SHARE Ireland respondents between June and August 2011.

New Staff:

New hires during 2010 included a Survey Manager, Biostatistician, Research Nurse Manager, Database Manager, two Economic Postdoctoral Researchers as well as further administrative support. In addition, an arrangement was made with the Economic and Social Research Institute (ESRI) to second Professor Alan Barrett to the TILDA study.

The TILDA Design Report was published in May 2010, detailing the study objectives as well as the study design. This detailed reference document is available in a pdf format on the TILDA website (www.tcd.ie/tilda).

Plans for 2011

Complete first wave of the study's data collection (by June 2011).

Lodge the cleaned data set in the Irish Social Science Data Archive (by December 2011).

Plan and implement Wave 2 (due to start November/December 2011).

Generate interest in collaborative research analysis and work.

Continue to publicise the study, both nationally and internationally.

Technology Research for Independent Living (TRIL)

TRIL is a virtual centre of expertise and research into improving the health and happiness of older people. TRIL is a collaborative effort combining Intel personnel and researchers from Irish universities and hospitals in multi-disciplinary teams. TRIL focuses on understanding and delivering on the support needs and preferences of older people at home and in care environments. TRIL’s mission is to discover and deliver technology solutions which support independent ageing, ideally in a home environment. This will improve the quality of life of older citizens while reducing the burden on carers and on the healthcare system.

TRIL is not a single project but a centre of excellence, which will deliver a range of focused research projects by combining the skills and expertise of multi-disciplinary teams of scientists from the third-level sector, clinical specialists and industrial researchers. TRIL is engaging with the leading Irish experts in a range of disciplines including social science, social interaction modelling, falls and frailty, cognitive performance decline, medical informatics and biomedical engineering.

The strands within the TRIL centre projects address the three key domains in ageing, physical, cognition and social connectivity.

Further information on TRIL can be obtained from <http://www.trilcenter.org>

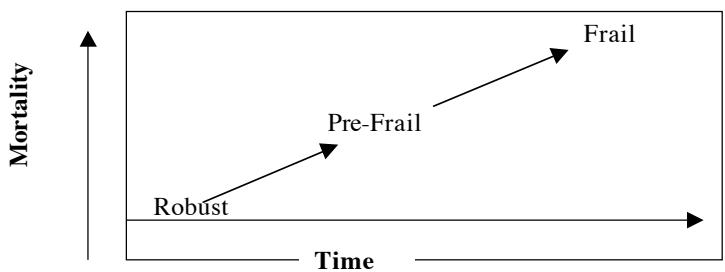
The TRIL clinic is based at the top of Hospital 4 in MIRA and started in August 2007. Between 2007 and 2009 over 600 older people participated in the first cross-sectional wave of research and data collection. The principal activity of the TRIL clinic during 2010 was the longitudinal follow up of participants originally assessed in 2007/2008.

TRIL Clinic 2010

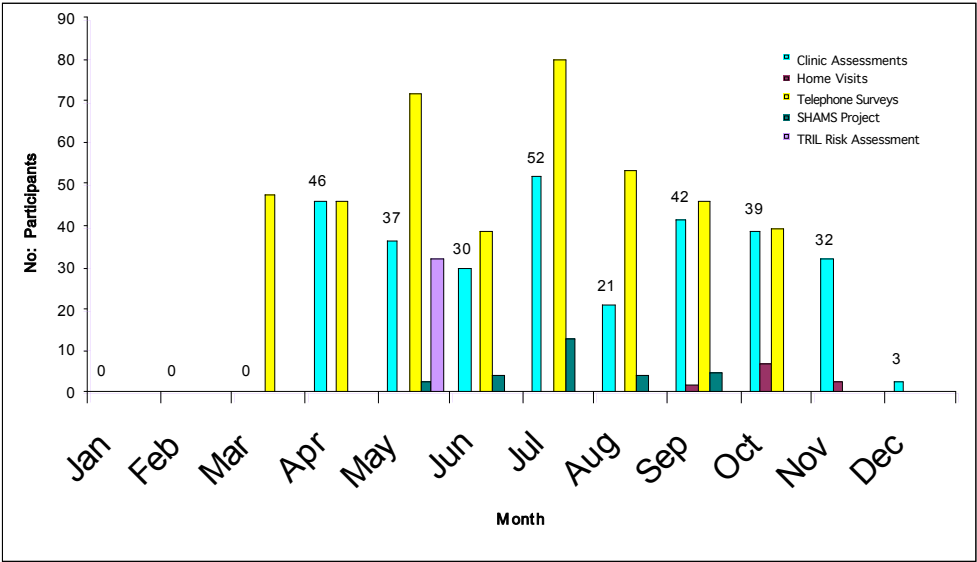
As part of the TRIL longitudinal study all original 600 TRIL participants are to receive follow up phone contact from the clinic with the option to participate in our longitudinal telephone interview. This questionnaire has been developed by the TRIL principal investigators to assess Falls status, Health care Utilisation and Living status, to include activities of daily living and Physical self Maintenance Scale.

The participants are then invited back to the TRIL clinic for a follow up assessment. Those who are unable to attend the clinic will be offered the alternative of an assessment in the home. The total number of participants to be recruited for full follow-up clinic assessments by early 2011 is 450. The aim is to complete a comprehensive clinical assessment comparing key novel biopsychosocial health markers that were originally identified through TRIL 1.0 cross-sectional work and evaluate change since their first engagement with the research clinic.

This longitudinal study is tremendously important; it will allow the validation of various biomarkers previously identified in the TRIL 1.0 cross-sectional study to predict changes



within this cohort, and to refine measurements to just key variables. For example one of the key clinical index's currently used to measure frailty is the Fried Frailty Index. A goal of this research will be to refine and streamline the components to enhance its specificity. Additionally, to learn if participants have transitioned from one phase of frailty to the next either quicker or slower than expected, and why. Can we intervene to slow, or invert this process?



Update on TRIL Clinic Assessments

During 2010 there were 302 clinic assessments, 12 home assessments and 424 telephone interviews made as part of the longitudinal follow up of the original 600 TRIL participants. 16% of participants who received a full follow-up assessment needed to be referred on to further clinical services ranging from Memory Clinic, Physiotherapy, Dermatology and Psychiatry for the Elderly services. Of the assessments made, the home assessments proved to be interesting, as generally these individuals were at the frailer / poorer health end of the spectrum, and therefore would not have ordinarily been assessed at the clinic due to non-participation.

Technology Developments in support of the Clinic

One of the most exciting developments in the Clinic during 2010 was the paperless gathering of clinic data. A panel of purpose built rugged medical touch screen tablet computers were deployed in the clinic. Termed Mobile Clinical Assistants (MCA's), these tablet computers replaced the paper based surveys and clinical clipboards. Each of these C5, MCA's (pictured below) produced by Motion Computing, run a clinical program called a CDAT authored by the TRIL –TTP group, to allow electronic capture of the clinic data.

Outputs:

During 2010, there were 29 poster abstracts produced by researchers and staff based at the TRIL clinic. In addition during the same period there were 4 peer reviewed publications accepted, there are a further 11 submitted for publication.

TRIL Clinic Quality Initiatives

During 2010, the TRIL clinic engaged in a variety of quality initiatives.

Good Clinical Practice:

Good Clinical Practice, is a quality standard for the conduct of clinical trials, defined by the International Conference on Harmonization. In cooperation with Molecular Medicine Ireland & the Irish Clinical Research Infrastructure Network (ICRIN), The TRIL clinic engaged in a so-called ‘friendly’ audit. This activity forms part of ICRINs Research readiness programme. Additionally Dr Patrick Corley, TRIL clinic programme manager was nominated to the ICRIN Working Group Quality Management sub team

Data Quality Initiatives

A range of supporting initiatives were rolled out in 2010, including monthly data quality meetings, formal processes for reporting data errors and technical problems. Additionally planning for a formal quality data cleansing process to be carried out in January 2011.

Research Focus of TRIL Clinic in 2011

The research focus of the Falls Prevention strand in 2011 will be on falls, frailty, healthcare utilization and psychosocial and quality of life trajectories. The predictive power of the potential risk factors for these outcomes, which were identified in 2010, will be confirmed by longitudinal analysis of 450 participants from the original TRIL 1.0 cohort. This information will then be translated into the development of new assessment and intervention packages. These technology based packages will be trialed clinically and in the homes of a community-based test-bed of older people. The ultimate goal is to develop customized interventions and self-managed monitoring that can be put into general use in clinical and private practice and in the home. The TRIL community based test-bed would be a multi functional capability which will enable TRIL, other partners and external customers to engage in scalable assisted technology pilots. The key components of the proposed test-bed are shown in Figure 1. The test-bed will enable researchers to study the bio-psycho-social consequences of ageing in a variety of locations such as the TRIL clinic, participants homes etc. It will also enable technologists and designers to strengthen person centred technology innovation through the utilisation of the test-bed capacity.

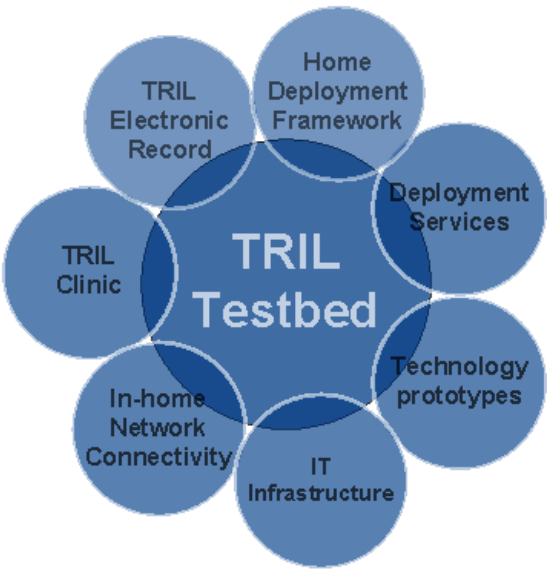


Figure 1 TRIL Test-bed Components

The Trinity, University of Ulster and Department of Agriculture Study (TUDA)

TUDA is a large cross-sectional, collaborative study involving the Mercer's Institute, Trinity College Departments of Gerontology, Old Age Psychiatry and Biochemistry, the University of Ulster and the Department of Agriculture. It aims to create a nutritional genotype/phenotype database of 6000 community dwelling subjects aged over 60 on the island of Ireland (north and south) with certain age related diseases. This research will form part of a wider Nutritional Phenotype database that is being conducted across several sites.

Three separate cohorts of subjects, each with 2000 patients and having evidence of either cognitive impairment, hypertension or osteopaenia/osteoporosis are being recruited. Two of these cohorts representing those with cognitive dysfunction and brittle bones are being recruited from the outpatient services at the MedEL Directorate at St. James's Hospital. The third cohort includes those with a diagnosis of hypertension and is being recruited from GP practises in Northern Ireland. Recruitment began in Jan 2009 and is due to finish in June 2011.

All participants undergo a single assessment lasting about 70 mins which includes a structured interview recording self reported information on demographic details, education, medical history, current medications, diet, smoking and alcohol status, physical activity, sun exposure, falls, psychosocial and family history. Validated questionnaires that screen for depression and anxiety and measure functional status are administered in addition to detailed neuropsychological testing. Biophysical measurements including blood pressure is recorded and routine blood tests as well as vitamin levels and genetic biomarkers are being collected.

Once completed, the TUDA database will be a very important national resource for the further investigation of age related diseases and will be one of the largest of its type in Ireland. It will also provide a large bank of clinical data for future research at the Mercer's Institute. It is hoped that the analysis of this data may identify potential clinical, biochemical and genetic risk factors and how their interaction may increase the susceptibility to these diseases.

Two clinical research nurses (Sinead Mc Niffe and Helen Toohey) and the Watts Clinical Research Fellow Dr. Kevin Mc Carroll have been recruiting patients from St. James's Hospital. In addition, Michelle Clarke, nutritionist and PhD student and Clare O'Donovan, dietician and research assistant both from the University of Ulster have been recruiting subjects for the bone cohort at St. James's since August 2010. To date about 1700 subjects have been recruited.

Dr. Kevin McCarroll will be using data obtained from the TUDA study to explore the relationship between vitamin D and cognition, blood pressure, falls and depression as part of his doctoral thesis. Vitamin D has been implicated as a potential factor in the aetiology of the above and several other diseases. Given the high prevalence of vitamin D insufficiency/deficiency this may be a matter of significant global health importance.

It is hoped that results from TUDA may cast more insight into the potential nature of this relationship. Mary Ann Peters, an undergraduate BSc. student in Physiology at Trinity College, Dublin will be basing her research dissertation on a pilot analysis of the relationship between vitamin D and tests of cognition under the supervision of Dr. Kevin Mc Carroll. It is intended that she will be based in MIRA from January to March of 2011 and will be involved in the recruitment and assessment of TUDA patients.

Dr. Robert Coen in collaboration with Dr. Kevin Mc Carroll and Philip Coey, an MSc. Psychology student from University College Dublin, completed an analysis of the normative interpretation of data on the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS). This is the first published data from participants of the TUDA study at St. James's Hospital and was presented as an abstract at both the annual conference of the European Geriatric Medicine Society and the Psychological Society of Ireland last year.

Publications

Borovickova I, Casey MC, Healy M, Chuan C, Ward JM, Crowley V, Walsh, JB. *Experience of Recombinant Parathyroid Hormone in a Tertiary Referral Hospital in the Republic of Ireland.* Osteoporos Int (2010) 21(Suppl1):S166.

Browne JG, Mesallati T, Picard C, Reeve-Arnold K, O Reilly P, Daly JS, Casey MC, Walsh JB, Taylor D. *Investigating bone quality in patients with hip fractures using newer bioengineering techniques.* Bone, Volume 47, Supplement 1, June 2010, Pages S80-S81

Browne, JG. Farrell T, Adams, N, Maher N, Hogan N, McCarthy T, McKenna J, Smyth H, Casey MC, Walsh JB. *A Comparison Audit of Patients with Hip Fractures admitted to a Large Dublin Hospital compared to the UK National Hip Fracture Database.* European Geriatric Medicine 1;Suppl 1:S25

Browne JG, O'Connell F, Fitzgerald K, Healy M, Cox G, Casey MC, Walsh JB. *Prevalence of Vitamin D Deficiency in Older Irish Patients attending an Osteoporosis Clinic.* European Geriatric Medicine 1;Suppl 1: S30

Browne JG, Mesallati, T., Picard, C., Reeve-Arnold, K., O'Reilly, P., Daly, J.S., Casey, M.C., Walsh, JB, Taylor, D. *Investigating Bone Quality in Patients with Hip Fracture.* Age and Ageing 39, 2010

Browne JG, Lim Y, Casey MC, Walsh JB. *The Value of Lateral Vertebral Assessment in Patients Receiving Glucocorticoids Referred for Dual X-Ray Absorptiometry (DXA).* Age and Ageing, 102 (2), 2010

Browne JG, O'Connell F, Fitzgerald, Healy M, Crowley V, Casey MC, Walsh, JB. *Vitamin D Deficiency is Highly Prevalent in Irish Patients being referred to an Osteoporosis Clinic.* Osteoporos Int Volume 21;Suppl 1: S78-79.

Browne, JG Steen G, Toth Z, Casey MC, Walsh JB. *Referral for DXA scanning: Which Risk factors are most predictive for Osteoporosis.* Bone, Volume 47, Supplement 1, June 2010, Pages S160-S161

Browne JG, Farrell T, Adams, N, Maher N, Hogan N, McCarthy T, McKenna J, Smyth H, Casey MC, Walsh JB. *A Comparison Audit of Patients with Hip Fractures admitted to a Large Dublin Hospital compared to the UK National Hip Fracture Database.* Osteoporos Int 21;Suppl 3: S505-506.

Browne JG, O'Connell F, Healy M, Fitzgerald K, Casey MC, Walsh JB. *Seasonal Variation of Serum Markers of Bone Turnover and 25-Hydroxyvitamin D in Irish Patients attending an Osteoporosis Clinic.* J Bone Miner Res 25 (Suppl 1).

Cahill S, Diaz-Ponce AM, Coen RF, Walsh C. (2010) *The underdetection of cognitive impairment in Nursing Homes in the Dublin Area. The need for on-going cognitive assessment.* Age and Ageing, 39, 128-131

Chan GC, Borovickova I, Healy M, Fallon N, Walsh JB, Casey MC. *Prior Bisphosphonate Treatment Attenuated Teriparatide Resoponse With A Blunted Lumbar Bone Mineral Density Gain.* European Geriatric Medicine 1;Suppl 1: S27-28.

Chan GC, Lee CL, Thornton E, Fitzgerald K, Walsh JB, Casey MC. *Quantitative Calcaneal Ultrasound – It's Accurate but is it Accurate Enough to Screen Community Dwelling Women for Osteoporosis?* Osteoporos Int 21;Suppl 3: S487. Bone, Volume 47, Supplement 1, June 2010, Pages S161-S162

Chan GC, Philbin D, Lee CL, Casey MC, Walsh JB, Coakley D. *Low Vitamin D as a Consequence of Cholecystectomy.* Osteoporos Int 21;Suppl 3: S507-508.

Chan GC, Lee CL, Fallon N, Casey MC, Walsh JB. *Quantitative Calcaneal Ultrasound – The Effect of Age on Accuracy.* Bone, Volume 47, Supplement 1, June 2010, Pages S162.

Chan GC, Lee CL, Walsh JB, Casey MC. *Quantitative Calcaneal – How Does it Correlate to DXA?* Bone, Volume 47, Supplement 1, June 2010, Pages S196

Chan GC, Crowley J, Walsh JB, Casey MC. *Teriparatide (PTH 1-34)-lack of early bone formation (PINP and Osteocalcin) response at 3 months predicts poorer bone mineral density gain in spine.* Bone, Volume 47, Supplement 1, June 2010, Pages S197

Chan GC, Healy M, Walsh JB, Casey MC. *Teriparatide (PTH 1-34)- lower baseline bone resorption and formation markers predicts poorer bone mineral density gain in spine.* Bone, Volume 47, Supplement 1, June 2010, Pages S196-197.

Chan GC, Philbin DM, Casey MC, Walsh JB, Coakley D. *Is Cholecystectomy a risk factor for Osteoporosis.* Osteoporos Int (2010) 21(Suppl1):S297

Coen RF, Cahill R, Lawlor BA. (2011) Things to watch out for when using The Montreal Cognitive Assessment (MoCA). [Letter] International Journal of Geriatric Psychiatry 26(1), 107-108, DOI: 10.002/gps.2471

Coen RF, Flynn B, Rigney E, O'Connor E, Fitzgerald L, Murray C, Dunleavy C, McDonald M, Delaney D, Merriman N, Edgeworth J. *Efficacy Of A Cognitive Stimulation Therapy Programme For People With Dementia.* Reviewed by Irish Journal of Psychological Medicine (under revision)

Coen RF. *Neuropsychological assessment of Mild Cognitive Impairment / prodromal Alzheimer's disease: some recent developments and issues.* Aging Health (in press)

Coen RF, Cahill R, Lawlor BA. *Things to watch out for when using The Montreal Cognitive Assessment (MoCA).* [Letter] International Journal of Geriatric Psychiatry (in press)

Collins O, Dillon S, Finucane C, Lawlor BA, Kenny RA. *Autonomic Influences on Cognitive Functioning – A Cohort Study.* J Neurol Neurosurg Psychiatry (In Press)

Coen RF, McCarroll K, Coey P, Casey M, Walsh JB, Coakley D, Lawlor BA, Scott J, Molloy A, McNulty H, McNiffe S, Toohey H, Cunningham CJ. (2010). *Normal/Abnormal Performance On The Repeatable Battery For The Assessment Of Neuropsychological Status (RBANS) In An Elderly Out-Patient Cohort.* European Geriatric Medicine, S60, Vol 1 Suppl 1

Corrigan L, Adamson K, Browne JG, Fitzgerald K, Chan GC, Kennelly S, Marry J, Nash M, Ryan, D, Ryan D, Fallon N, Steen G, Casey MC, Walsh JB, Lee TC, Daly JS. *Antibody array technology identifies differentially expressed proteins in postmenopausal women with osteopenia and osteoporosis.* Osteoporos Int 21;Suppl 3: S499.

Cronin H, Kenny RA. *Cardiac causes for falls and their treatment.*
Clin Geriatr Med 2010 Nov; 26(4): 539-67

Doheny E, Greene B, Cogan L, Foran T, Fan CW, Kenny RA. *Changes in gyroscope-derived stride length and stride velocity of fallers and non-fallers during dual task walking.* European Geriatric Medicine. Volume 1, n° S1 pages 90-160 (September 2010) Doi : 10.1016/j.eurger.2010.07.008

Doheny E, Greene B, Foran T, Cunningham C, Fan CW, Kenny RA. *Diurnal variations in the five times sit-to-stand test for fallers and non-fallers.* European Geriatric Medicine. Volume 1, n° S1 pages 90-160 (September 2010) Doi : 10.1016/j.eurger.2010.07.008

Doherty CP, Hutchinson S, Abrahams S, Coen RF, *Frontotemporal Dementia. In Neurodegenerative Disorders: A Clinical Guide.* Eds C.P. Doherty & O. Hardiman, Springer (in press).

Fahrleitner-Pammer A, Langdahl BL, Marin F, Jakob F, Karras D, Barrett A, Ljunggren O, Walsh JB, Rajzbaum G, Barker C, Lems WF. *Fracture Rate and Back Pain during and after Discontinuation of Teriparatide: 36-month data from the European Forsteo Observational Study (EFOS).* Osteoporos Int. 2010 Nov 27 (Epub ahead of print).

Fahrleitner-Pammer A, Ljunggren O, Langdahl B, Walsh JB, Barker C, Lems W, Karras D, Rajzbaum G, Jakob F, Barrett A, Marin F. *Changes in Quality of Life and Back Pain in Women with Osteoporosis Treated with RHPH(1-34) (Teriparatide): 36 Month Results from the European Forsteo Observational Study (EFOS).* Osteoporos Int Volume 21;Suppl 1: S156-157.

Fan CW, Cogan L, Romero-Ortuno R, Walsh C, Kenny R.A. *Continuous orthostatic blood pressure measurement and falls in community living older adults.* European Geriatric Medicine. Volume 1, n° S1 pages 13-89 (September 2010)
Doi : 10.1016/j.eurger.2010.07.008

Fan CW, Foran T, CU Cunningham, C Walsh, RA Kenny. *Circadian orthostatic blood pressure behaviour in older fallers and non-fallers in their homes: Influence of meals and medications.* European Geriatric Medicine. Volume 1, n° S1 pages 13-89 (September 2010) Doi : 10.1016/j.eurger.2010.07.008

Fan CW, Foran T, Cunningham, CU, Greene BR, Ni Scannail C, Kenny RA. *Orthostatic hypotension and postural sway: a possible cause for falls in the morning.* European Geriatric Medicine. Volume 1, n° S1 pages 13-89 (September 2010)
Doi : 10.1016/j.eurger.2010.07.008

Fan CW, Foran T, Cogan L, Kenny RA. *Orthostatic haemodynamic responses and gait velocity in older adults.* Parkinsonism & Related Disorders. Volume 16, Supplement 1, February 2010, Page S6

Finucane C, Boyle G, Fan CW, Hade D, Byrne L, Kenny RA. *Mayer wave activity in vasodepressor carotid sinus hypersensitivity.* Europace 2010 feb; 12(2): 247-53

Finucane C, Collins O, O'Dwyer C, Hade D, Boyle G, Kenny RA. *Baroreflex Latency: A role in the pathophysiology of carotid sinus hypersensitivity?* EGM 2010 Sept; 1(1):p.S47

Finucane C, Colgan MP, O'Dwyer C, Fahy C, Collins O, Boyle G, Kenny RA.
Accuracy of anatomical landmarks for locating the carotid sinus.
EGM 2010 Sept; 1(1):p.S48

Finucane C, Boyle G, Fan CW, Hade D., Byrne L., Kenny RA, *Mayer Wave Activity in Vasodepressor Carotid Sinus Hypersensitivity.* EP Europace,12(2), 2010

Fitzgerald K, Steen G, Browne JG, Maher N, Fallon N, Walsh JB. *Does Smoking affect the Bone Health of Post Menopausal Women?* European Geriatric Medicine 1;Suppl 1:S29

Foran T, Fan CW, Cunningham C, Kenny RA.
Effect of Aging and Falls on Step Length / Cadence Ratio In a Group of Community Living Older Women. European Geriatric Medicine. Volume 1, n° S1 pages 1-12 (September 2010)
Doi : 10.1016/j.eurger.2010.07.008

Foran T, Setti A, Burke K, Fan CW, Cogan L, Romero-Ortuno R, Kenny RA, Newell FN. *The role of ageing on efficient spatial navigation and gait velocity.* Parkinsonism & Related Disorders. Volume 16, Supplement 1 February 2010, Page S6

Gallagher D, Ni Mhaolain A, Crosby L, Ryan D, Lacey L, Coen RF, Walsh C, Coakley, Walsh JB, Cunningham CJ, Lawlor BA. *Self-efficacy for dementia care may protect against burden and depression in Alzheimer's caregivers.* Reviewed by Aging and Mental Health (under revision).

Gallagher D, Ni Mhaolain A, Crosby L, Ryan, D, Lacey L, Coen RF, Walsh C, Cunningham, CJ, Lawlor BA. *Dependence and caregiver burden in Alzheimer's disease and mild cognitive impairment.* American Journal of Alzheimer's disease and Other Dementias (in press)

Gallagher D, Mhaolain AN, Coen R, Walsh C, Kilroy D, Belinski K, Bruce I, Coakley D, Walsh JB, Cunningham C, Lawlor BA. *Detecting prodromal Alzheimer's disease in mild cognitive impairment: utility of the CAMCOG and other neuropsychological predictors.* Int J Geriatr Psychiatry. 2010 Dec;25(12):1280-7. PMID: 21086538

Gallagher D, Ni Mhaolain A, Greene E, Walsh C, Denihan A, Bruce I, Golden J, Conroy RM, Kirby M, Lawlor BA. *Late life depression: A comparison of risk factors and clinical characteristics according to age of onset in a sample of community dwelling older adults.* Int J Geriatr Psychiatry.2010 Oct;25(10):981-7PMID: 19998316

Gallagher D, Ni Mhaolain A, Coen RF, Walsh C, Kilroy D, Belinski K, Bruce I, Coakley D, Walsh JB, Cunningham C, Lawlor BA. (2010) *Detecting prodromal Alzheimer's disease in mild cognitive impairment: utility of the CAMCOG and other neuropsychological predictors.* International Journal of Geriatric Psychiatry, 25(12), 1280-1287, doi:10.1002/gps.2480

Gallagher D, Coen RF, Kilroy D, Belinski K, Bruce I, Coakley D, Walsh JB, Cunningham C, Lawlor BA. (2010) *Anxiety and behavioural disturbance as markers of prodromal Alzheimer's disease in patients with mild cognitive impairment.* International Journal of Geriatric Psychiatry; early view, doi:10.1002/gps.2509

Greene BR, O'Donovan A, Romero-Ortuno R, Cogan L, Ni Scanaill C, Kenny RA.
Quantitative Falls risk assessment using body-worn sensors
European Geriatric Medicine. Volume 1, n° S1 pages 90-160 (September 2010)
Doi : 10.1016/j.eurger.2010.07.008

- Greene BR, Fan CW, O'Donovan AD, Foran TG, Cunnigham C, Kenny RA.
Wireless sensor measurement of diurnal variation in postural sway in older adults: homebased study. European Geriatric Medicine. Volume 1, n° S1 pages 90-160 (September 2010)
Doi : 10.1016/j.eurger.2010.07.008
- Greene BR, O'Donovan A, Romero-Ortuno R, Cogan L, Scanaill CN, Kenny RA.
Quantitative falls risk assessment using the timed up and go test.
IEEE Trans Biomed Eng. 2010 Dec;57(12):2918-26. Epub 2010 Oct 4.
- Healy M, Cox G, Casey MC, Walsh JB, Laird E, Crowley V. *Rapid Quantitification of Serum 25-hydroxyvitamin D₃ and D₂ by Liquid Chromatography-Tandem Mass Spectrometry.* Osteoporos Int 21;Suppl 3: S507-508.
- Naughton M, Coen RF, Doherty C, Lawlor BA. *An unusual cause of autobiographical memory loss.* Irish Journal of Psychological Medicine (in press)
- Irish M, Lawlor BA, O'Mara SM, Coen RF. (2010) *Exploring the recollective experience during autobiographical memory retrieval in amnesic mild cognitive impairment.* Journal of the International Neuropsychological Society, 16, 546-555, doi:10.1017/S1355617710000172
- Irish M, Lawlor BA, O'Mara SM, Coen RF. (2010) *Impaired capacity for autonoetic reliving during autobiographical event recall in mild Alzheimer's disease.* Cortex; early view, doi:10.1016/j.cortex.2010.01.002
- Irish M, Lawlor BA, Coen RF, O'Mara S. (2010) *Spatial And Associative Memory In Mild Cognitive Impairment And Conversion To Probable Alzheimer's disease.* European Geriatric Medicine, S60-61, Vol 1 Suppl 1
- Kearney PM, Cronin H, O'Regan C, Kamiya Y, Whelan BJ, Kenny RA.
Comparison of centre and home-based health assessments: early experience from the Irish Longitudinal Study on Ageing (TILDA). Age Ageing. 2011 Jan; 40(1):85-90. Epub 2010 Sep 24.
- Kennelly SP, Abdullah L, Paris D, Parish J, Mathura V, Mullan M, Crawford F, Lawlor BA, Kenny RA. *Demonstration of Safety in Alzheimer's Patients for intervention with an anti-hypertensive drug Nilvadipine: results from a 6-week open label study.* Int J Geriatr Psychiatry 2010 Oct 29. [Epub ahead of print] PMID:21031607 [PubMed as supplied by publisher]
- Kamiya Y, Whelan B, Timonen V, Kenny RA.
The differential impact of subjective and objective aspects of social engagement on cardiovascular risk factors. BMC Geriatr. 2010 Nov 2;10:81.
- Langdahl BL, Rajzbaum G, Jakob F, Karras D, Ljunggren O, Lems WF, Fahrleitner-Pammer A, Walsh JB, Barker C, Kutahov A, Marin F. *Reduction in fracture rate and back pain and increased quality of life in postmenopausal women treated with teriparatide: 18-month data from the European Forsteo Observational Study (EFOS).* Calcif Tissue Int 2009 Dec; 85(6):484-93.
- Lee CL, Chan GC, Casey MC, Walsh JB. *Quantitative Calcaneal Ultrasound- Clinical History of Vertebral Fracture Doesn't Improve Accuracy.* Bone, Volume 47, Supplement 1, June 2010, Pages S162.

Maher N, Steen G, Fitzgerald K, Fallon N, Browne JG, Casey MC, Walsh JB. *Early Assessment of the Impact of Hip Fracture on Patients at Three Months post Fracture*. European Geriatric Medicine 1;Suppl 1: S28-29.

Martin MP, Coen RF, Walsh C, Hodder M, Keane O, Lawlor B.A. (2010) *The Montreal Cognitive Assessment: review of utility in a cognitive studies clinic*. European Geriatric Medicine, S69, Vol1 Suppl 1

McCarthy F, De Bhlaðraithe S, Rice C, McMahon CG, Geary U, Plunkett PK, Crean P, Murphy R, Foley B, Mulvihill N, Kenny RA, Cunningham CJ. *Resource utilization for syncope presenting to an acute hospital Emergency Department* Ir J Med Sci. 2010 Dec; 179(4): 551-5

McDonald C, Chan GC, Toth Z, NP Kennedy, JB Walsh, MC Casey. *Dietary protein has a positive influence on bone mineral density in severely osteoporotic patients*. European Geriatric Medicine 1;Suppl 1: S32-33.

McDonald C, Chan GC, Kennedy NP, Toth Z, Walsh JB, Casey MC. *The relationship between muscle strength and dietary protein intake and bone health*. Bone, Volume 47, Supplement 1, June 2010, Pages S211.

McGowen BM, Bennett K, Casey MC, Walsh JB, Marry J. *Prescribing Patterns of Anti-Osteoporotic Medications pre and post admission for Osteoporotic Type Fracture to a large teaching hospital between 2005-2008*. Osteoporos Int (2010) 21(Suppl1):S248.

McGowan BM, Bennett K, Marry J, Walsh JB, Casey MC. *Primary-care prescribing of anti-osteoporotic-type medications following hospitalisation for fractures*. Eur J Clin Pharmacol. 2010 Nov 23 (Epub ahead of print)

McHugh J, Casey AM, Lawlor B. *Biopsychosocial Predictors of Self-reported Sleep Quality in a Community-Dwelling Ageing Population*. European Geriatric Medicine. Volume 1, n° S1 pages 90-160 (September 2010) Doi :10.1016/j.eurger. 2010.07.008

Ní Mhaoláin AM, Fan CW, Romero-Ortuno R, Cogan L, Cunningham C, Kenny RA, Lawlor BA. *Frailty, loneliness and emotional distress in later life*. European Geriatric Medicine. Volume 1, n° S1 pages 13-89 (September 2010) Doi : 10.1016/j.eurger.2010.07.008

Ní Mhaoláin AN, Gallagher D, O'Connell H, Chin AV, Bruce I, Hamilton F, Teehee E, Coen RF, Coakley D, Walsh JB, Cunningham C, Lawlor BA. *Benzodiazepine use amongst community dwelling elderly: 10 years on*. International Journal of Geriatric Psychiatry 2010 Jun;25(6):650-1 PMID: 20474061

Ní Mhaoláin, A, Gallagher D, O Connell H, Chin A, Bruce I, Hamilton F, Teehee E, Coen R, Robinson D, O Luanaigh C, Coakley D, Cunningham C, Walsh JB, Lawlor BA. *Biopsychosocial predictors of life satisfaction amongst community-dwelling older people: findings from the Dublin Healthy Aging Study*. European Geriatric Medicine. Volume 1, n° S1 pages 13-89 (September 2010)

Ní Mhaoláin A, Gallagher D, O'Connell H, Chin A, Bruce I, Hamilton F, Tehee E, Coen RF, Coakley D, Walsh JB, Cunningham CJ, Lawlor BA. (2010) *Benzodiazepine use amongst community dwelling elderly: 10 years on.* [Letter] *International Journal of Geriatric Psychiatry* 25, 650-651, DOI: 10.002/gps.2362

Ní Mhaoláin, A., Gallagher, D, O'Connell, H., Chin, A., Bruce, I., Hamilton, F., Tehee, E., Coen RF, Coakley D, Cunningham CJ, Walsh JB, Lawlor BA. (2010) *Biopsychosocial determinants of life satisfaction amongst community-dwelling older people: findings from the Dublin Healthy Ageing Study.* *European Geriatric Medicine*, S21, Vol 1 Suppl 1

O'Dwyer C, Rice C, Hade D, Byrne L, Fan CW, Kenny RA. *Prodrome and characteristics of younger and older adults presenting with Vasovagal Syncope.* *Europace* 2010; 12(suppl 1): 136P_6

O'Dwyer C, Kenny RA. *Syncope Clinics and the Older Adult.* *European Geriatric Medicine (EGM)* 1 (2010); 41-44

O'Dwyer C, Hade D, Fan CW, Cunningham, Kenny RA. *How well are European Society of Cardiology(ESC) guidelines adhered to in patients with syncope?* *Ir Med J.* 2010 Jan; 103(1): 11-14

O'Dwyer C, Rice C, Hade D, Byrne L, Fan CW, Kenny RA. *Amnesia for loss of consciousness in Vasovagal Syncope (VVS)* *EGM* 2010 Sept; 1(1):p.S39

O'Sullivan M, Coen RF, O'Hora D, Shiel A. (2010) *Cognitive rehabilitation for individuals with mild cognitive impairment: Development and piloting of a of an intervention for people with memory difficulties and their family members.* *The Irish Psychologist* 37(1), 44

Robinson DJ, O'Luanaigh C, Tehee E, O'Connell H, Hamilton F, Chin AV, Coen RF, Molloy AM, Scott J, Cunningham CJ, Lawlor BA. *Associations between holotranscobalamine, vitamin B12, homocysteine and depressive symptoms in community-dwelling elders.* *International Journal of Geriatric Psychiatry* (Epub ahead of print, Jul 2010 PMID: 20623775)

Robinson DJ, O'Luanaigh C, Tehee E, O'Connell H, Hamilton F, Chin AV, Coen RF, Molloy AM, Scott J, Lawlor BA, Cunningham CJ. *Vitamin B12 status, homocysteine and mortality amongst community-dwelling Irish elders.* *Irish Journal of Medical Science* (Epub ahead of print, Nov 2010 PMID: 21072617)

Robinson DJ, O'Luanaigh C, Tehee E, Coen RF, Molloy AM, Scott J, Lawlor BA, Cunningham CJ. (2010) *Vitamin B12, holotranscobalamin, folate, and homocysteine levels in fallers vs. Non-fallers in community-dwelling elderly.* *European Geriatric Medicine*, S34, Vol 1 Suppl 1

Romero-Ortuno R, Walsh CD, Lawlor BA, Kenny RA. *A Frailty Instrument for Primary Care findings from the Survey of Health, Ageing and Retirement in Europe (SHARE).* *BMC Geriatr.* 2010 Aug 24;10:57. PMID:20731877 [PubMed – in process]

Romero-Ortuno R, Cogan L, Browne J, Healy M, Casey MC, Cunningham C, Walsh JB, Kenny RA. *Seasonal variation of serum vitamin D and the effect of vitamin D supplementation in Irish community-dwelling older people.* *Age Ageing* 2010 Nov 3 (Epub ahead of print).

Romero-Ortuno R, Cogan L, Cunningham CU, Kenny RA. *Do older pedestrians have enough time to cross roads in Dublin? A critique of the Traffic Management Guidelines based on clinical research findings.* *Age Ageing.* 2010 Jan; 39(1):80-6.

Romero-Ortuno R, Cogan L, Foran T, Fan CW, Kenny RA. *Using the Finometer to examine sex differences in hemodynamic responses to orthostasis in older people.* Blood Press Monit. 2010 Feb;15(1):8-17.

Romero-Ortuno R, Cogan L, Browne J, Healy M, Casey MC, Cunningham C, Walsh JB, Kenny RA. *Seasonal variation of serum vitamin D and the effect of vitamin D supplementation in Irish community-dwelling older people.* Age and Ageing. November 3, 2010 doi:10.1093/ageing/afq138.

Romero-Ortuno R, Casey AM, Cunningham C, Squires S, Prendergast D, Kenny RA, Lawlor BA. *Psychosocial and functional correlates of nutrition among community-dwelling older adults in Ireland.* The Journal of Nutrition, Health & Ageing. DOI: 10.1007/s12603-010-0278-4

Romero-Ortuno R, Cogan L, Cunningham C, Kenny RA.
Do Older Pedestrians Have Enough Time To Cross The Road? Evidence From Ireland And Spain And A Call For European Research. European Geriatric Medicine. Volume 1, n° S1 pages 13-89 (September 2010)
Doi : 10.1016/j.eurger.2010.07.008

Romero-Ortuno R, Cogan L, Foran T, Fan CW, Kenny RA.
Using the Finometer to examine sex differences in hemodynamic responses to orthostasis in older people. Blood Press Monit. 2010 Feb;15(1):8-17.

Ryan D, Browne JG, McDermott E, Maher N, Casey MC, Walsh JB. *Performance of Lateral Vertebral Assessment in Assessing Hip Fracture Patients for Vertebral Fracture.* European Geriatric Medicine 1;Suppl 1:S32

Ryan D, Steen N, Colette SM, Kenny RA. *Carotid sinus syndrome, should we pace? A multicentre, randomized control trial (Safespace2).* Heart 2010 Apr; 96(7): 550

Steen G, Fitzgerald K, Maher N, Fallon N, Cunningham C. *Developing a Comprehensive In-patient Falls Prevention Programme in an Acute Hospital Setting: Six Years On.* European Geriatric Medicine 1;Suppl 1: S36-37.

Walsh JB, Lems W, Karras D, Langdahl B, Fahrleitner-Pammer A, Barrett A, Rajzbaum G, Jakob F, Marin F. *Fracture Incidence, Quality of Life and Back Pain in Elderly Women (age>75 years) with Osteoporosis Treated with Teriparatide: 36 Month Results from the European Forsteo Observational Study (EFOS).* J Bone Miner Res 25(Suppl1).

Presentations

Burke et al. (2010)

Perceived health in older adults.

Psychological Society of Ireland Annual Conference, Athlone, Ireland

Collins O, Finucane C, Dillon S, Lawlor B, Kenny RA. *Autonomic Dysfunction in Mild Cognitive Impairment.* EUGMS, Dublin, September, 2010.

Collins O, Finucane C, Dillon S, Lawlor B, Kenny RA. *Orthostatic Hypotension in Mild Cognitive Impairment.* American Autonomic Society, Dublin, November, 2010.

Collins O, Dillon S, Finucane C, Lawlor B, Kenny RA. *Orthostatic Hypotension in Mild Cognitive Impairment.* EUGMS, Dublin, September, 2010.

Collins O, Dillon S, Finucane C, Lawlor B, Kenny RA. *Autonomic Dysfunction in Mild Cognitive Impairment.* American Autonomic Society, Dublin, November, 2010.

Fan CW, Foran T, Cunningham CU, Walsh C, Kenny RA.

Circadian orthostatic blood pressure behaviour in older fallers and non-fallers in their homes: Influence of meals and medications. IGS/EUGMS 29 Sep - 1 Oct 2010, Dublin.

Fan CW, Foran T, Cunningham CU, Greene BR, Ni Scannail C, Kenny RA.

Orthostatic hypotension and postural sway: a possible cause for falls in the morning.

IGS/EUGMS 29 Sep - 1 Oct 2010, Dublin.

Finucane C, Collins O, O' Dwyer C, Hade D, Boyle G, Kenny RA.

Baroreflex Latency: A Role in the Pathophysiology of Carotid Sinus Hypersensitivity? EUGMS, Dublin, September, 2010.

Finucane C, Colgan MP, O'Dwyer C, Fahy C, Collins O, Boyle G, Kenny RA. *Accuracy of Anatomical Landmarks for Locating the Carotid Sinus.* EUGMS, Dublin, September, 2010.

Finucane C, Collins O, O Dwyer C, Hade D, Boyle G, Kenny RA. *Pathological Modulation of Baroreflex Sensitivity and Latency in Carotid Sinus Hypersensitivity.* Cardiotim. Nice, 2010

Finucane C, Collins O, O'Dwyer C, Hade D, Boyle G, Kenny RA

Baroreflex Latency: A role in the pathophysiology of carotid sinus hypersensitivity?

EGM 2010 Sept; 1(1):p.S47

Finucane C, Colgan MP, O'Dwyer C, Fahy C, Collins O, Boyle G, Kenny RA

Accuracy of anatomical landmarks for locating the carotid sinus

EGM 2010 Sept; 1(1):p.S48

Foran T, Setti A, Burke K, Fan CW, Cogan L, Romero-Ortuno R, Kenny R.A., Newell F.N. *The Role Of Ageing On Efficient Spatial Navigation And Gait Velocity.* Gait and Mental Function Conference, Washington 2010

Foran T, Fan CW, Cunningham C, Kenny RA. *Effect Of Aging And Falls On Step Length/Cadence Ratio In A Group Of Community-Living Older Women.* IGS/EUGMS 29 Sep - 1 Oct 2010, Dublin.

Foran T, Ni Scanaill C, Greene B, O'Donovan K, Reilly R, Kenny R.A.
Influence of Gait Speed and Variability on Stability in Fallers
Abstract has been submitted to ICAMPAM Conference, Glasgow 2011

Gallagher D, Ni Mhaolain A, Crosby L, Ryan D, Lacey L, Coen RF, Walsh C, Coakley D, Walsh JB, Cunningham CJ, Lawlor BA. *Self-efficacy, ways of coping and burden in caregivers of patients with Alzheimer's disease and mild cognitive impairment.*
[Poster presentation, International Psychogeriatric Association, International Congress, Santiago de Compostela, Sept 2010 and European Union Geriatric Medicine Society, 6th International Congress, Dublin, Sept-Oct 2010]

Gallagher, D, Ni Mhaolain A, Crosby L, Ryan D, Lacey L, Coen RF, Walsh C, Coakley D, Walsh JB, Cunningham CJ, Lawlor BA. *The relationship between patient dependence and caregiver burden in Alzheimer's disease and mild cognitive impairment.*
[Poster presentation, International Psychogeriatric Association, International Congress, Santiago de Compostela, Sept 2010 and European Union Geriatric Medicine Society, 6th International Congress, Dublin, Sept-Oct 2010]

Greene BR, O'Donovan A, Romero-Ortuno R, Cogan L, Ní Scanaill C, Kenny RA.
Falls risk assessment through quantitative analysis of TUG. AMA-IEEE Medical Technology Conference, 21-23 March 2010, Washington DC

Kenny E, Coakley D, Boyle G. (2010). *Non-contact measurement of ocular microtremor using laser speckle.* SPIE Photonics Europe. Brussels. Proceedings Vol. 7715.

Kenny E, Coakley D, Boyle G. (2010). *Numerical model to simulate a laser speckle correlation method to record ocular microtremor.* BioPhotonics and Imaging Conference (BioPIC) Meath.

O'Dwyer C, Rice C, Hade D, Byrne L, Fan CW, Kenny RA
Amnesia for loss of consciousness in Vasovagal Syncope (VVS)
EGM 2010 Sept; 1(1):p.S39

Prendergast D, Wherton J.
Connecting Communities: Co-designing accessible communication technologies with older adults.
BSG 39th Annual Conference, 6-8 July 2010, Brunel University, West London (1005)
AAL2010 Ambient Assisted Living in Europe: Technology and Innovation for Ageing Well, Malaga, Spain.

Romero-Ortuno, R.
Do older pedestrians have enough time to cross roads in Dublin? A critique of the Traffic Management Guidelines based on clinical research findings.
BGS Spring Meeting, 22-24 April 2010, Edinburgh, Scotland - Best Platform Presentation

Walsh JB. *Bone Anabolism in Clinical Practice: Results from the EFOS Study.* European Calcified Tissue Society Meeting (Glasgow), June 2010.

Accepted:

Garattini, C. et al. *Linking the Lonely: An exploration of a communication technology designed to support social interaction among older adults.* (accepted) Universal Access in the Information Society

McHugh et al.

Living alone does not account for the association between loneliness and sleep in older adults, response to Hawkey et al. 2010. (accepted) Health Psychology.

McHugh et al.

Psycho-social correlates of aspects of sleep quality in community dwelling Irish older adults. (accepted) Aging and Mental Health.

Reviews:

Cardiac causes for falls and their treatment. Cronin H, Kenny RA. Clinics in Geriatric Medicine 2010;26(4):540-567

Book Chapters:

The Demand for Older Workers. Moreira A, Whelan BJ, Zaidi I. Ageing, Health and Pensions in Europe. An Economic and Social Policy Perspective. 2010. Editors Bovenberg, van Soest, Zaidi.

Degrees and Awards

Mohammed al-Kalbani was awarded a PhD for his research on eye contacting methods of OMT measurement in 2010.

Ciarán Finucane Team member Awarded Judges Choice 1st Prize by National Disability Authority for New Service Designed for individuals with arthritis.
<http://www.universaldesign.ie/24challenge>

Partnerships

St. James’s Hospital

Medicine for the Elderly
Psychiatry for the Elderly
Clinical Biochemistry
Clinical Medicine
Haematology
Renal Medicine
Endocrinology
Histopathology
Dementia Services Information and Development Centre

Trinity College Dublin

Department of Medical Gerontology
Department of Psychiatry
Department of Old Age Psychiatry
Department of Psychology
Department of Bioengineering
Department of Mechanical Engineering
Department of Statistics
Department of Sociology
Department of Anatomy
Trinity College Institute for Neurosciences

Tallaght Hospital (AMiNCH)

Age Related Health Care, Adelaide and Meath Hospital incorporating The National Children’s Hospital, Tallaght, Dublin

Department of Psychiatry of Later Life, Adelaide and Meath Hospital incorporating The National Children’s Hospital, Tallaght, Dublin

Royal College of Surgeons in Ireland (RCSI)

Department of Anatomy

St. Patrick’s Hospital

University College Dublin

Conway Institute
Department of Veterinary Medicine