

Deirdre M. Harrington Ph.D.

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**Personal Details:** Postdoctoral Research Fellow, Pennington Biomedical Research Center

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Date of Birth: 29/07/1982 Nationality: Irish

**Education:**

2006 – 2010

**Doctor of Philosophy**

Department of Physical Education and Sport Sciences, University of Limerick

“Objective Assessment and Modification of Physical Activity and Health Indices in Adolescent Females” Supervisor Prof. Alan Donnelly.

External Examiner: Professor John J. Reilly, University of Glasgow, Glasgow, UK.

2001 – 2005

**BSc Sport and Exercise Sciences (Hons)**

Department of Physical Education and Sport Sciences, University of Limerick, Limerick, Ireland

Undergrad dissertation: “Impact of Differing Levels of Physical Education and Physical Activity Provision on Health Related Fitness Levels of 5-12 Year Olds”

**Academic Awards/Funding:**

2010

PEPAYS Research Forum Poster Award (June 2010)

2007

Awarded the “Roadbridge Research Studentship” worth €60,000 for the duration of PhD program which covered stipend, project running costs and travel expenses for conference. This was a widely advertised scholarship specifically for researchers in the Medical area.

**Research Experience:**

**Research Assistant at Mary Immaculate College, Limerick, Ireland**

April-June 2010

“Evaluation of the Irish Heart Foundation’s Bizzy Break Classroom Activity Programme on Physical Activity Levels”

Sept- Dec 2009

“Contribution of Primary School Physical Education to Overall Physical Activity Levels”.

Supervisor: Dr. Elaine Murtagh

June-Aug 2009

**Summer Internship at Iowa State University, Iowa, USA**

Project investigating the utility of various physical activity monitors in simulated free living conditions.

Supervisor: Professor Gregory Welk.

- 2006-2010 PhD research projects. See Research Abstract for more details.
- Two 8-month school-based physical activity interventions for adolescent females highlighted as inactive.
  
  - Two lab based validation and calibration studies of the ActivPAL Physical Activity Logger.
  
  - Cross-section study of the sedentary and physical activity levels of adolescent females in the Limerick city area.

**Teaching Experience (laboratory assistant):**

- Winter 2006, 2007** Physiology of Muscle in Movement (BSc. Sport and Exercise Sciences and BSc. Physiotherapy)
- Spring 2007** Introduction to Biomechanics (BSc. Sport and Exercise Sciences)
- Spring 2008** Psychology of Movement Development: from Infancy to Adolescence (BSc. Sport and Exercise Sciences and BEd. Physical Education)
- Spring 2007, 2008** Introduction to Physiology (MSc. Occupational Therapy and BSc. Biomedical Engineering)
- Winter 2008** Exercise and Health Fitness (BSc. Sport and Exercise Sciences)
- Duties: Preparation of lab manual, teaching labs and tutorials to 30+ students, co-ordinating and grading lab reports, presentations and practical exams and assessments, module administration including keeping attendance and absence records.

**Service to the University:**

- Ethics Committee Served as the Postgraduate rep on the Department Research Ethics Committee
- Undergrad Assistance Guided BSc. Sport and Exercise students in Final Year Dissertation and Sports Applications projects (08/09) and ERASMUS Mundus International students (07/08).

**Memberships and Professional Qualifications:**

- 2009-2012 **Member of the American College of Sports Medicine**
- 2003 **National Certificate in Exercise and Fitness (NCEF Level 1)**
- Irish qualification for fitness instructing and group exercise class teaching. I used this qualification as a part-time Fitness and Exercise Class Instructor in the Castletroy Park Aqua and Fitness Club, Limerick, Ireland (June 2005-Jan 2009).

## **Ph.D Research Abstract**

Physical Activity has been highlighted as one of the main threats to public health of the 21<sup>st</sup> century and it has been reported that adolescents are not meeting physical activity guidelines with females often being highlighted as most 'at risk'. For this reason the Irish Obesity Taskforce Report (2005) recommended the development of "opportunities for physical activity...that concentrate on increasing physical activity among teenage girls".

The purpose of my Ph.D. research was to engage groups of 'at risk' adolescent females (age 15-17 years) in physical activity and lifestyle education interventions which would increase their Moderate to Vigorous Physical Activity and decrease Sedentary activities during and outside of the intervention. Health outcomes were measured along with Physical Activity using 7 day accelerometry (ActivPAL™ Professional Physical Activity Logger).

To assess the effectiveness of the physical activity interventions, accurate and valid measures of physical activity were required. My Ph.D. research used a novel physical activity monitor (ActivPAL) so its validity and usability was investigated with a number of population groups in both lab and free-living situations and calibration equations created.

This Ph.D work comprised of two 8-month interventional studies, two lab based validity studies in UL (and experience of the same at Iowa State), as well as an investigation of the sedentary and physical activity levels in a representative sample of 15-17 year old females in the Mid-West region of Ireland. Another focus was the development of a standardised protocol of good practice using the ActivPAL in adolescent female populations. This resulted in a standard methodology for data collection, reduction, analysis and interpretation which will be reported in the literature. In Ireland, there was a paucity of studies on physical activity intervention and accelerometry use in free-living situations so pending publications will fill a gap in the literature. In an international context my use and analysis of ActivPAL data in relation to physical activity and sedentary levels and patterns will be novel in relation to adolescents. The potential for further publications from the wealth of accelerometry data is relatively unlimited.

### **Publications:**

- Harrington, D., Welk, G., & Donnelly, A. "METs and Step Count in Females Using the ActivPAL Physical Activity Logger." Journal of Sports Sciences [**accepted**].
- Harrington, D., Dowd, K. Donnelly, A. "Objectively Measured Sedentary Patterns on School Days and Weekend Days" Medicine and Science in Sports and Exercise [**in review**].
- Horner, K., Harrington, D., Donnelly, A. & Shafat, A. "The effect of a 7 week exercise intervention on gastric emptying and appetite and association of body mass index with gastric emptying in adolescent girls." European Journal of Clinical Nutrition [**in review**].
- Harrington, D. & Donnelly, A. (2010). "24-Hour Objectively Measured Sedentary Behaviours in Adolescent Females [**abstract**]". Medicine and Science in Sport and Exercise 42(5), S148
- Dowd, K., Harrington, D. & Donnelly, A. (2010). "The Examination of Accelerometer Output: Age/Non-Age Specific Thresholding and Bout Duration [**abstract**]". Medicine and Science in Sport and Exercise 42(5), S337.
- Harrington, D. & Donnelly, A. (2009). "A Physical Activity and Lifestyle Education Intervention in Irish Adolescent Females [**abstract**]". Medicine and Science in Sport and Exercise 41(5), S119.

### **Papers in Preparation:**

- Harrington, D. & Donnelly, A. "Physical Activity Interventions in Irish Secondary Schools".
- Dowd, K., Harrington, D. & Donnelly, A. "Objectively Measured Physical Activity and Fitness Levels in a Representative Sample of Adolescent Females in the Irish Mid West".
- Harrington, D., Martin, C., Katzmarzyk, P. and Others (InSight). "The Relationship Between Objectively Measured Physical Activity and Subjective Measures of Hunger and Satiety".
- Harrington, D. Dowd, K. Donnelly, A. Tudor-Locke, C. "Step Rate Recommendations for 30 minutes of MVPA in Adolescent Females using the ActivPAL".

### **Selected Conference Presentations:**

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| June 2010  | <b>Oral and Poster Presentation at the PE PAYS Research Forum: A Shared Vision for PE, Physical Activity and Youth Sport</b> University of Limerick<br>"Sedentary Levels and Patterns of a Cross-Section of Adolescent Females" |
| June 2010  | <b>Poster Presentation at the American College of Sports Medicine Annual Meeting and World Congress on Exercise is Medicine</b> Baltimore, MD.<br>"24-Hour Objectively Measured Sedentary Behaviour in Adolescent Females"      |
| March 2010 | <b>Oral Presentation at the 2010 Physical Activity Measurement Satellite Meeting.</b> Bath, UK<br>"The Measurement of Sedentary Levels using the ActivPAL™"   |

May 2009

**Poster Presentation at the American College of Sports Medicine  
Annual Meeting** Seattle, Washington, USA

“A Physical Activity and Lifestyle Education Intervention in Irish  
Adolescent Females”

July 2008

**Oral Presentation at the European College of Sports Science  
Annual Conference** Estoril, Portugal

“Comparison of two Physical Activity Monitors in Measuring Energy  
Expenditure in Females During Walking”