



# Walking In Schools (WISH) Study

Dr Maria O'Kane

**Chief Investigators:** Prof Marie Murphy & Prof Alison Gallagher





# Background



# Making Life Better



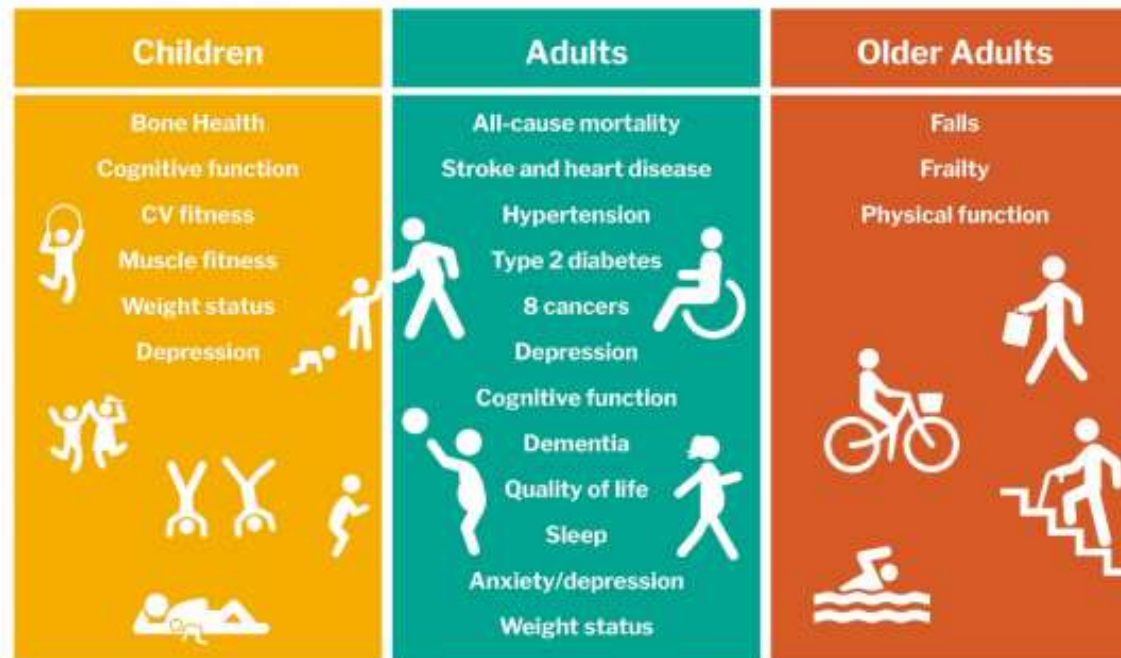
- The WISH Study is aligned to the “Giving Every Child the Best Start” and “Empowering Healthier Living” themes of the Making Life Better Strategy
- It is an initiative which encourages and engages young people in sport and leisure activities which may impact on physical and mental health and wellbeing
- As one of the CHITIN Project studies, we are building capacity for research and strengthening the evidence base relating to public health issues will be vital to secure health benefits across all socioeconomic groups in the future
- We are also working to strengthen collaboration between Northern Ireland and the Border Counties of Ireland.



# Physical activity and health

*Regular physical activity is associated with many physiological and mental health benefits for adolescents<sup>[1]</sup> including:*

## Moderate or strong evidence for health benefit



# Physical activity and health



- Physical inactivity is the fourth leading cause of global mortality<sup>[1]</sup>
- ~6–10% of all deaths from non-communicable diseases are attributable to physical inactivity, and this figure is substantially higher for specific diseases (e.g. 30% for ischemic heart disease)<sup>[2]</sup>
- Overweight and obesity in childhood are known to have significant impact on both physical and psychological health and is associated with increased risk of morbidity and mortality in later life<sup>[3]</sup>
- Promotion of physical activity at a population level is a key focus for public health



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kite-tin  
Cross-border  
Healthcare Intervention Trials  
in Ireland Network

1. Kohl HW (2012) Lancet, **380**, 294-305.
2. Lee et al (2012) Lancet, **380**, 219-229.
3. Franks et al (2010) N Engl J Med, **362**, 485-493.

**Interreg**   
Northern Ireland - Ireland - Scotland  
European Regional Development Fund

**HSC** Public Health  
Agency  
Research and Development

**HRB** Health  
Research  
Board



INDEPENDENT

News > UK > Home News

# Lack of physical activity among girls leading to poor mental health and low aspirations, warn experts

The Telegraph

News > Global Health

# Four in five teenagers not doing enough exercise, says WHO as it blames 'electronic revolution'

The Telegraph

# Girls put off exercise for life by PE lessons

The Washington Post  
*Democracy Dies in Darkness*

# Teenagers are as sedentary as 60-year-olds by age 19

BBC Your account News Sport Weather iPlayer Sounds

NEWS Home UK World Business Politics Tech Science Health Family & Education

Health

'Global epidemic' of childhood inactivity

theguardian

# Boys do more exercise than girls, research finds

BBC Sign in News Sport Weather iPlayer Sounds

NEWS Home UK World Business Politics Tech Science Health Family & Education

Family & Education Young Reporter Global Education

Inactive children 'become middle-aged couch potatoes'

THE IRISH TIMES

# Research finds almost two-thirds of Irish teenagers do no exercise

THE CONVERSATION

Academic rigour, journalistic flair

Arts + Culture Business + Economy Cities Education Environment + Energy Health + Medicine Politics

# Six ways to get teenagers more active – suggested by the teens themselves

March 22, 2018 10:20am GMT

# Physical activity during adolescence

- Globally, many children fail to meet current guidelines of 60 minutes of physical activity per day
  - It is estimated that on the island of Ireland only 14% of post-primary school children meet the current recommendations<sup>[1]</sup> and girls typically have lower levels of PA than boys<sup>[2]</sup>
- Physical activity levels decline as children move into adolescence<sup>[1]</sup> and through to adulthood<sup>[3]</sup>.
- This decline is most pronounced among adolescent girls<sup>[4]</sup> where the average annual reduction in total physical activity from the age of 5 to 18 years is 4.2%<sup>[5]</sup>.
- Importantly, physical activity habits adopted during adolescence track into adulthood<sup>[6,7]</sup> and may affect the likelihood of developing many chronic health conditions.

1. Harrington et al (2016) J Phys Act Health, **13**, S186-S188.
2. World Health Organisation (2006) Physical activity and health in Europe: evidence for action.
3. Allison et al (2007) Can J Public Health, **98**, 97–100.
4. Metcalf et al (2015) Med Sci Sports Exerc, **47**, 2084–92.
5. Cooper et al (2015) Int J Behav Nutr Phys Act, **12**, DOI: 10.1186/s12966-015-0274-5
6. Telama (2009) Obes Facts, **2**, 187–95.
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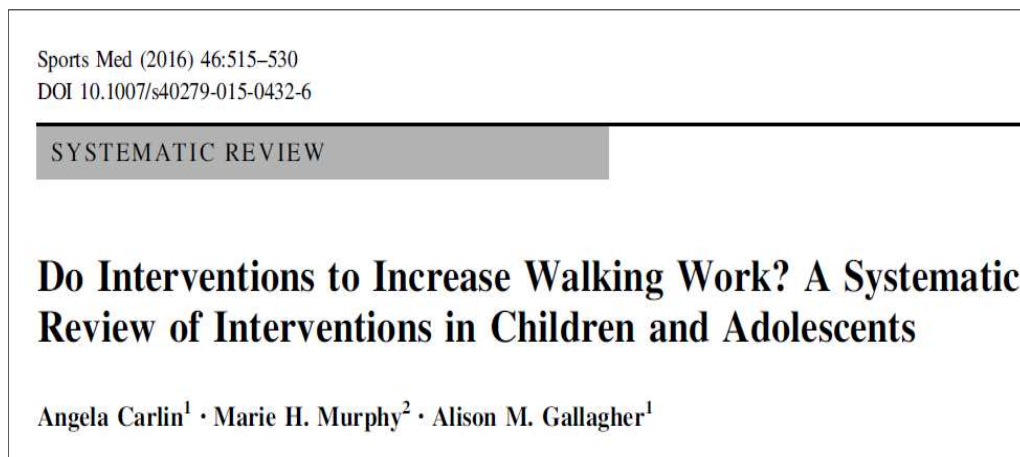


# WISH Study: Development





# Development of the WISH intervention



- Focus group discussions with n62 adolescents
- Friends and peers have an influence on physical activity behaviour
- Walking was discussed as an option to promote physical activity
- Important considerations for successful interventions:
  - No change of clothes required
  - Performed with friends
  - Takes place during the school day
- Walking interventions, particularly those conducted in the school environment, have the potential to increase physical activity in children and adolescents
- Limited number of interventions conducted to date and many where of short duration
- Further research targeted at sub-groups (e.g. adolescent girls and overweight/obese children), is warranted

# WISH Feasibility Study

## Aim

To investigate the feasibility of a peer-led brisk walking intervention and to investigate the impact of participating in a 12-week school-based walking programme on school-time physical activity and sedentary behaviour.

## Methods

- WISH: pilot study of a school-based clustered randomised controlled trial
- The WISH study was delivered over a 12-week period (March to June 2014)
- Participants were provided with the opportunity to attend a number of structured 10–15-min walks spread across the school week before the first bell, at mid-morning break and at lunch time.
- These walks were led by older pupils (aged 15–17 years) trained as walk leaders.

## Results

- A total of 199 girls participated (6 schools)
- Light intensity physical activity and total physical activity ↑
- Sedentary behavior ↓
- A school-based walking programme may have the potential to increase light intensity PA by 45 min across the school week
- The pilot study highlighted the feasibility of incorporating peer-led walks within the school day

RESEARCH

Open Access



## Effects of a peer-led Walking In Schools intervention (the WISH study) on physical activity levels of adolescent girls: a cluster randomised pilot study

Angela Carlin<sup>1\*</sup>, Marie H. Murphy<sup>2</sup>, Alan Nevill<sup>3</sup> and Alison M. Gallagher<sup>1</sup>

**Table 2** Objectively measured habitual school-time<sup>a</sup> physical activity and sedentary behaviour for intervention and control groups at baseline (T0) and week 12 (T1)

Time (min/day)	T0		T1		Change (95% CI)	p value <sup>b</sup>
	Mean	SD	Mean	SD		
Sedentary <sup>c</sup>						
Control <sup>d</sup>	310.30	24.85	308.31	38.22	-1.99 (-11.06–6.80)	0.013
Intervention <sup>d</sup>	325.13	21.80	316.31	24.28	-8.82 (-13.99– -3.64)	
Light PA <sup>c</sup>						
Control	118.56	20.32	116.42	21.83	-2.14 (-6.73–2.45)	0.018
Intervention	104.84	18.96	113.11	23.10	8.27 (3.22–13.32)	
Moderate PA <sup>c</sup>						
Control	16.80	6.39	19.84	7.91	3.05 (1.64–4.44)	0.122
Intervention	15.57	5.92	17.61	5.62	2.04 (0.52–3.57)	
Vigorous PA <sup>c</sup>						
Control	5.34	4.16	6.42	6.05	0.89 (-0.24–2.37)	0.071
Intervention	5.12	3.86	3.97	3.15	-1.15 (-2.03– -0.26)	
Total PA <sup>c</sup>						
Control	140.52	24.85	142.67	28.64	1.24 (-3.88–7.82)	0.007
Intervention	125.52	22.00	134.69	24.28	9.17 (3.92–14.41)	

PA Physical activity

<sup>a</sup>School-time filter (08:30–16:00)

<sup>b</sup>Differences between groups compared using mixed between-within subjects ANOVA

<sup>c</sup>Evenson cut-points [35]

<sup>d</sup>Participants with ≥ 3 days valid wear included in analysis (n = 65 control, n = 52 intervention)

# WISH Study Development & PPI

Involving the public is intended to benefit research by ensuring:

- ✓ Research is relevant
- ✓ Conducted in an appropriate ethical manner
- ✓ Research is “participant friendly”
- ✓ Results of the research project are accessible
- ✓ Increased likelihood of recruitment
- ✓ Improved participant retention



Bagley et al. (2016) A patient and public involvement (PPI) toolkit for meaningful and flexible involvement in clinical trials – a work in progress. *Res Involv Engagem*)

## Timeline of WISH Study PPI activities:

**Feasibility study (2014)**

Study design

Post study intervention

**Full trial (2019-2022)**

Study design

During the intervention

Post intervention



# WISH Study: Main Trial



# WISH Trial Team



## Co-Chief Investigators:

Prof Marie Murphy  
Prof Alison Gallagher

## Co-Investigators:

Dr Angela Carlin  
Dr Maria Faulkner  
Dr Ian Lahart  
Prof Russ Jago

## Trial Manager:

Dr Maria O'Kane

## Study Support Assistant:

Yolande Butcher

## PhD Researcher:

Jordan Kavanagh

## Placement Students:

Naomi Bell  
Jordan Fleming



This aim of this study is to evaluate the effectiveness of a peer-led school-based walking intervention, delivered across the school year, at increasing physical activity levels of adolescent girls in schools within NI and the border counties of Ireland.



# Recruitment

## School recruitment (2 phases 2019/2020 and 2020/2021):

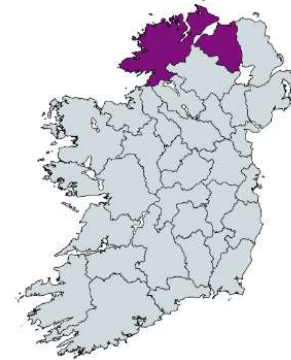
Post-Primary Schools in Co. Donegal & Co. L'Derry  
(ROI: >240 girls NI: >80 girls in Y9&10)

18

X



IN



## Participant recruitment:

Within each school, at least 24 girls aged 12-14 years will be recruited (minimum of 432 girls in total).

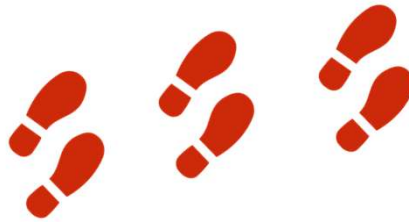
## Randomisation:

After data collection, schools will be allocated to control (usual physical activity;  $n=9$ ) or intervention (peer-led walking programme;  $n=9$ ) using opaque envelopes. Randomisation will be stratified by country.

# Intervention



Sixth form pupils will be trained as walk leaders



Leaders will set the pace of the walk and ensure the safety of pupils



Pupils will be invited to participate in 10-15 min walks before school and at break and lunch



All walks will occur in school grounds and pupils will be encouraged to participate in many walks as possible each week



Reward cards stamped for each walk completed and exchanged for small rewards with low monetary value (€2/£2)



The intervention will be delivered for the whole school year (20-22 weeks)



# Outcomes

*Data will be collected at baseline, mid-intervention, end of the intervention and at 13-month follow up*

*Primary Outcome:* Total physical activity (counts per minute) of pupils at the end of the intervention measured using the Actigraph GT3X accelerometer.



*Secondary Outcomes:*

- Time spent in sedentary behaviour, light, moderate & vigorous intensity PA
- % of pupils meeting current PA recommendations
- Body Mass Index (BMI)
- Waist and hip circumference (waist-to-hip ratio)
- Coping, resilience and cognitive reappraisal
- Sleep quality, duration and efficiency
- Social media use, social integration & connection to social media



*Process Evaluation:*

To enable an accurate interpretation of study outcomes, a mixed-methods process evaluation will be undertaken.



# Where are we now?



# April 19 – February 20

## Phase 1:

- 9 schools recruited (4 ROI & 5 NI)
- n281 participants have been recruited
- n72 walk leaders have been trained
- Focus groups have been held in 9 schools



# Walking In ScHools (WISH) Study

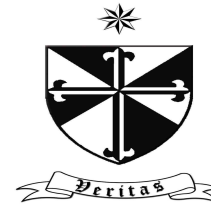


# Acknowledgements



# Acknowledgements

## Phase 1 Schools:



## Collaborators:

- Lesley Findlay (Western Health & Social Care Trust)
- Fiona Kelly & John Andy Bonar (LYIT)
- John Donnelly (Department of Education)
- Collette Broly (Public Health Agency)
- Anne McAteer (Health Service Executive)
- Myles Sweeney (Donegal Sports Partnership)

## Funders:



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**Thank you for your kind attention!**

