



# **INDEEP MSCA Doctoral Network**

Dr Kieran Dowd

*Technological University of the Shannon, Athlone, Ireland*



# Session Objectives

- Overview of INDEEP origins
- Describe the INDEEP Doctoral Network
  - Overview of Work Packages
  - Overview of Doctoral Candidate positions
- Highlight how Doctoral Candidates contribute to Work Packages

# Story so far!



Dec 2013 – Dec 2016



Feb 2024 – Feb 2028



**DE-PASS**

COST Action CA19101

Oct 2020 – Oct 2024



# INDEEP Doctoral Network

“To advance the state-of-the-art, while also develop a new generation of researchers for Europe to progress effective, determinant informed Physical Activity Behaviour research into the future through an ambitious and innovative INDEEP programme.”



# MSCA Doctoral Networks

## Research

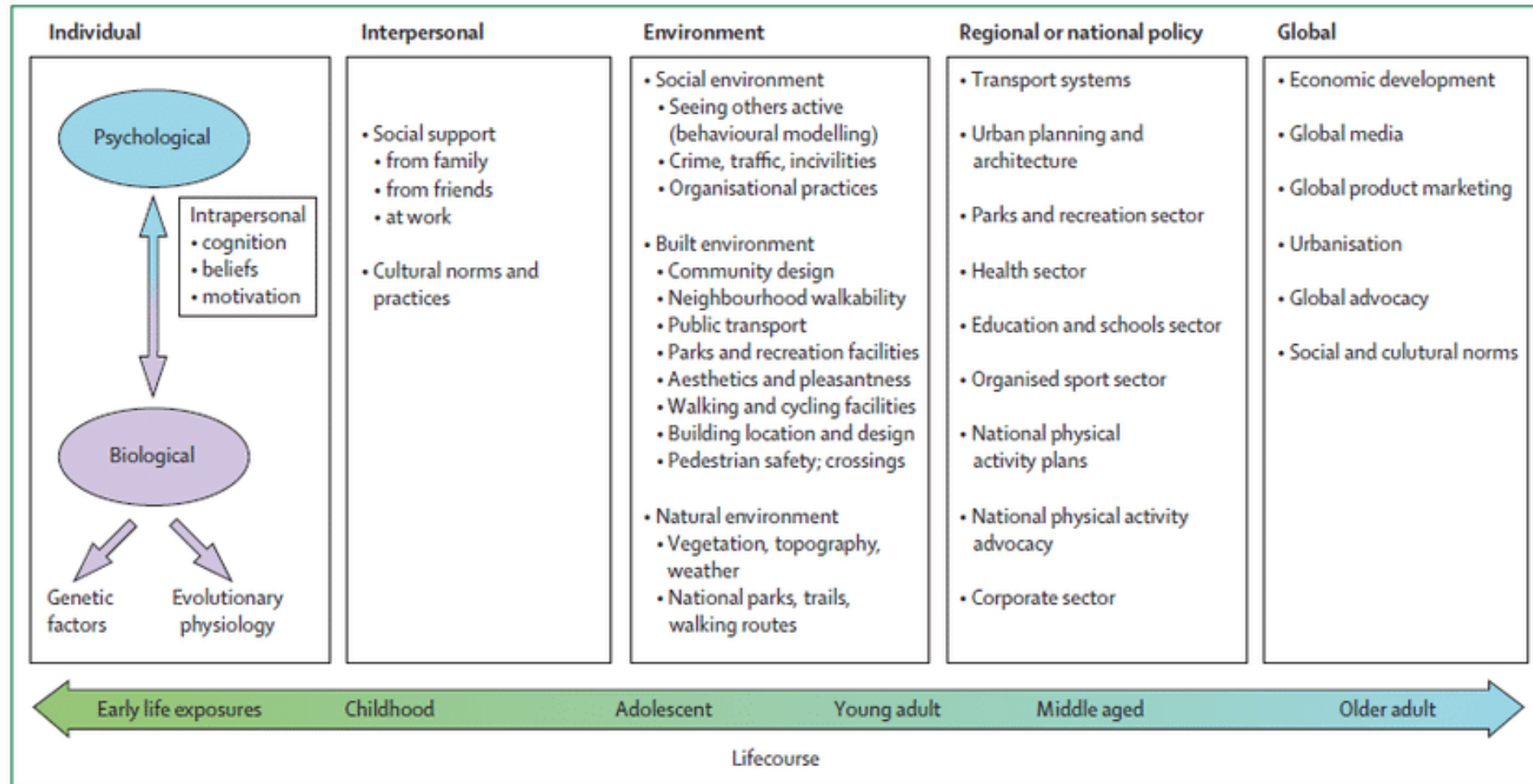
- Advancing the State-of-the-art
- Innovation
- Respond to key academic questions

## Training

- Transferable and discipline specific
- Multi and inter-disciplinary
- Enhance employability (e.g., commercialisation, IP Rights)



# Concept Origination



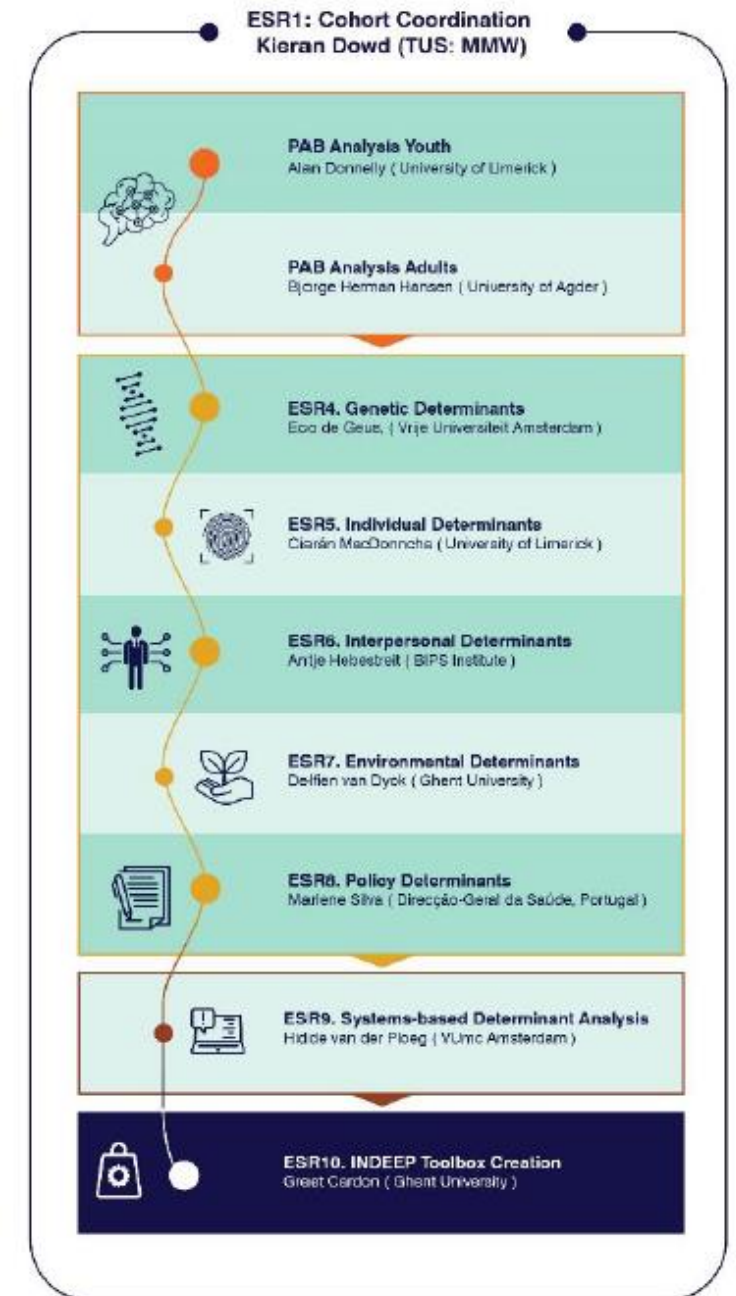
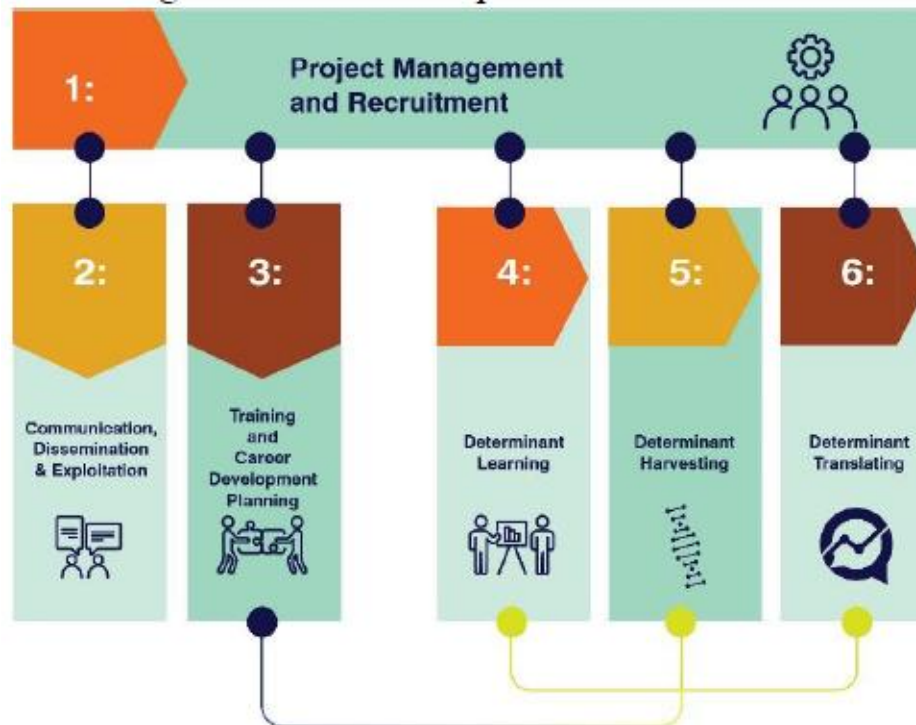




# Marie Skłodowska-Curie Actions Doctoral Network

“INDEEP”

INtervention on the DEterminants of, and EXpertise in, Physical activity behaviours





# “The design and evaluation of a harmonized cross-European data collection study for the examination of Physical Activity Behaviours and their determinants in youth”



Dr Kieran Dowd  
INDEEP Co-Ordinator  
Technological University of the Shannon, Athlone,  
Ireland  
*Doctoral Candidate #1 Supervisor*

Dr Aoife Lane  
Technological University of the Shannon,  
Athlone, Ireland



Prof Bjorge Herman Hansen  
University of Agder, Kristiansund, Norway.



Dr Hidde van der Ploeg  
Amsterdam University Medical Centre,  
Amsterdam, Netherlands.







# “The development of algorithms for activity classification of Physical Activity Behaviours from a novel, cost-effective activity monitor in youth ”



Prof Alan Donnelly  
University of Limerick, Limerick, Ireland.  
Doctoral Candidate #2 Supervisor



Prof Pepijn van de Ven  
University of Limerick, Limerick, Ireland.



Prof Bjorge Herman Hansen  
University of Agder, Kristiansund, Norway.



Dr Kieran Dowd  
Technological University of the Shannon,  
Athlone, Ireland



Prof Elin Kolle  
Norwegian School of Sport Sciences, Oslo,  
Norway.



Kasper Lykkegaard  
Founder and CEO, SENS Motion, Copenhagen,  
Denmark.



# “Developing and standardizing methods for collecting and processing data on device-measured physical activity in family settings across countries”



Prof Bjarne Herman Hansen  
University of Agder, Kristiansund,  
Norway.  
Doctoral Candidate #3 Supervisor



Prof Elin Kolle  
Norwegian School of Sport Sciences, Oslo,  
Norway.



Prof Alan Donnelly  
University of Limerick, Limerick, Ireland.



Kasper Lykkegaard  
Founder and CEO, SENS Motion, Copenhagen,  
Denmark.

Dr Kieran Dowd  
Technological University of the Shannon,  
Athlone, Ireland





# “Genetic Determinants of Physical Activity Behaviors in European youths ”



Prof Eco de Geus  
Vrije University Amsterdam, the  
Netherlands.  
Doctoral Candidate #4 Supervisor



Prof Meike Bartels  
Vrije University Amsterdam, the Netherlands.



Dr Ronja Foraita  
Leibniz Institute for Prevention Research and  
Epidemiology - BIPS, Bremen, Germany.



Dr Erik Ehli  
Avera Genetics, South Dakota, USA.





# “Individual determinants of physical activity behaviours in Irish and European youths”



Prof Elaine Murtagh  
University of Limerick, Limerick, Ireland.

Prof Greet Cardon  
Ghent University, Ghent, Belgium.



Prof Eco de Geus  
Vrije University Amsterdam, the  
Netherlands.



Dr Scott Rosas  
Concept Systems Inc, New York, USA.



Dr Ciarán MacDonncha  
University of Limerick, Limerick, Ireland.  
Doctoral Candidate #5 Supervisor





# “Interpersonal determinants of physical activity in youth”



Dr Christoph Buck  
Leibniz Institute for Prevention Research and  
Epidemiology - BIPS, Bremen, Germany.

Dr Hidde van der Ploeg  
Amsterdam University Medical Centre,  
Amsterdam, Netherlands.



Thomas Kaessler  
Managing Director, Bremer Sportjugend,  
Bremen, Germany.



Dr Antje Hebestreit  
Leibniz Institute for Prevention Research and  
Epidemiology - BIPS, Bremen, Germany.  
Doctoral Candidate #6 Supervisor





# “Time- and context-dependency of environmental determinants of physical activity in European youth”



Dr Sofie Compernelle  
Ghent University, Ghent, Belgium.

Prof Nico Van de Weghe  
Ghent University, Ghent, Belgium.



Prof Alan Donnelly  
University of Limerick, Limerick, Ireland.



Professor Basile Chaix  
Director of Research INSERM, Paris,  
France.



Kasper Lykkegaard  
Founder and CEO, SENS Motion, Copenhagen,  
Denmark.



Prof Delfien van Dyck  
Ghent University, Ghent, Belgium.  
Doctoral Candidate #7 Supervisor





# “Policy determinants of Physical Activity Behaviors in European youth”



Prof Antonio Palmeira,  
University of Lusofona, Lisbon, Portugal.

Prof Greet Cardon  
Ghent University, Ghent, Belgium.



Dr Ciarán MacDonncha  
University of Limerick, Limerick, Ireland.



Prof Delfien van Dyck  
Ghent University, Ghent, Belgium.



Prof Marlene Nunes Silva  
Director of the National Program for Physical  
Activity Promotion, PDGH.  
Doctoral Candidate #8 Supervisor





# “A systems-based evaluation of PABs in youth and their families: a harmonised cross-European multicentre evaluation”



Prof Karien Stronks,  
Amsterdam University Medical Centre, Amsterdam,  
Netherlands.

Dr Kieran Dowd  
Technological University of the Shannon,  
Athlone, Ireland



Prof Delfien van Dyck  
Ghent University, Ghent, Belgium.



Dr Hidde van der Ploeg  
Amsterdam University Medical Centre,  
Amsterdam, Netherlands.  
Doctoral Candidate #9 Supervisor



# “Combining determinant systems, theories and co-creation for effective intervention development in Physical Activity Behaviours”



Prof Maite Verloigne,  
Ghent University, Ghent, Belgium.

Dr Hidde van der Ploeg  
Amsterdam University Medical Centre,  
Amsterdam, Netherlands.



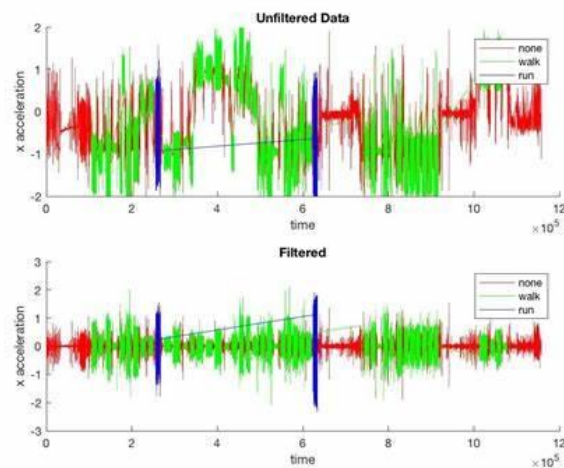
Dr Ragnar van Acker  
Flanders Institute for Healthy Living, Belgium.



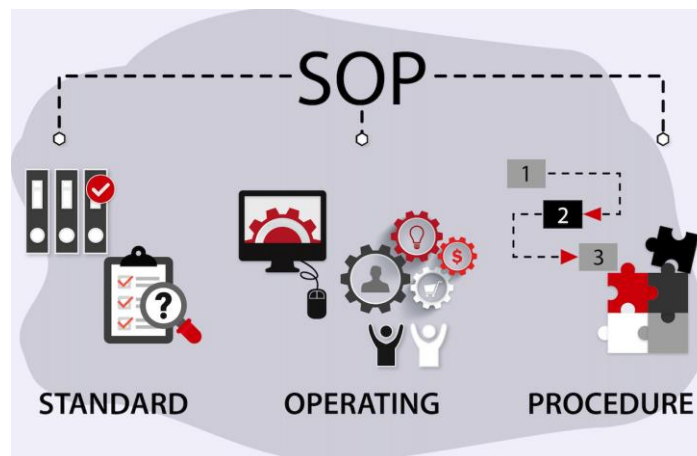
Prof Greet Cardon  
Ghent University, Ghent, Belgium.  
Doctoral Candidate #10 Supervisor



# Determinant Learning



## Literature Review



## ESR1: Cohort Coordination Kieran Dowd (TUS: MMW)

### PAB Analysis Youth

Alan Donnelly (University of Limerick)

### PAB Analysis Adults

Bjorge Herman Hansen (University of Agder)

### ESR4: Genetic Determinants

Eco de Geus (Vrije Universiteit Amsterdam)

### ESR5: Individual Determinants

Clairín MacDonncha (University of Limerick)

### ESR6: Interpersonal Determinants

Anje Hebesreit (BIPS Institute)

### ESR7: Environmental Determinants

Deffen van Dyck (Ghent University)

### ESR8: Policy Determinants

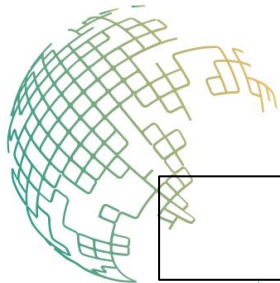
Mariene Silva (Direcção-Geral da Saúde, Portugal)

### ESR9: Systems-based Determinant Analysis

Hilde van der Ploeg (VUmc Amsterdam)

### ESR10: INDEEP Toolbox Creation

Griet Cardon (Ghent University)



## Determinant Harvesting



REPORT ON PHYSICAL ACTIVITY 2018-2030

**MORE ACTIVE  
PEOPLE FOR  
A HEALTHIER  
WORLD**



### ESR1: Cohort Coordination Kieran Dowd (TUS: MMW)

#### PAB Analysis Youth

Alan Donnelly (University of Limerick)

#### PAB Analysis Adults

Bjorge Herman Hansen (University of Agder)

#### ESR4: Genetic Determinants

Eco de Geus (Vrije Universiteit Amsterdam)

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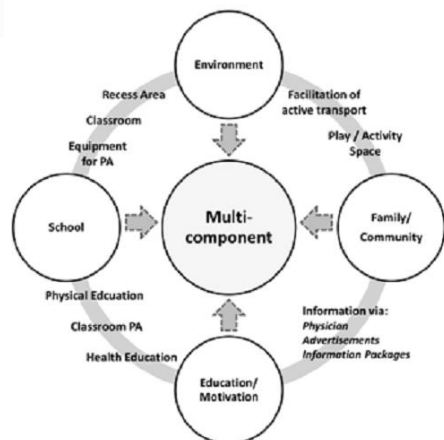
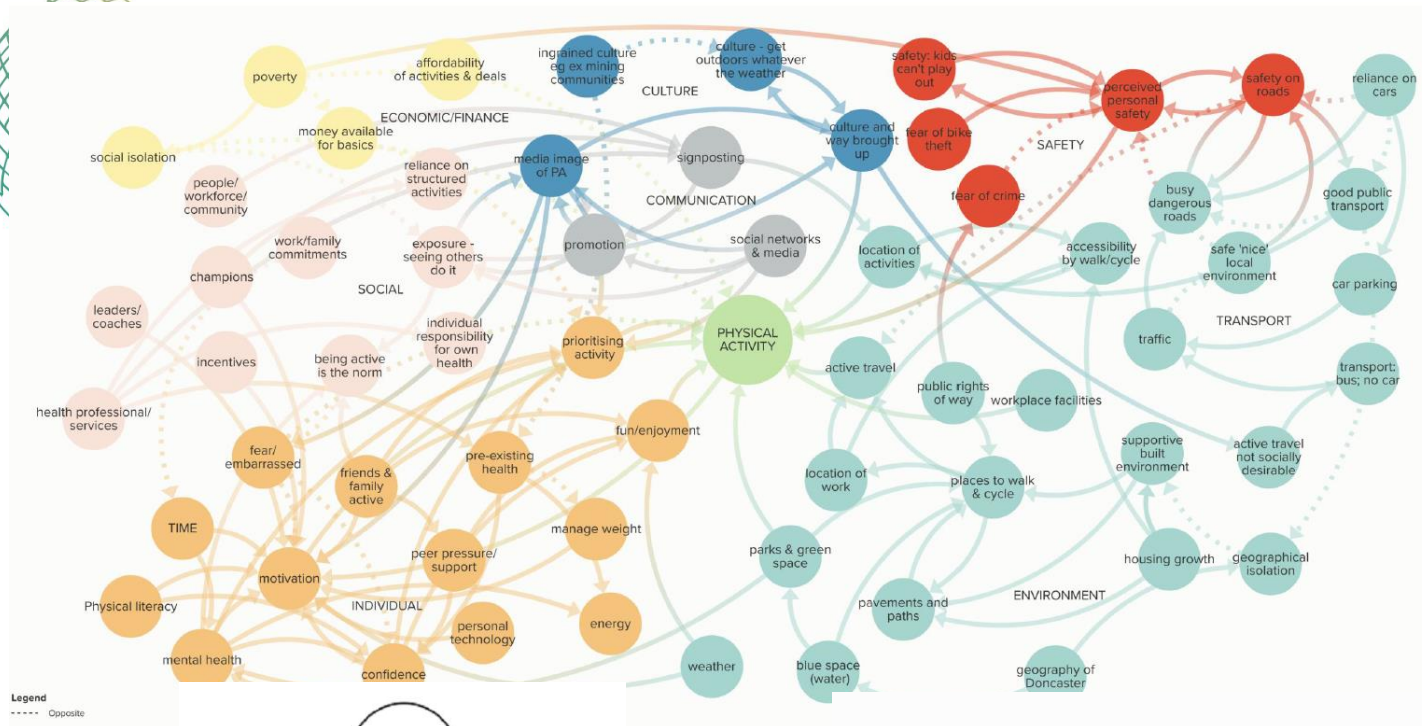
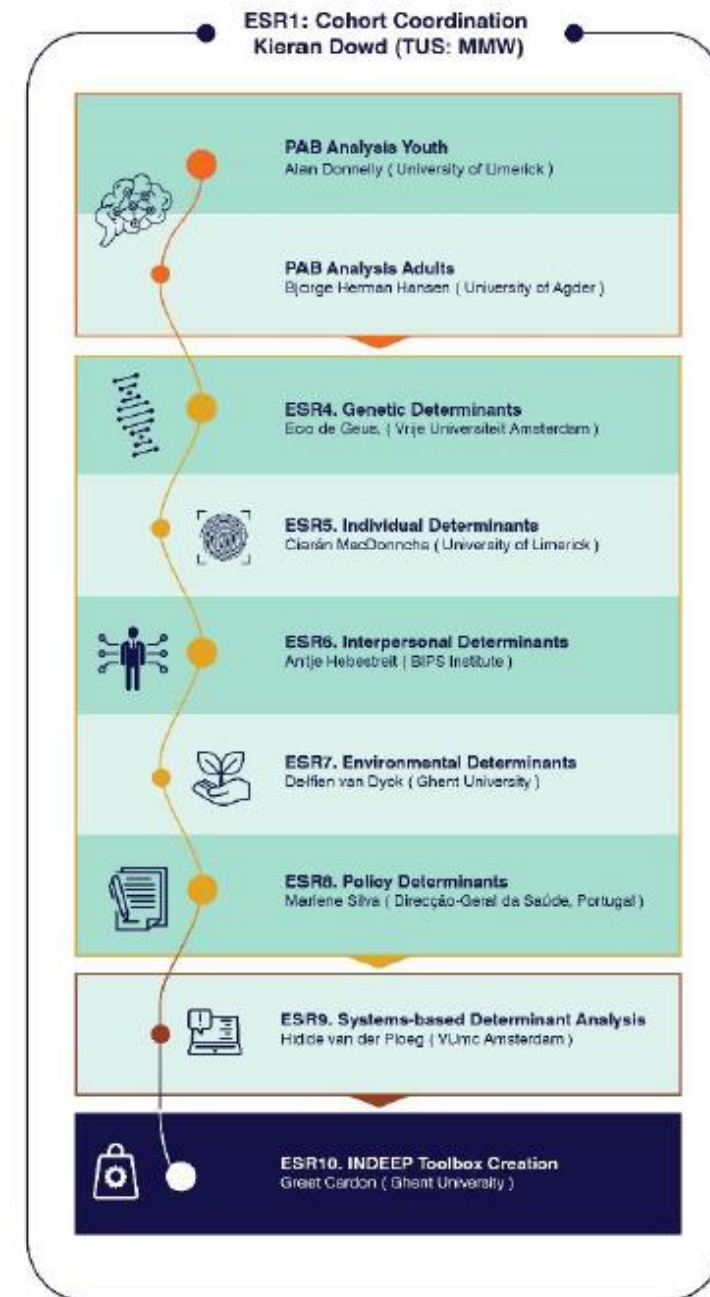


Figure 1: Structural framework for different intervention strategies

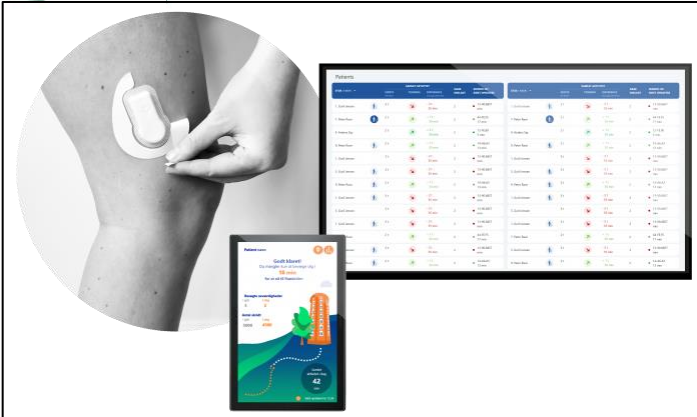


## Determinant Translating





# INDEEP Data Collection



## Physical Activity Behaviours

SENS Data for Index Child  
(Parents x2, Sibling x1 + 1 Other)

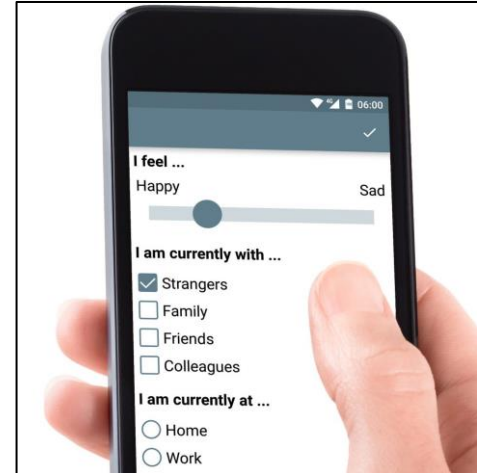


Index Child



## Individual and Interpersonal Determinants

Index Child + Primary  
Caregiver (Parent/Guardian)  
Some Environmental



**Smartphone +  
Geolocation via GPS**  
Index Child



## DNA Samples

Index Child + Parents (x2)



## Policy Determinants

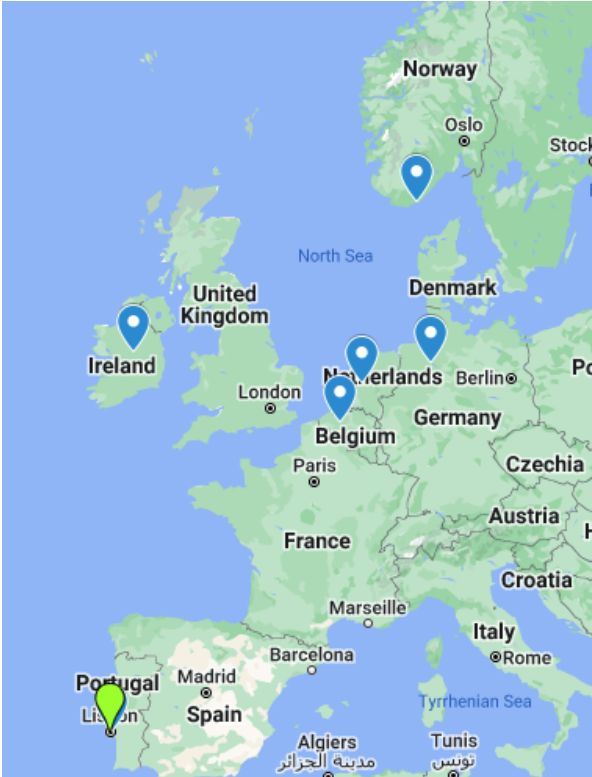
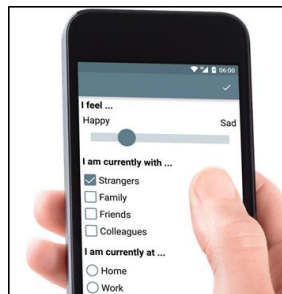
Local (i.e., School, Sport  
Clubs)  
Regional (Municipalities)  
National (Governmental)



# INDEEP Data Collection

- **Target Index Child:**

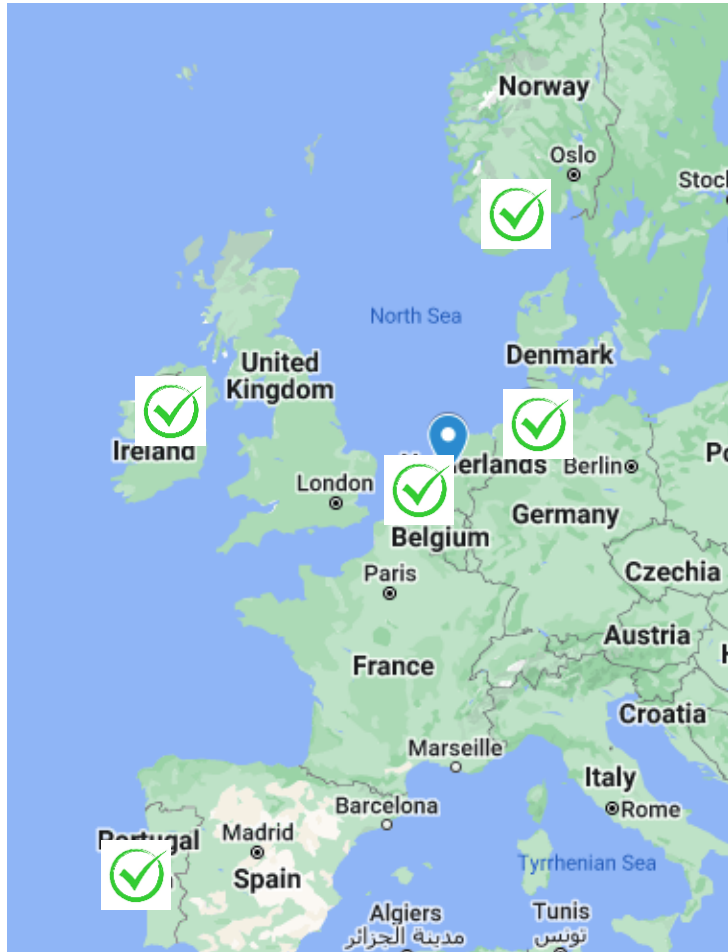
- Aged 12-14 years (DE-PASS 9-11 years)
- Total of 300 Index Children
- Recruitment
- Data collection duration = 8-10 weeks (approximately 1-2 days per week)





# Proposal

## INDEEP Data Collection Sites



✓ Athlone, Ireland (DC1)

✓ Kristiansand, Norway (DC3)

✓ BIPS, Germany (DC6)

✓ Gent, Belgium (DC7)

✓ Lisbon, Portugal (DC8)



# INDEEP Doctoral Network

## Beneficiaries



Leibniz Institute  
for Prevention Research and  
Epidemiology – BIPS



UNIVERSITY OF  
LIMERICK  
OLLSCOIL LUIMNIGH



VRIJE  
UNIVERSITEIT  
AMSTERDAM



UNIVERSITEIT  
GENT



Amsterdam UMC  
Universitair Medische Centra



UiA  
Universitair  
Amsterdam

## Associated Partners



Inserm  
La science pour la santé  
From science to health



DGS  
desde 1899  
Direção-Geral da Saúde



Institute for  
Human Genetics



Concept Systems  
INCORPORATED



Centraal Bureau  
voor de Statistiek



Bremer  
Sportjugend



NORGES IDRETTSHØGSKOLE  
NORWEGIAN SCHOOL OF SPORT SCIENCES





# INDEEP Project Manager

- Supporting the administration of INDEEP
- Supporting organisation of Doctoral Candidates (i.e. secondments)
- Supporting WP leads with deliverables
- Supporting Doctoral Candidates and Supervisors with MSCA requirements