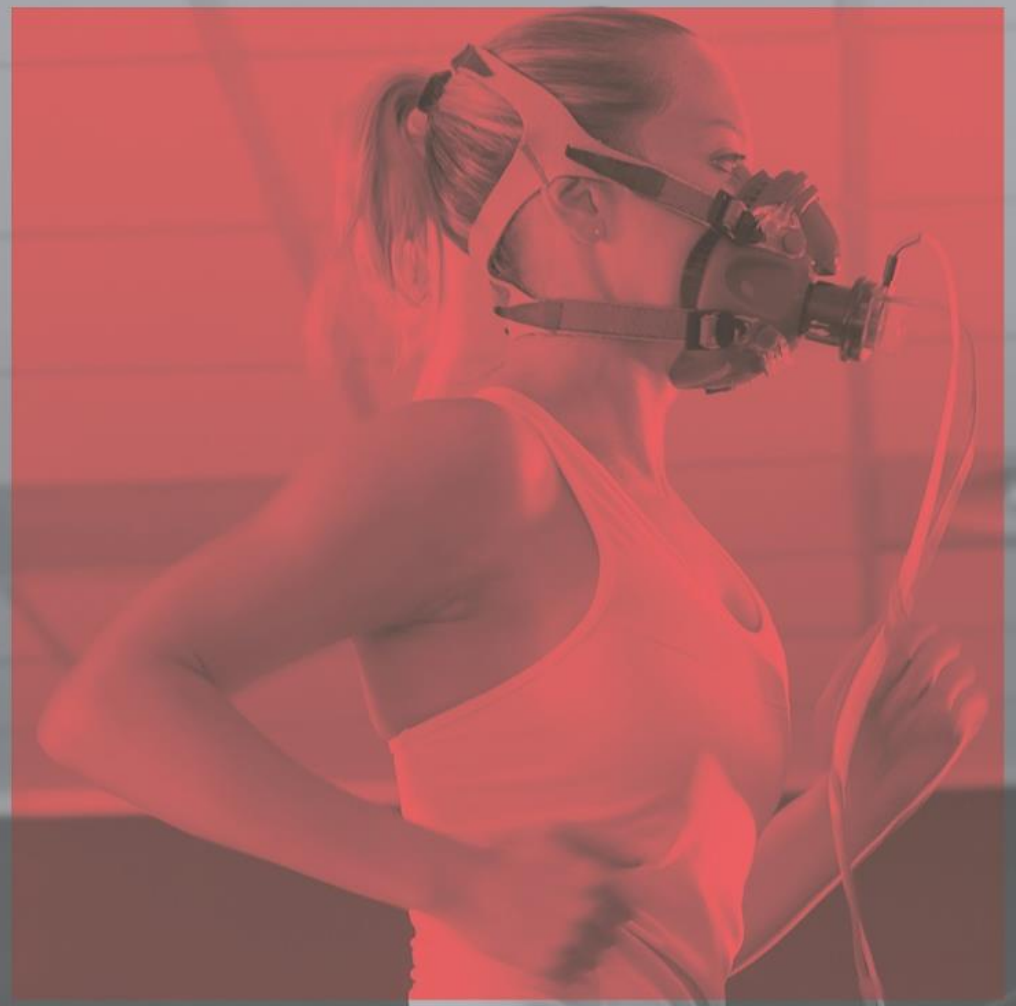
ISEH INSTITUTE OF SPORT EXERCISE & HEALTH



UCL SPORT EAST

Dr Flaminia Ronca, Sport East, UCL East

ISEH INSTITUTE OF SPORT EXERCISE & HEALTH

UCL

- 1 of 12 **International Olympic Committee** (IOC) centres
- Bringing **Sport and Exercise Medicine (SEM)** to the **NHS**
- Driving **Education and Research** in SEM
- **Athlete care**, from elite to amateur
- **Promoting health** in the general population

INTERNATIONAL OLYMPIC COMMITTEE

The ISEH is a partnership between

BRITISH OLYMPIC ASSOCIATION

ENGLISH INSTITUTE OF SPORT

HCA Healthcare UK

UCL

University College London Hospitals NHS Foundation Trust

National Centre for Sport & Exercise Medicine
Working for Health & Wellbeing

ISEH INSTITUTE OF SPORT EXERCISE & HEALTH

Current UCL Sport provision at the ISEH

BSc Sport and Exercise Medical Sciences

iBSc Sport and Exercise Medical Sciences

MSc Sport Medicine, Exercise and Health

MSc Performing Arts Medicine

PhD research in Sport Medicine, Orthopaedics, Exercise Neuroscience and allied specialties

RESEARCH

Driving research that targets local needs

EDUCATION

Upskilling professionals

SOCIAL IMPACT

Partnering with the local community

RESEARCH

EDUCATION

SOCIAL IMPACT

UCL BRAIN SCIENCES

UCL MATH & PHYS SCI

UCL Engineering

UCL Institute of Education

UCL SCHOOL OF MANAGEMENT

UCL Dental Public Health

UCL Arts and Sciences

Global Disability Innovation Hub

UCL Social & Historical Sciences

UCL FACULTY OF MEDICAL SCIENCES

ACTIVE MOVEMENT

METROPOLITAN POLICE

Greenhouse Sports

BLUELIGHT CYCLE CLUB

street games

BRITISH OLYMPIC ASSOCIATION

ENGLISH INSTITUTE OF SPORT

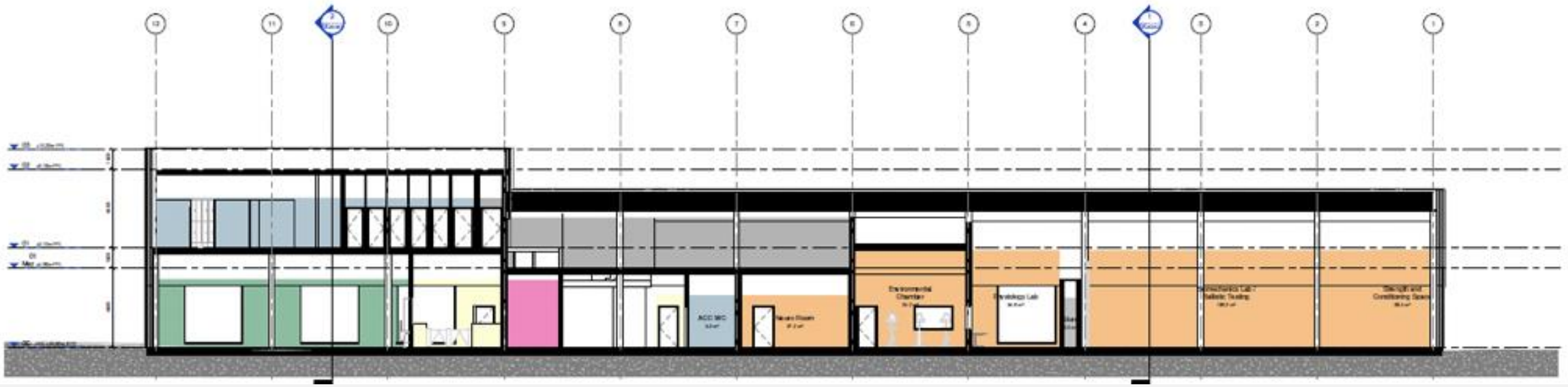
NHS University College London Hospitals NHS Foundation Trust

uk sport inspire the nation

ISEH INSTITUTE OF SPORT EXERCISE & HEALTH

SPORT EAST

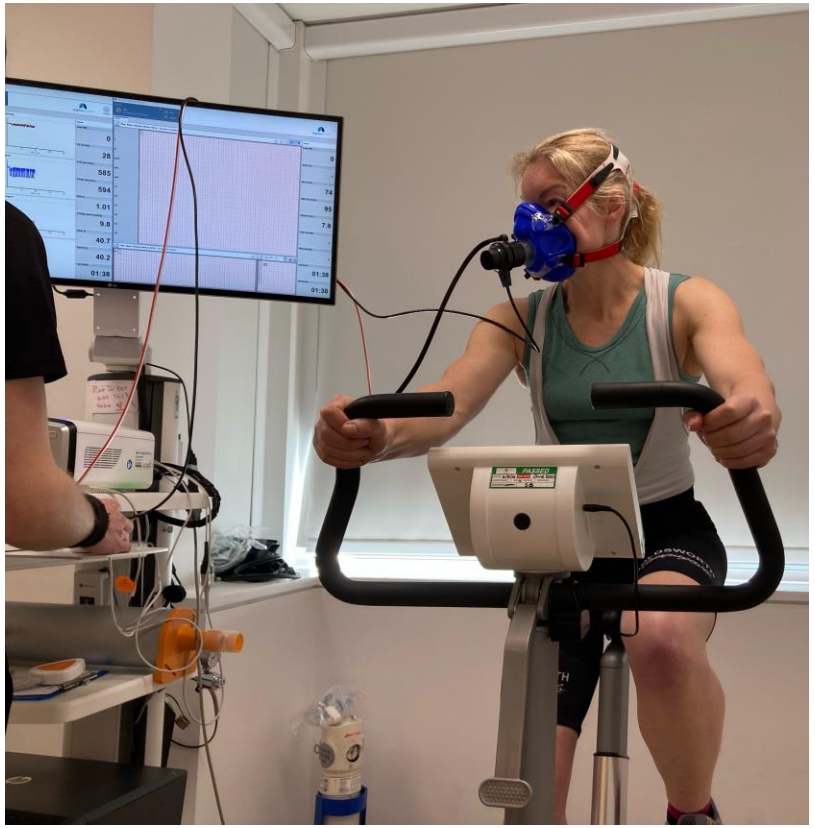
1. Disease prevention, mental health & wellbeing
2. Community impact and tackling inequalities
3. Technology and innovation



RESEARCH

UCL
FACULTY OF
MEDICAL
SCIENCES

UCL



EXERCISE NEUROSCIENCE

UCL BRAIN SCIENCES

Physical activity and obesity affect executive function in 5-11 year old children

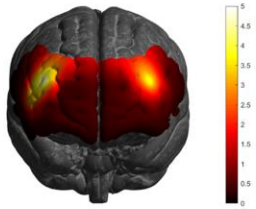
Honor Boulton[1], Flaminia Ronca[1], Shamina Mohd Habib[1], Paul Burgess[2]

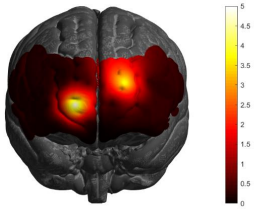
[1]Institute of Cognitive Neuroscience, University College London, London, UK.

[2]Institute of Sport Exercise and Health, University College London, London, UK.

Region-Specific Changes in Prefrontal Cortex Hemodynamics Underpin Exercise-Related Improvements to Executive Functions

James Crum[1], Flaminia Ronca[2], George Herbert[1], Estela Carmona[1], Sabina Funk[1], Uzair Hakim[3], Isla Jones[1], Josie Israel-Governale[1], Mark Hamer[2], Joy Hirsch[3,4,5], Antonia Hamilton[1], Ilias Tachtsidis[3], Paul Burgess[1]





Depressive Symptoms Modify Exercise-Induced Changes in Prefrontal Cortex Hemodynamics

James Crum[1], Flaminia Ronca[2], George Herbert[1], Estela Carmona[1], Sabina Funk[1], Uzair Hakim[3], Isla Jones[1], Mark Hamer[2], Joy Hirsch[3,4,5], Antonia Hamilton[1], Ilias Tachtsidis[3], Paul Burgess[1]

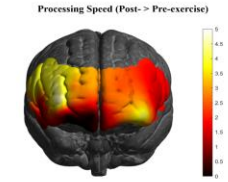


Figure 2. HbR changes in the PFC as an acute effect of exercise (n = 92) collapsed across all executive function conditions. Greatest activation changes are represented in bright yellow and white, with little to no effects represented in dark red and black, respectively (t values of the images are scaled from 0-5+).

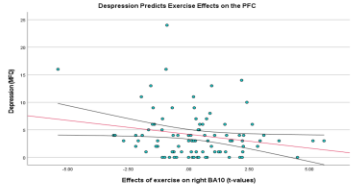
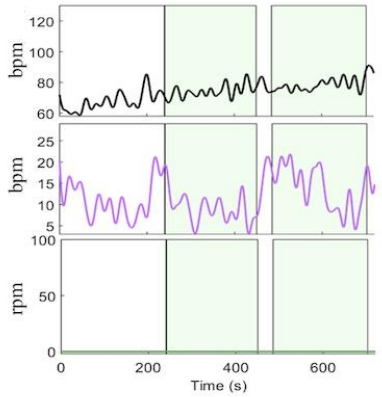
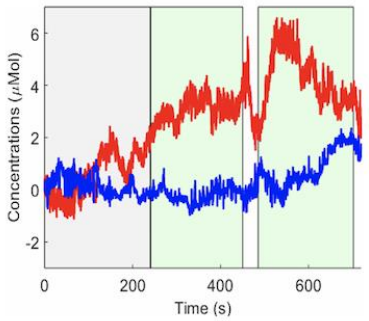


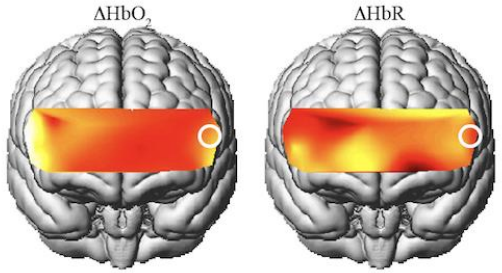
Figure 3. Higher scores on the MFQ (y-axis), a measure of depressive symptoms, associated with smaller effects of exercise on right rostral PFC (x-axis) across all experimental conditions (i.e., processing speed).

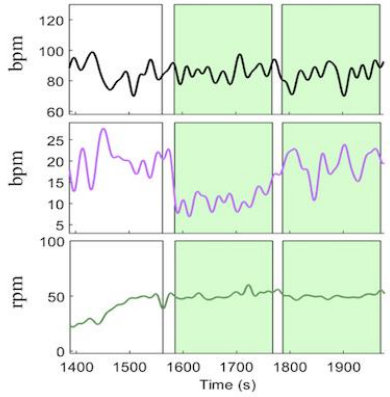
EXERCISE NEUROSCIENCE

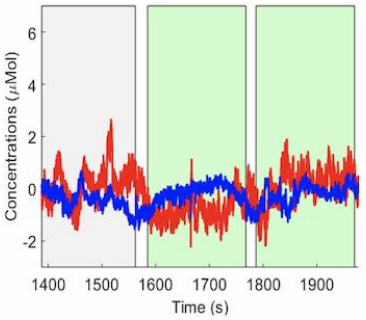
UCL ENGINEERING
Change the world

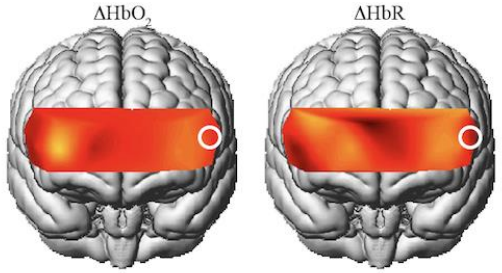












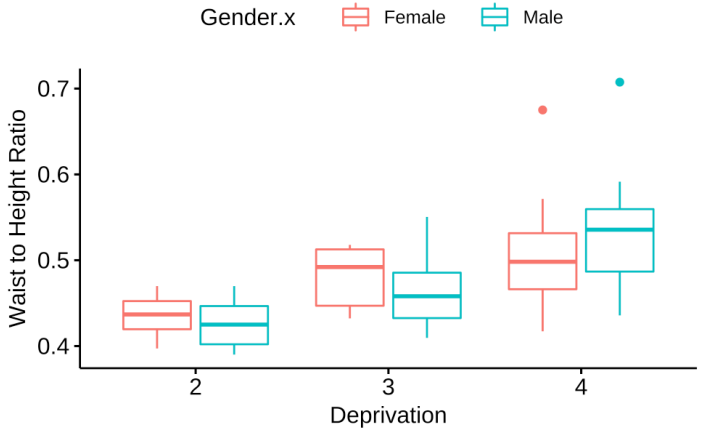
CHILD DEVELOPMENT

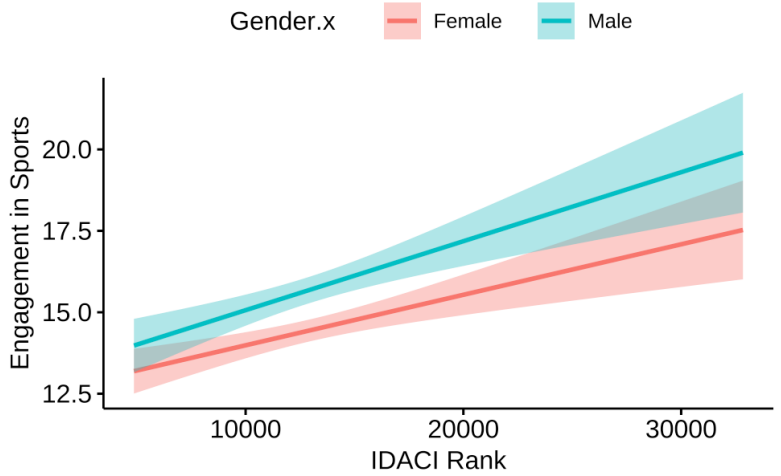
SCHOOLS

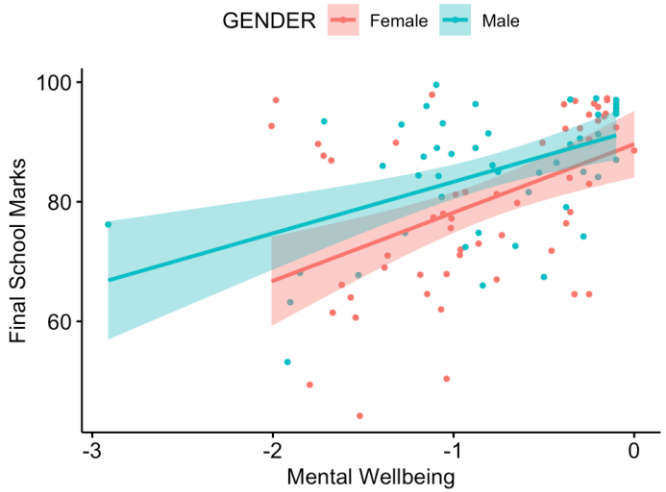
SCOPING

N = 23 Schools, 2382 children in lowest 5th IDACI deciles

- **Deprivation** predicted obesity by 29%
- **Deprivation** predicted physical activity by 4%
- **Deprivation** predicted executive function by 19%
- **Obesity** predicted poorer executive function by 5%
- **Mental wellbeing** predicted school grades by 23%







CHILD DEVELOPMENT

SCHOOLS

SCOPING → **INTERVENTION**

N = 2382 children, 23 Schools in lowest 5th IDACI deciles

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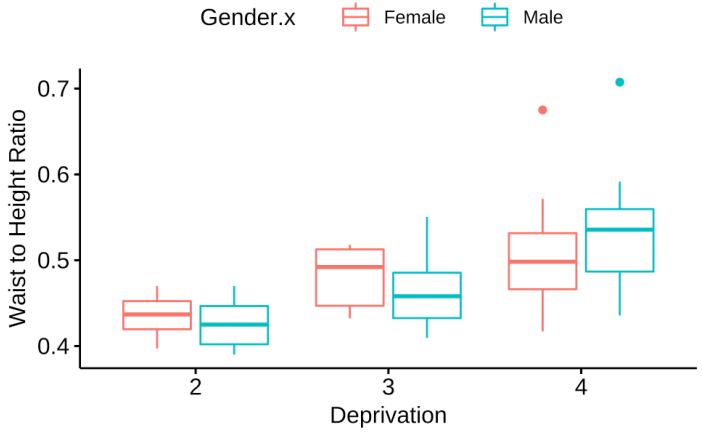

ACTIVE MOVEMENT

CHILD DEVELOPMENT

SCHOOLS

SCOPING → INTERVENTION → OUTCOME

N = 2382 children, 23 Schools in lowest 5th IDACI deciles

- **Deprivation** predicted obesity by 29%
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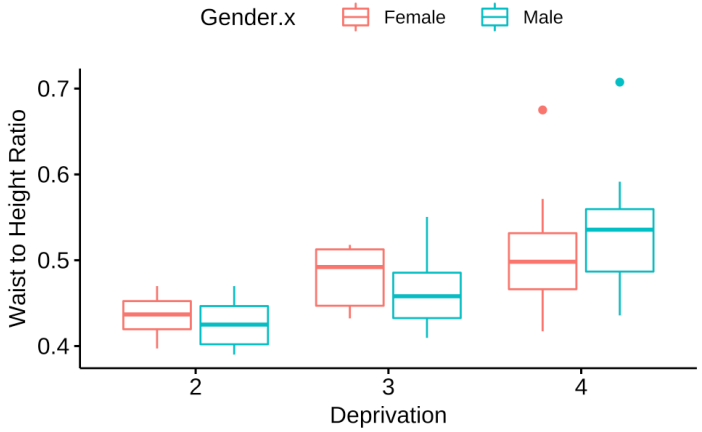
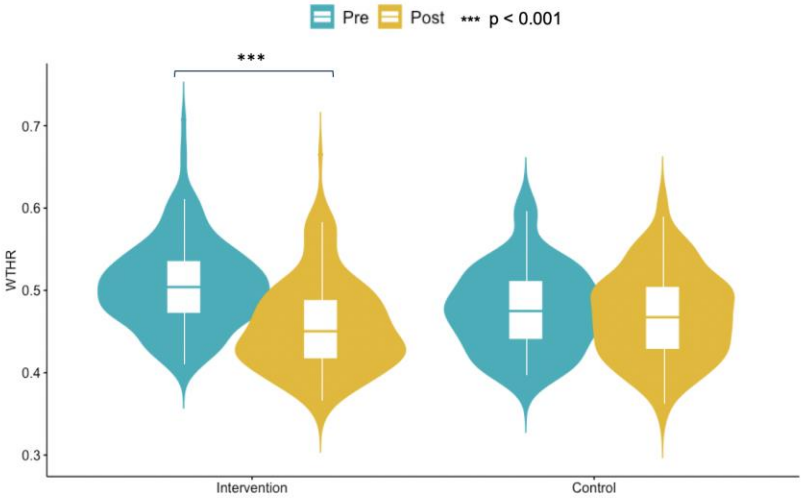
N = 300 children

- **Obesity** decreased by 10%
- **Physical activity** increased by 6%
- **Executive Function** improved by 15%



ACTIVE MOVEMENT



CHILD DEVELOPMENT

SCHOOLS

Funded PhD Scholarship

Impact of Youth Sport on:

- **Social mobility**
- **Mental wellbeing**
- **Cognitive development**

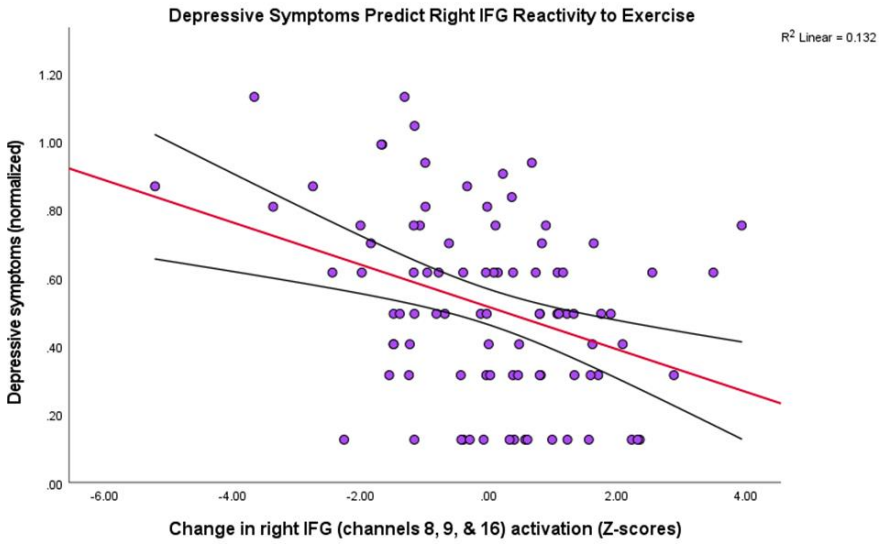
Greenhouse Sports

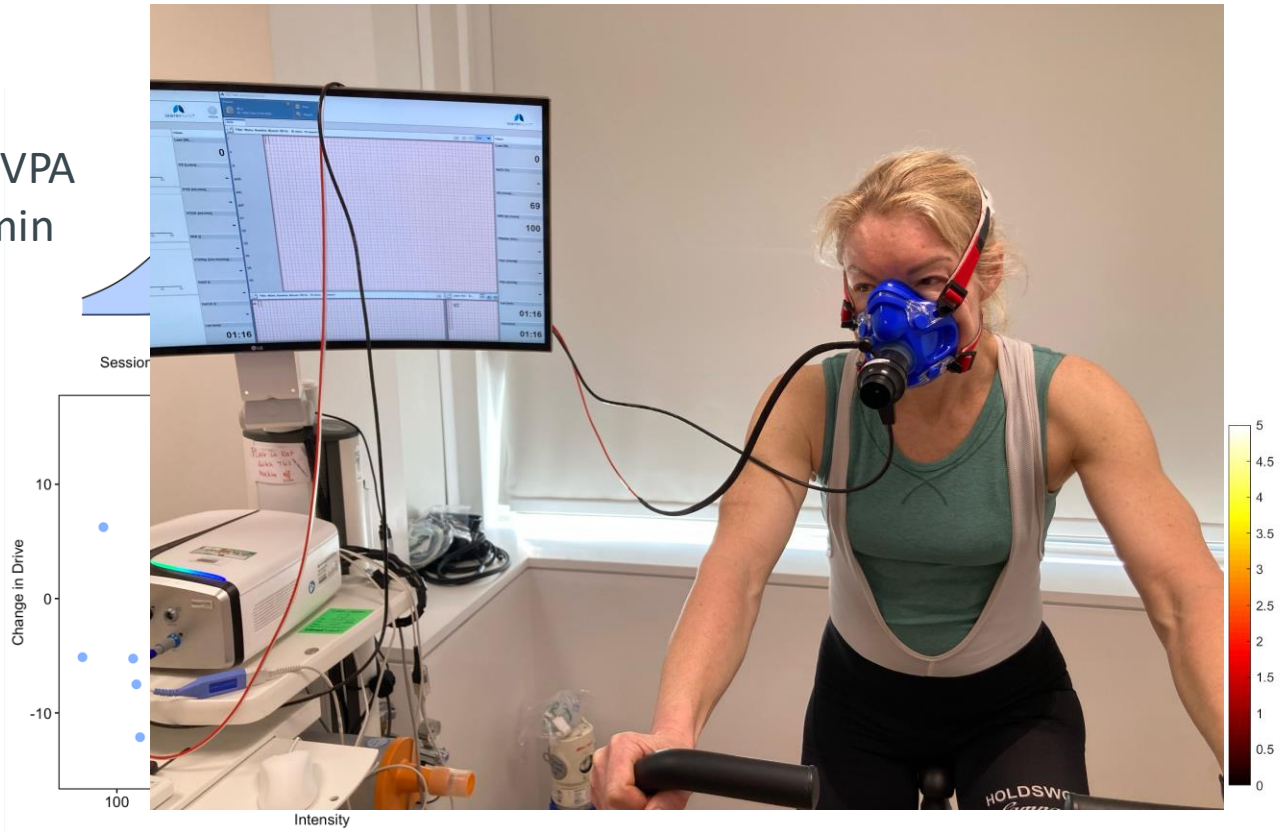
BRAIN HEALTH

COMMUNITY CLUBS

SCOPING

- N = 92 adults
- Increased **PFC activation in depression**
- Optimal **intensity for mood boost:** 30min MVPA
- Increased **brain activity and speed** after 15min





BRAIN HEALTH

COMMUNITY CLUBS

SCOPING → **INTERVENTION**

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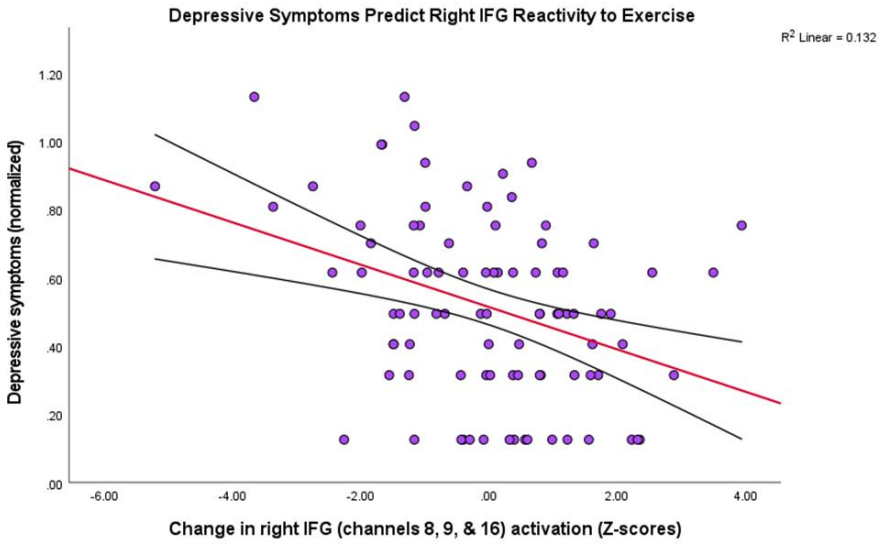

BLUELIGHT CYCLE CLUB
Protect | Serve | Ride
BLUELIGHT CYCLE CLUB

METROPOLITAN POLICE

BRAIN HEALTH

COMMUNITY CLUBS

SCOPING → **INTERVENTION**

BRAIN HEALTH

COMMUNITY CLUBS

SCOPING → INTERVENTION → OUTCOME

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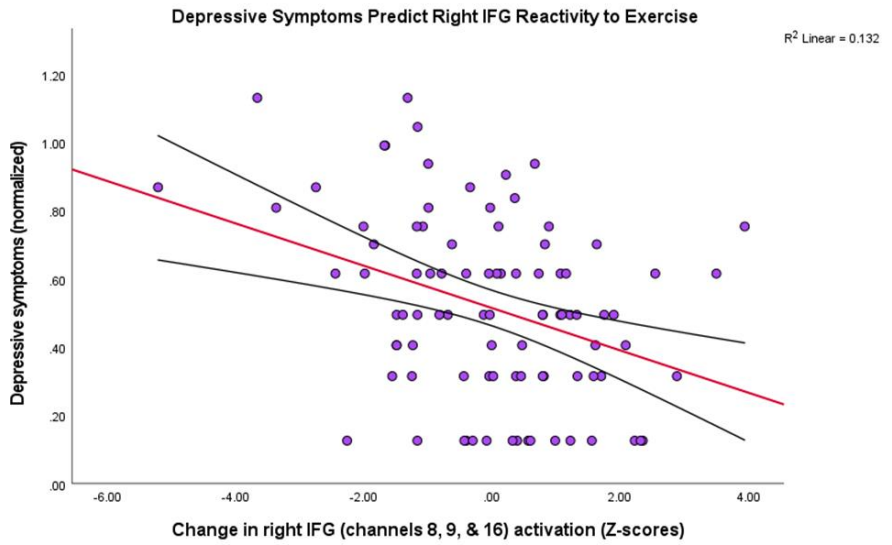
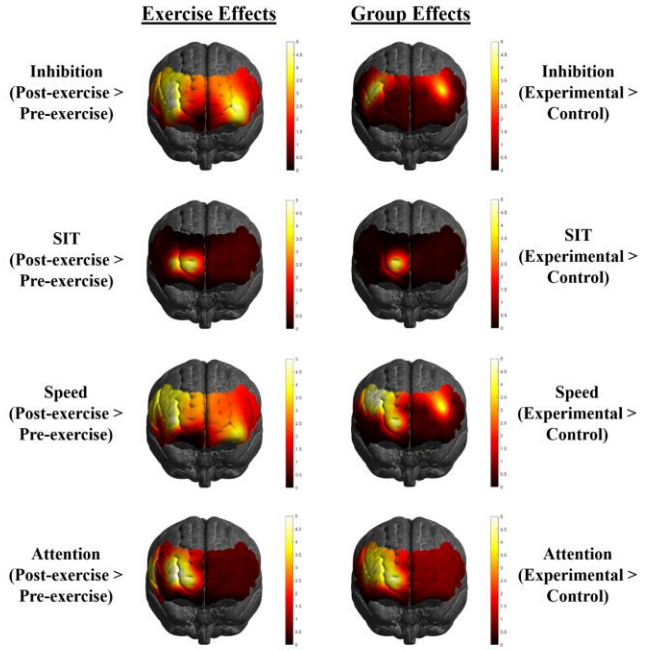


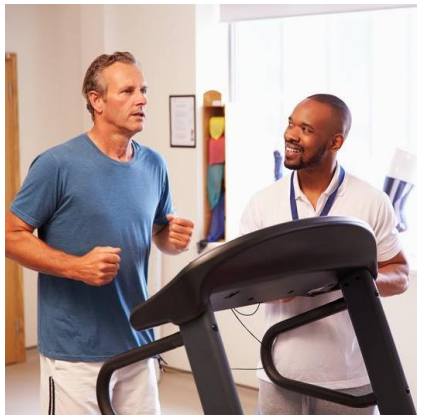
BLUELIGHT CYCLE CLUB
Protect | Serve | Ride
BLUELIGHT CYCLE CLUB

METROPOLITAN POLICE

- N = 152 adults
- **Reduced stress**
- **Body Fat and VO2max** predict exercise benefit



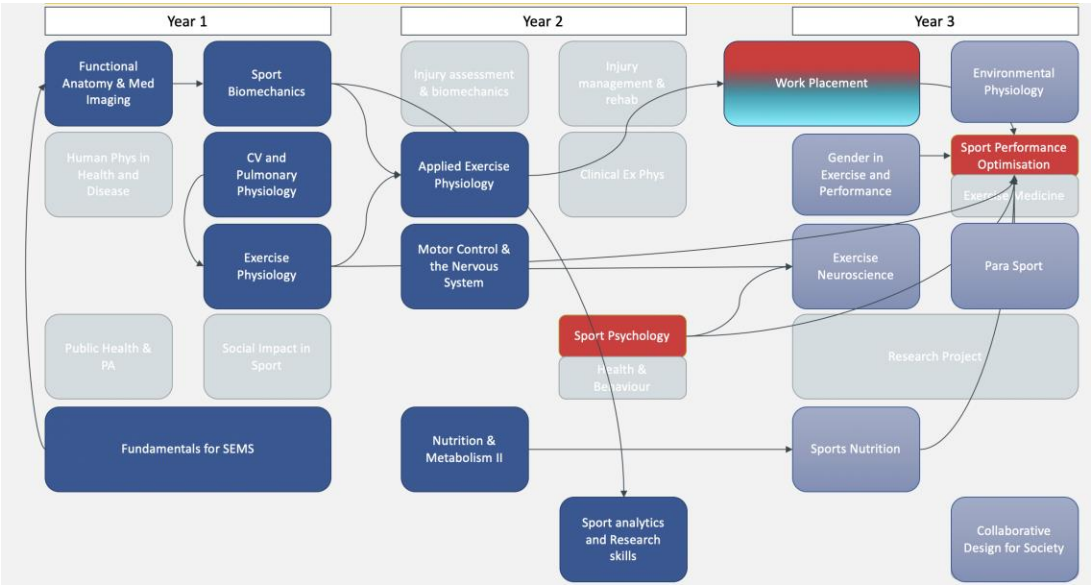
Sport and Exercise Medical Sciences BSc



- Manage and prevent disease through physical activity
- Facilitate access to physical activity
- Generate social change through sport
- Prevent and manage injury
- Develop technological innovations

CURRICULUM

Curriculum Design



EDI FOCUSED MODULES

- Social Impact in Sport
- Para Sport
- Gender in Sport
- Exercise Medicine
- Environmental Physiology
- Work Experience

COMMUNITY PARTNERSHIPS

COMMUNITY-ENGAGED LEARNING	WORK EXPERIENCE	SCHOLARSHIPS
Evaluating impact	120 hours of volunteering	1 National 1 East London

SPORT EAST 2024