



# Tracking Physical Activity from Adolescence to Early Adulthood: Decline and the Impact of the COVID-19 Pandemic

Dr Eoin McNamara

*Economic and Social Research Institute*

13<sup>th</sup> Annual  
Research  
Conference  
2021

# INTRODUCTION

## Physical activity (PA) is a key component of **health**

- Early evidence: bus drivers vs bus conductors (Morris *et al.*, 1953)
- Protective effect against many diseases (CVD, diabetes, cancer)

## PA is a key modifiable behaviour for combatting **obesity**

- Increased PA ➡ energy deficit ➡ weight loss

## PA levels **decline over time**

- Intn'l research suggests ~7% yearly reduction
- Decline continues into early adulthood
- **Irish** evidence of age-based difference: **HBSC, Healthy Ireland**

## Impact of the **COVID-19 Pandemic:**

- **Restrictions:** limits on movement, social engagements and exercise facilities closed = **barriers to PA**
- CSO – early evidence of **negative health impact:**
  - Increased junk food, screen-time usage
  - **Exercise:** 37% doing more, 33% doing less
- Sport Ireland report:
  - Increase in **individual sports:** walking, running and cycling
  - Decrease in **team sports**
  - Data collected by mid-April 2020 – initial effect, sustained?

# RESEARCH QUESTION

**Q1.** Do we observe a decline in PA from ages 9 to 20rs?

**Q2.** If so, what are the determinants of PA decline?

**Q3.** How has the pandemic affected PA levels of this cohort?

## **STUDY SAMPLE:**

- *GUI* Cohort '98
- Data collected at four main waves (9, 13, 17/18, 20yrs)
- N = 4,729
- Online questionnaire in Dec 2020 on COVID-19 experience (22yrs)

# METHODS

Two questions about PA levels asked at all main waves

Q1. No. of times / fortnight you did  $\geq 20$ mins of **moderate exercise**?

- e.g. walking or slow cycling (including in PE)

Q2. No. of times / fortnight you did  $\geq 20$ mins of **vigorous exercise**?

- e.g. playing football, jogging or fast cycling (including in PE)



Calculate **MVPA minutes per week**

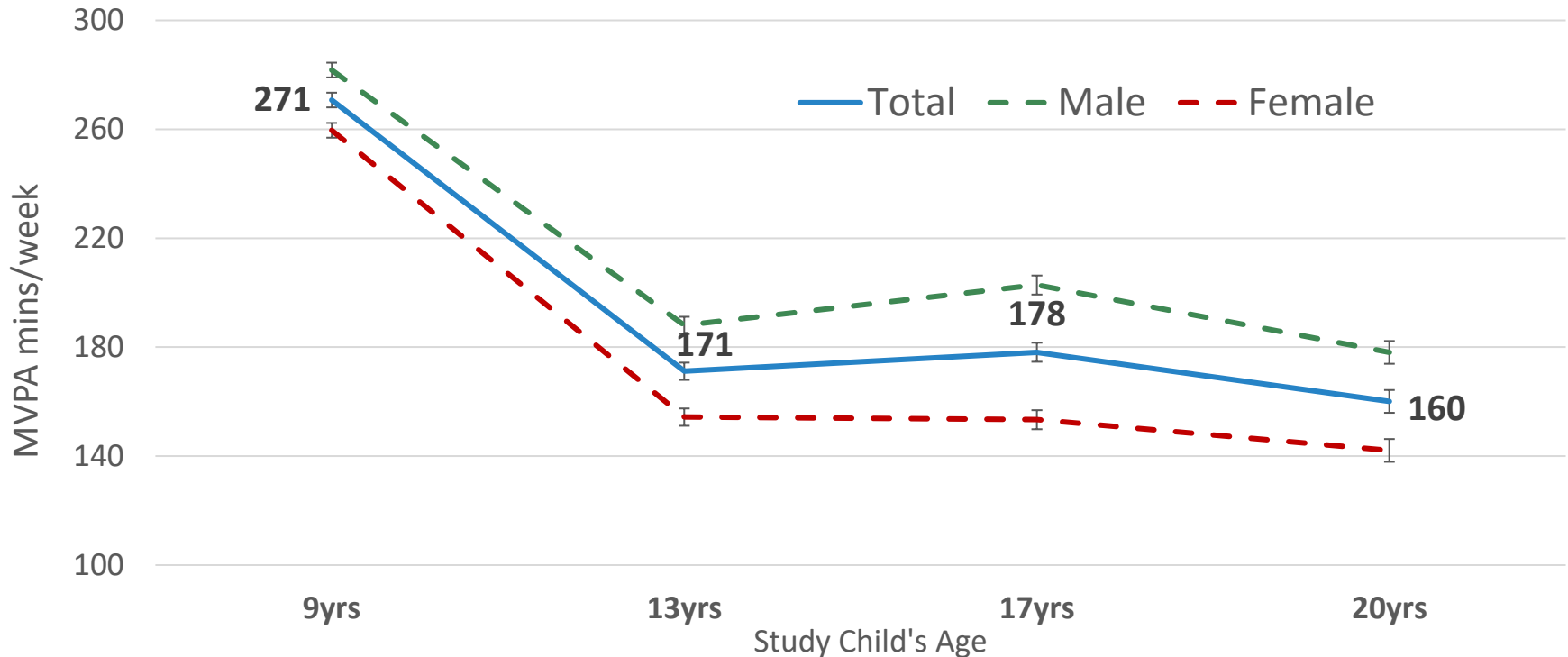
(moderate-to-vigorous physical activity)

COVID-19: Asked about changes in health behaviour

- Sports / physical exercise?
- Drinking/smoking?
- Time spent outdoors?
- Junk food consumption?

# RESULTS

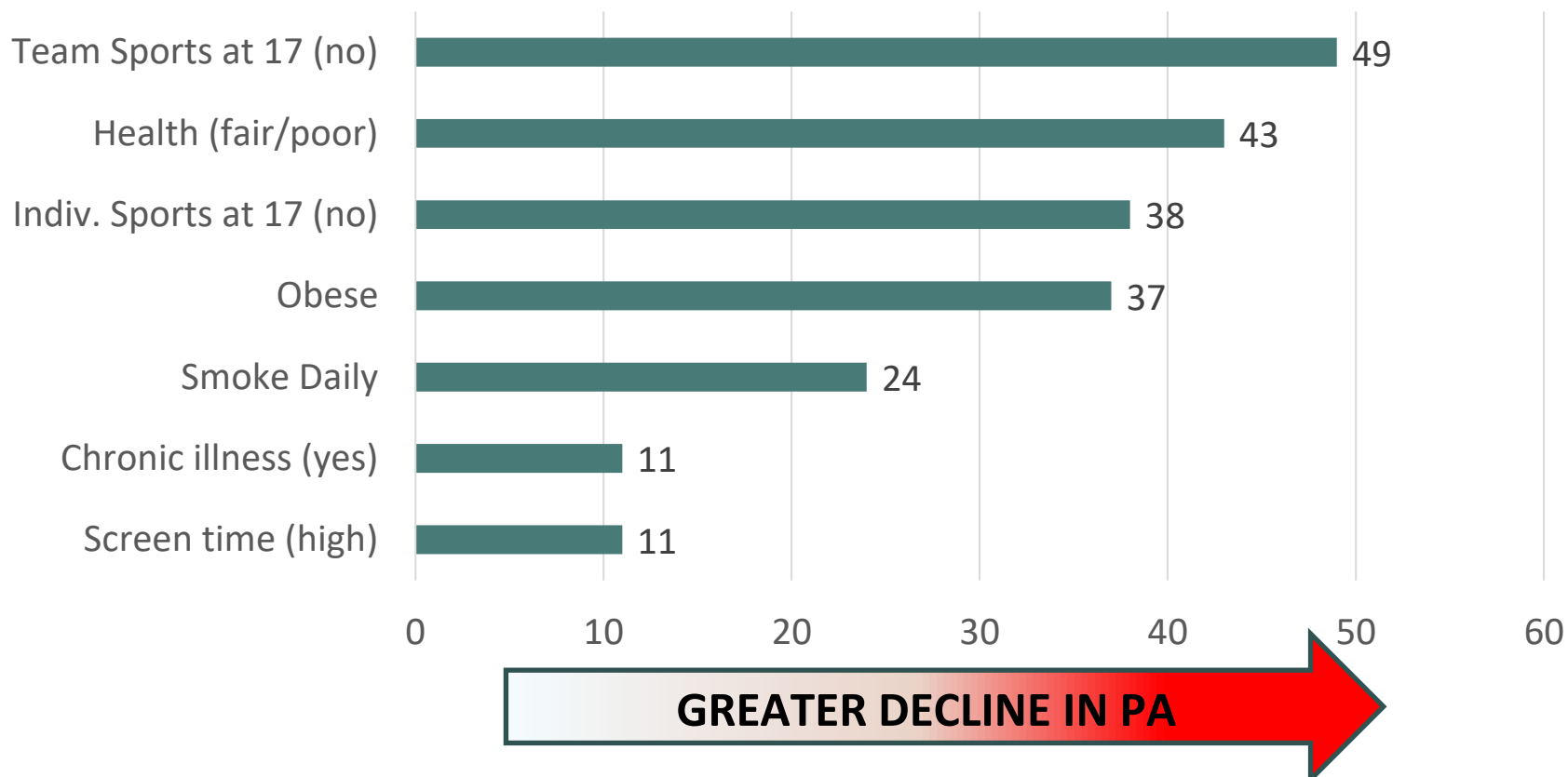
**Fig 1 - Physical Activity Levels across all four waves of the study**



- 21% reported increase / **76% decline**
- Mean Difference = 111 mins/wk **decline**
  - 31% reported **3hr+ reduction**

# RESULTS

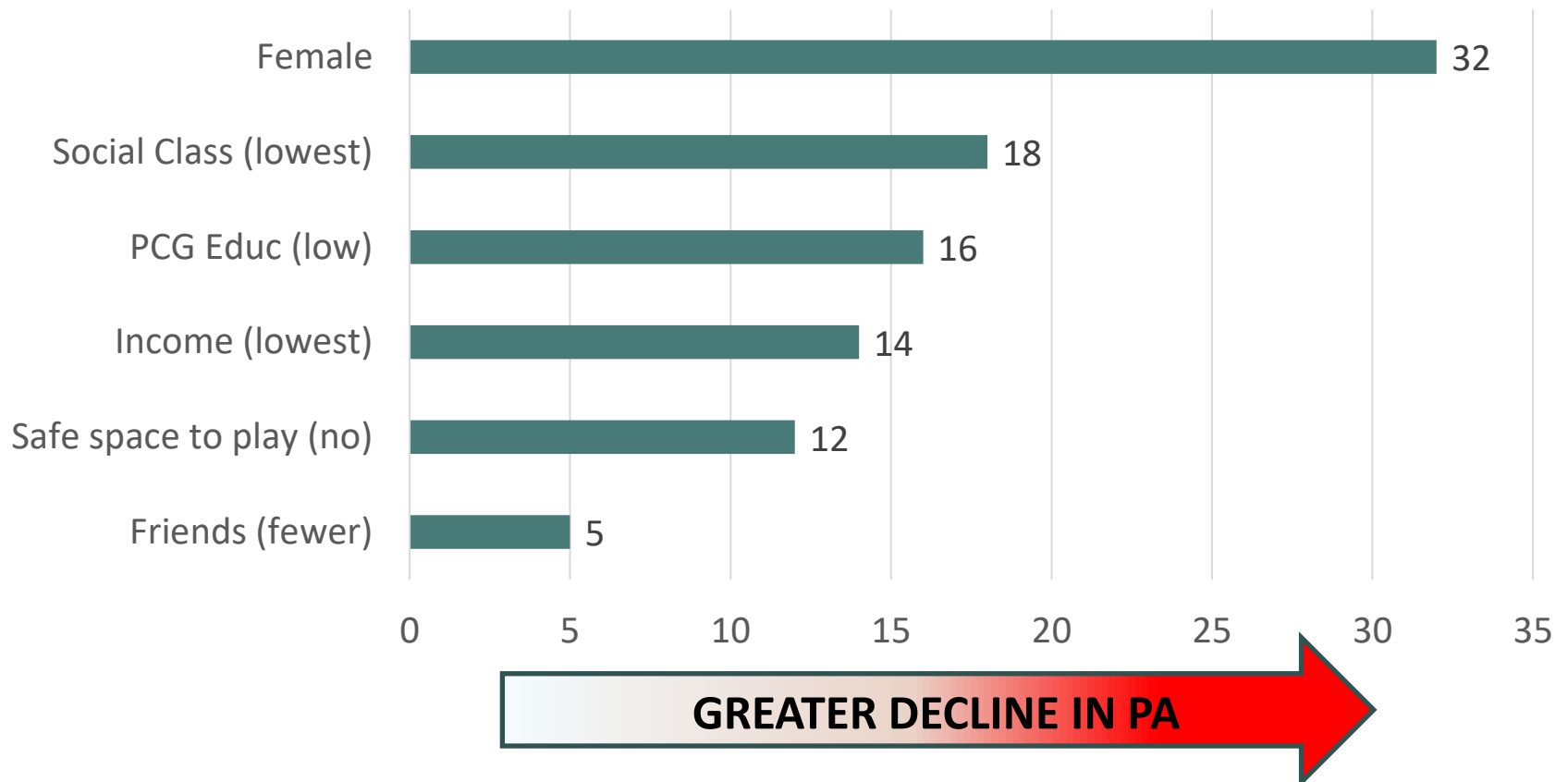
**Fig 2 – Adjusted Effect\* on Mean Difference in PA between 9 & 20yrs**



*\*Adjusted for PA level at Age 9*

# RESULTS

**Fig 3 – Adjusted Effect\* on Mean Difference in PA between 9 & 20yrs**

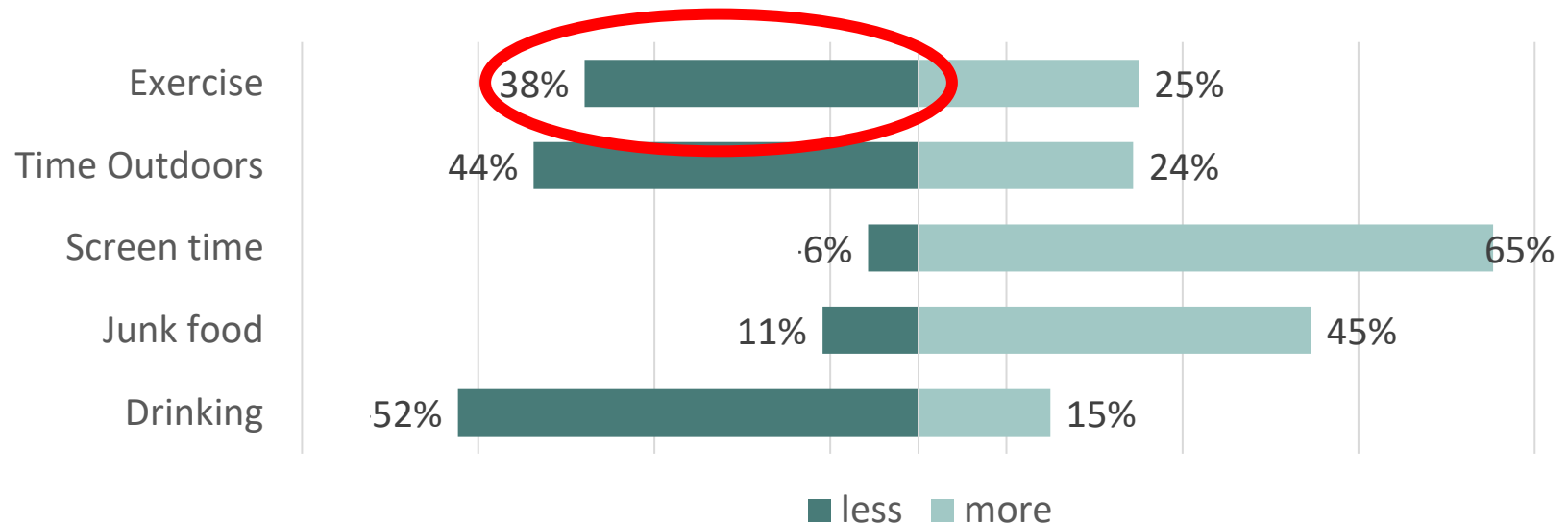


*\*Adjusted for PA level at Age 9*



# RESULTS – COVID-19

*Fig 4 – Changes in Health Behaviours from Pre- to Mid-Pandemic*



**Less exercise** ➔ **most active pre-pandemic**

- males
- non-smokers

- higher SES
- sports' participants

- non-overweight

# CONCLUSION

## SUMMARY

- **Significant decline in PA** from childhood to early adulthood
- **Predictors of PA decline:** same as determinants of PA in childhood?
- **COVID-19 has negatively impacted** health behaviours, incl. exercise

## LIMITATIONS

- Ideally use more robust measure of PA
- However, must consider increased cost

## FUTURE RESEARCH

- Policies / interventions – increase PA or attenuate decline / what age?
- Longer-term effects of COVID-19 on PA (at 25yrs)?

# THANK YOU

## Many thanks to....

- My GUI colleagues and our colleagues at DCEDIY, TCD and CSO
- Huge thanks to all the GUI participants and their families

Questions, comments or feedback welcome.

*[eoin.mcnamara@esri.ie](mailto:eoin.mcnamara@esri.ie)*

# RESULTS

**Table 1 - Mean difference in Physical Activity from 9 to 20yrs**

RANGE:	MVPA mins/wk
Reduction from 9 to 13yrs	103
Reduction from 13 to 17/18yrs	-13
Reduction from 17/18 to 20yrs	11
<b>Total Reduction from 9 to 20yrs</b>	<b>101</b>

**Fig 2 - Mean difference in Physical Activity from 9 to 20yrs**

