

# PHYSICAL INACTIVITY AND PRODUCTIVITY IN THE MIDLANDS



**EXPLORING AND UNDERSTANDING THE LINK BETWEEN  
PHYSICAL INACTIVITY AND PRODUCTIVITY IN THE  
MIDLANDS**

**FULL TECHNICAL REPORT**

**April 2024**



## Abstract

**Introduction:** Physical inactivity is associated with higher prevalence of musculoskeletal issues such as back pain and mental health problems such as depression. These are linked to overweight and obesity, all of which are leading causes of absenteeism and presenteeism, which in turn lower productivity. None of these issues have been examined specifically in the Midlands.

**Aim:** Understand the link between physical inactivity and productivity in the Midlands.

**Methods:** Work package (1) - A rapid review of literature was compiled in June 2023 to learn about the current local and national context and to glean knowledge of key issues by searching key terms in relevant databases. Work package (2) - Primary data collection through an online survey distributed in the region and nationally. Work package (3) - Focus groups with participants in the survey who expressed an interest in discussing the topic further.

**Results:** Work package (1) - 22 articles met the inclusion criteria and key information on productivity and labour market outcomes was extracted. Work package (2) - Of the 148 participants, 23 resided in the East Midlands and 85 resided in the West Midlands. Survey responses informed questioning for work package 3. Work package (3) - Eleven participants (five female) took part in three focus groups. The focus groups lasted between 48 and 95 minutes and consensus on all statements was reached. 6 plausibility statements were derived from the findings of all 3 work packages.

**Conclusion:** It is plausible that physical inactivity can reduce productivity and increase absenteeism and presenteeism. However, it is not clear if physical inactivity can increase the likelihood of unemployment or leaving the job market early. Finally, it is plausible that active commuting and workplace wellbeing interventions can be effective in increasing physical activity and reducing sedentary behaviour.

**Practical Application:** The research was commissioned by the Midlands Engine to influence local and national government to start taking seriously the negative impact of physical inactivity on productivity to the benefit of the Midlands region.

## **Executive Summary**

### **Introduction**

Being physically active, exercising and participating in sport enables the development of personal and social skills of benefit to the workplace including teamwork, self-discipline, resilience, time management, perceived self-efficacy and self-esteem. In contrast, physical inactivity is associated with higher prevalence of musculoskeletal issues such as back pain and mental health problems such as depression. These are linked to overweight and obesity, all of which are leading causes of absenteeism and presenteeism, thereby reducing productivity. None of these issues have been examined specifically in the Midlands.

### **Aim**

Understand the link between physical inactivity and productivity in the Midlands.

### **Work Package 1**

A rapid review of literature was compiled to learn about the current local and national context and to glean knowledge of key issues by searching key terms in relevant databases. 22 articles met the inclusion criteria and key information on productivity and labour market outcomes was extracted.

The main aim of the rapid literature review was to answer the research question, 'Does physical inactivity reduce labour market participation and productivity?'. A definitive answer could not have been extrapolated from the work of this review alone.

### **Work Package 2**

Primary data collection was undertaken via an online survey distributed in the region and nationally. Of the 148 participants who completed the survey, 23 resided in the East Midlands and 85 resided in the West Midlands. Survey responses informed plausibility statements on productivity, labour market and related outcomes as well as key questions that needed to be asked as part of work package 3.

### **Work Package 3**

The researchers facilitated focus groups with participants in the survey who had expressed interest in discussing the topic further. Eleven participants (five female) took part and three focus groups were conducted in total. The focus groups lasted between 48 and 95 minutes. Consensus on all statements related to productivity and labour market outcomes was reached.

## **Plausibility Statements**

Findings from all 3 work packages led to the formulation of 6 plausibility statements:

### **Statement 1 – It is plausible that physical inactivity can reduce productivity.**

Based on data from numerous studies included in the rapid review, supported by the 85.1% of the entire survey sample who agreed or strongly agreed that being physically inactive reduces productivity at work and consensus at the focus groups, it is plausible that physical inactivity can reduce productivity.

When interpreting our Midlands data specifically, 86.1% agreed or strongly agreed with the statement (84.7% West Midlands and 91.3% East Midlands), so we can also be confident that this statement is plausible for the Midlands.

### **Statement 2 – It is plausible that physical inactivity can increase absenteeism.**

Based on data from numerous studies included in the rapid review, coupled with the fact that 61.5% of our entire survey sample agreed or strongly agreed that being physically inactive increases absenteeism and consensus was reached at the focus groups, it is plausible that physical inactivity can increase absenteeism.

When interpreting Midlands data specifically, more than half (57.4%) of the Midlands sample (56.5% West Midlands and 60.9% East Midlands) also agreed or strongly agreed with the statement, so we can also be confident that this statement is plausible for the Midlands.

### **Statement 3 – It is plausible that physical inactivity can increase presenteeism.**

Based on data from numerous studies included in the rapid review, and 62.8% of our entire survey sample agreeing or strongly agreeing that being physically inactive increases presenteeism and consensus reached at the focus groups, it is plausible that physical inactivity can increase presenteeism.

Nearly two thirds (63.0%) of the Midlands sample (61.2% West Midlands and 69.9% East Midlands) also agreed or strongly agreed with the statement, so we can also be confident that this statement is plausible for the Midlands.

### **Statement 4 – It is not clear if physical inactivity can increase the likelihood of unemployment.**

While evidence is presented in the rapid review suggesting that being physically active or playing sport can increase your earning potential, there is insufficient evidence to comment on unemployment *per se*.

Only 37.8% of the entire sample agreed or strongly agreed that being physically inactive for an extended period increases the risk of unemployment. While consensus was reached at the focus groups, there was some dissonance presented in the supporting quotes.

39.8% of the Midlands sample (41.2% West Midlands and 34.8% East Midlands) also agreed or strongly agreed with the statement, so we can also be confident that it is not clear if physical inactivity can increase the likelihood of unemployment in the Midlands.

### **Statement 5 – It is not clear if physical inactivity can increase the likelihood of leaving the job market early.**

The survey highlighted that 64.9% of the entire sample agreed or strongly agreed that employers believe that being physically inactive increases the likelihood of leaving the job market early and consensus was reached at the focus groups. However, there was an extreme lack of studies in the rapid review that specifically examined people leaving the job market early.

62.0% of the Midlands sample (64.7% West Midlands and 52.2% East Midlands) also agreed or strongly agreed with the statement but, in the context of the inconclusive data found in the rapid review, it is not clear if physical inactivity can increase the likelihood of leaving the job market early for the Midlands.

### **Statement 6 – It is plausible that active commuting and workplace wellbeing interventions can be effective in increasing physical activity and reducing sedentary behaviour.**

There was substantial evidence from the rapid review that active commuting, workplace interventions and the provision of standing desks can be effective in increasing physical activity and reducing sedentary behaviour. 76.4% of our entire survey sample would welcome interventions that enable physical activity and/or reductions in sedentary behaviour in the workplace.

These figures were 74.1% of participants from the Midlands (71.8% West Midlands and 82.6% East Midlands). 6.1% of the entire sample said they would not welcome these opportunities with that figure being 6.5% for the Midlands (8.2% West Midlands and 0% East Midlands) so we can also be confident that this statement is plausible for the Midlands.

### **Future Research Recommendations**

There was a clear lack of research evidence that would enable the analysis of people who meet physical activity guidelines for health versus people who are not meeting guidelines (i.e. the physically inactive) for outcomes such as productivity, absenteeism, presenteeism and health outcomes. At present, appropriate study designs and data is lacking.

### **Conclusion**

It is plausible that physical inactivity can reduce productivity and increase absenteeism and presenteeism. However, it is not clear if physical inactivity can increase the likelihood of unemployment or leaving the job market early. Finally, it is plausible that active commuting and workplace wellbeing interventions can be effective in increasing physical activity and reducing sedentary behaviour.

### **Practical Application**

The research was commissioned by the Midlands Engine so that the findings can influence local and government policy to start taking seriously the negative impact of physical inactivity on labour market outcomes to the benefit of the Midlands region. Impact-related activities and further work are now progressing.

## Contents

	<b>Page Number</b>
Abstract	1
Executive Summary	2
Glossary	6
Introduction	9
Section 1 - Rapid Review	11
Section 2 - Survey	39
Section 3 - Focus Groups	65
General Discussion and Plausibility Statements	80
Recommendations	82
Strengths	82
Limitations	83
Future Research Recommendations	83
Future Work	84
Conclusion	85
Appendices	86

## Glossary

### **Absenteeism**

Any failure to report for or remain at work as scheduled, regardless of the reason.

**Absenteeism unit(s)** = days off work per rate of time

### **Active travel/active commuting**

Active travel refers to modes of travel that involve physical activity, so can include motorised forms of public transport.

Whilst modes are typically walking and cycling, active travel can also include trips made by wheelchair, mobility scooters, adapted cycles, e-cycles, scooters.

**Active travel/active commuting unit(s)** = minutes, hours and step count

### **Claimant count**

The number of people claiming unemployment related benefits

**Claimant count unit(s)** = absolute number

### **Economic inactivity**

People aged 16 years and over without a job who have not sought work in the last four weeks and/or are not available to start work in the next two weeks.

**Economic inactivity unit** = % inactivity rate for those aged from 16 to 64 years

### **Employment**

People aged 16 years and over who have done paid work (as an employee or self-employed), those who have a job that they are temporarily away from, those placed with employers on government-supported training and employment programmes, and those doing unpaid family work.

**Employment unit** = % of a designated total population

### **Exercise**

A subset of physical activity that is planned, structured, and repetitive and has as a final or intermediate objective the improvement or maintenance of physical fitness.

**Exercise unit(s)** = hours, minutes and step count

### **Labour force/market participation**

An estimate of an economy's active workforce. The formula is the number of people aged 16 years and over who are employed or actively seeking employment divided by the total working-age population.



**Labour force/market participation unit(s)** = % of the total working-age population

**Leaving the job market early**

A situation in which a person is no longer employed because they chose to retire early or are unable to work for health reasons.

**Leaving the job market unit(s)** = absolute number or % of a designated population

**Moderate-intensity physical activity**

Physical activity that increases body temperature and respiration rate. You would be able to hold a conversation while engaging in moderate activity, but could not sing.

**Moderate-intensity physical activity unit(s)** = 3-6 metabolic equivalents (METS)

**Physical activity**

Any voluntary bodily movement produced by skeletal muscles that requires energy expenditure above rest.

**Physical activity unit** = hours, minutes and % meeting physical activity (PA) guidelines

**Presenteeism**

The act or culture of employees continuing to work, but not fully functioning or performing their duties, because of an illness, injury, exhaustion, or other condition.

**Presenteeism unit(s)** = days per rate of time

**Physical inactivity**

A lack of moderate-to-vigorous physical activity in a person's lifestyle.

**Physical inactivity unit(s)** = hours, minutes and % not meeting PA guidelines.

**Productivity**

A measure of how efficiently a society converts work and other resources into products and services that improve people's lives.

For the purposes of this report, productivity is defined by individuals' efficiency at delivering goods and services and completing their assigned tasks in the workplace.

**Productivity unit(s)** = Output over time.

**Sedentary Behaviour**

Any waking behaviour characterised by an energy expenditure  $\leq 1.5$  metabolic equivalents (METs), while in a sitting, reclining or lying posture.

**Sedentary behaviour units** = hours, minutes and % >8 hours per day.

### **Sport**

Any form of physical activity or game, often competitive and organised, that aims to use, maintain, or improve physical ability and skills while providing enjoyment to participants and, in some cases, entertainment to spectators.

**Sport unit(s)** = hours, minutes and step count.

### **Unemployment**

Refers to a situation where a person is actively searching for employment but is unable to find work; without a job; has been actively seeking work in the past four weeks and is available to start work in the next two weeks is out of work; has found a job and is waiting to start it in the next two weeks.

**Unemployment unit(s)** = the number of unemployed people divided by the economically active population (those in employment plus those who are unemployed)

### **Vigorous-intensity physical activity**

Physical activity that significantly increases respiration rate and body temperature. You would not be able to hold a conversation while engaging in vigorous activity.

**Vigorous intensity physical activity unit(s)** = >6 METS

## **Introduction**

Following a competitive expression of interest process, academics from the Institute of Health and Wellbeing at Coventry University were awarded £15,000 of funding to explore the link between physical inactivity and productivity in the Midlands. Funding had to be matched, which took the form of academic and related staff time allocated to the project.

Office for National Statistics data (September-November 2022) showed a national unemployment rate of 3.7%. People's health, confidence, motivation and preparedness for employment remain a barrier for those entering the labour market.

Physical activity, exercise and sport help develop personal and social skills of benefit to the workplace including teamwork, self-discipline, resilience, time management, perceived self-efficacy and self-esteem (Coalter et al., 2020). In contrast, physical inactivity is associated with higher prevalence of musculoskeletal issues such as back pain and mental health problems such as depression. These are linked to overweight and obesity (Goettler et al, 2017), all of which are leading causes of absenteeism and presenteeism, thereby reducing productivity. None of these issues have been examined specifically in the Midlands.

## **Aim**

The main aim of this research, undertaken on behalf of the Midlands Engine and the local Active Partnerships, was to understand the link between physical inactivity and productivity in the Midlands. The research was commissioned to influence local and government policy to start taking seriously the negative impact of physical inactivity on labour market outcomes.

## **Work packages (report sections 1-3)**

The research team examined this topic by undertaking three interlinked work packages. Work package 1, presented as section 1 of this report, aimed to explore the link between physical inactivity and productivity. A rapid review of literature was compiled to learn about the current local and national context and to glean knowledge of key issues. A rapid review is a form of knowledge synthesis that accelerates the process of conducting a traditional systematic literature review by streamlining or omitting various methods and processes to produce evidence for stakeholders in a resource-efficient manner.

This informed work package 2- presented as section 2 in this report- which sought to understand the link between physical inactivity and productivity in the Midlands by undertaking primary data collection through distributing an online survey in the region and nationally.

Once findings had been analysed, this informed topics for discussion in work package 3- presented as section 3 in this report- in which the research team facilitated focus groups with participants who had completed the survey and expressed interest in discussing the topic further.

## **Meetings and Consultation**

Key personnel involved in the project can be found in Appendix 1.

Every few weeks, project meetings occurred to discuss key issues and to provide updates on progress and were attended by most of the key personnel listed in Appendix 1. The purpose of these regular meetings was to agree on the aims of the project, work packages, methods and tools, as well as the granting of an extension to the original deadline to improve the rigour and robustness of the research. Definitions of key terms were also agreed that were presented as the glossary.

The report now features the work presented from each of the work packages sequentially in: Section 1 (rapid review), Section 2 (online survey) and Section 3 (focus groups) followed by a general discussion of the findings and recommendations.

## Section 1 – Rapid review

### Rapid review aim

Systematic reviews and meta-analyses are evidence syntheses that inform decision making. However, the methodological rigour and standardised processes that must be followed, such as contacting study authors to clarify data and methods, can take up to 2 years to complete. This clearly limits their ability to meet the time-sensitive needs of stakeholders on key issues, which a rapid review allows. A recent example of this was action that should be taken as a result of the COVID-19 pandemic.

Rapid reviews, which differ from standard systematic reviews and meta-analysis because inferential statistics are not conducted, have emerged as a valuable means of getting evidence to decisionmakers more quickly and are acknowledged as a time-efficient method of knowledge synthesis. Respected national and international agencies such as the World Health Organisation and the Office for Health Improvement and Disparities use rapid reviews to inform guidelines on urgent and emergent public health issues.

The main aim of this rapid review was to answer the research question, ‘Does physical inactivity reduce labour market participation and productivity?’ A secondary aim of the rapid review was to highlight key issues in the topic area that would inform the development of empirical primary data collection through a subsequent survey (the findings of which are presented in Section 2) and to raise questions to asked during focus groups (the findings of which are presented in Section 3).

### Methods

#### Guiding framework

Searching the academic literature, as well as well reputable databases, identified a number of rapid review guidelines and frameworks:

‘BioMed Central (BMC – Performing Rapid Reviews Guidance’. Located at:

<https://systematicreviewsjournal.biomedcentral.com/articles/10.1186/s13643-022-02011-5>

‘World Health Organization (WHO) - Rapid Reviews To Strengthen Health Policy And Systems: A Practical Guide’. Located at:

<https://ahpsr.who.int/publications/i/item/2017-08-10-rapid-reviews-to-strengthen-health-policy-and-systems-a-practical-guide>

‘Cochrane Rapid Reviews Methods Group’. Located at:

<https://methods.cochrane.org/rapidreviews/>

Following scrutiny, the project lead deemed the most appropriate guidance to be that compiled by the 'Cochrane Rapid Reviews Methods Group'. It offers evidence-based guidance for rapid reviews and provides 26 specific recommendations to support their completion which can be made explicit during the reporting process.

Although this rapid review guidance was developed specifically for Cochrane-approved reviews, which are typically health-related/medical, the recommendations are broadly applicable for those conducting any rapid review and their wider use is encouraged in other fields of study. Reassuringly, these recommendations arose from, and were informed by, a programme of related methodological work that included two scoping reviews, two primary methods studies and data analysis from a survey undertaken by Cochrane stakeholders who both conducted and used evidence from rapid reviews.

For the rapid review presented, 23/26 (88%) of the recommendations have been meticulously followed. Table 1.1 below makes explicit whether each recommendation was met for this rapid review and, if not, the reasons for this.

**Table 1.1** – Cochrane recommendations for the completion of rapid reviews.

No.	Recommendation	Y/N	Comment
1	Setting the research question (topic refinement)	Y	Completed in consultation between the research team and key stakeholders.
2	Setting eligibility criteria with stakeholders	Y	Completed in consultation between the research team and key stakeholders.
3	Define the population, intervention, and comparator.	Y	Completed in consultation between the research team and key stakeholders.
4	Outcome selection needs to be relevant to clinicians, policymakers and end users.	Y	Completed in consultation between the research team and key stakeholders.
5	Author teams must judiciously select the outcomes to consider.	Y	Completed in consultation between the research team and key stakeholders.
6	Prioritizing outcomes will depend on the needs of stakeholders, who should be involved in the selection process	Y	Completed in consultation between the research team and key stakeholders.
7	Limiting the inclusion criteria by study date of publication needs careful consideration	Y	Completed in consultation between the research team and key stakeholders.
8	Do not restrict to English-only publications if the expectation is that relevant studies may be published in languages other than English.	N	Not possible due to time constraints and no resource available to transcribe outputs not written in English.
9	Consider a stepwise approach for the inclusion of evidence, emphasizing synthesized research (e.g., SRs) first, where available, then on higher quality designs for primary studies.	Y	Narrative reviews will not be included and the focus is on empirical studies.
10	Searching for RRs needs to involve an experienced information specialist	Y	A Coventry University based information scientist was consulted.
11	The selection of databases to search will depend on the topic under review and access to them.	Y	Databases were selected based in consultation with the information scientist.
12	Gray literature searching should be performed after the abstract and full-text screening is completed.	Y	Completed after full text screening was complete.
13	Screening reference lists can detect missed studies when searching electronic databases or eligible studies excluded in error during screening.	Y	Reference lists of included studies was checked for studies that may have been missed.
14	Title and abstract screening should involve one reviewer to include and two reviewers to exclude. A standardized title and abstract form should be used and before the start of screening, a pilot exercise should be conducted	Y	Two researchers screened over 1,800 abstracts and discussed when there was dissonance to arrive at a consensus.
15	Study selection - full-text screening. Dual, independent screening of full-text articles is recommended.	Y	Two researchers screened all outputs and discussed when there was dissonance to arrive at a consensus.
16	Data extraction may be separated into two parts: i) extracting study characteristics for which Cochrane allows for both dual and single extraction although in duplicate is highly desired and ii) extracting outcomes	Y	All data extraction was completed by one researcher and a sample checked by another researcher.

	data, which Cochrane makes mandatory to extract in duplicate.		
17	Data for RRs should be extracted using a pilot-tested form.	Y	An excel spreadsheet was developed to extract data for key outcomes.
18	Skilled extractors will be key to minimizing error rates for RRs.	Y	All researchers involved in the project have experience of conducting secondary data analysis and writing reviews.
19	One reviewer to do risk of bias (RoB) with another reviewer to verify all judgments.	N	Risk of bias has not been completed as part of this rapid review but will be conducted for any academic publication.
20	it is important to limit the RoB ratings to the primary outcomes included in the summary of findings tables and to use, if possible, a valid RoB assessment tool specific to the study design(s) must be included in the RR.	N	As aforementioned a risk of bias assessment of each study has not been completed.
21	Synthesis - RR teams need to develop an appropriate analysis plan in advance. At the outset of the synthesis stage, providing a descriptive summary of the included studies helps confirm if they are similar and reliable enough to synthesize and if it is possible to pool results.	Y	A descriptive summary is presented for each of the included studies. Key findings are presented in a table.
22	A narrative synthesis of findings from multiple studies should be conducted.	Y	This is presented in the overall discussion.
23	To minimise duplication and to ensure relevancy and transparency, author teams should confer with Cochrane or other registries (e.g., the international Prospective Register of Systematic Reviews [PROSPERO] and Open Science Framework [OSF]) before starting an RR.	Y	This rapid review was registered with PROSPERO prior to commencement. The research team also sought ethical approval from Coventry University Ethics committee.
24	The RR process should allow for post hoc changes. Significant changes should be discussed with the stakeholders involved, and any amendments tracked and reported. Moreover, authors should seek stakeholder feedback throughout the process to ensure the RR meets their information needs.	Y	Regular meetings and consultation took place between the research team and key stakeholders.
25	The use of software in the production of RRs. Online systematic review software enhances collaboration by allowing for real-time project management and multiuser participation across geographic boundaries.	Y	Blind screening and reviewing of outputs was conducted using online software.
26	Given the methodological modifications inherent to RRs, authors must be transparent in reporting their methods and results. Use the general PRISMA statement to the extent possible and adapt needed.	Y	The PRISMA guidelines were followed in completion of this review and an adapted PRISMA flow diagram is presented as figure 1.



## **Ethical approval and registration**

The rapid review received ethical approval from Coventry University's Ethics Committee (project number- P150655). The intention to conduct a rapid review was submitted to PROSPERO on 28<sup>th</sup> April 2023 and approved on 5<sup>th</sup> June 2023 (see the entry at - [https://www.crd.york.ac.uk/PROSPERO/display\\_record.php?RecordID=410445](https://www.crd.york.ac.uk/PROSPERO/display_record.php?RecordID=410445))

## **Inclusion and exclusion criteria**

Inclusion criteria included studies that were observational, cross-sectional, prospective cohort, retrospective cohort, intervention studies, randomised controlled trials (RCT) or non-randomised RCT ('quasi-RCT'), and written in English. Participants in the included studies had to be employed, unemployed, off sick or had left the labour market early. Interventions or exposures were physical inactivity, physical activity, sedentary behaviour, and/or fitness. Studies that measured job-related performance measures and/or labour market outcomes were included. Excluded studies were narrative pieces or systematic reviews, and any studies not written in English. Participants that were children and/or young people or not human were excluded. Studies that only measured non-job-related performance measures were excluded.

## **Databases**

An expert information scientist employed by Coventry University with experience of conducting rapid and systematic reviews was consulted on which databases should be searched. Following the consultation and some test searching, APA PsycArticles, Business Source Complete, APA PsycINFO and SPORTDiscus were the databases selected and searched for studies published between January 2013 and March 2023.

PROSPERO is a database hosted by the University of York which approves the conduct of rapid and systematic reviews following quality checks. See: [www.crd.york.ac.uk/PROSPERO](http://www.crd.york.ac.uk/PROSPERO).

COCHRANE library is a collection of databases that contain high-quality, independent evidence to inform healthcare decision-making. See: [www.cochranelibrary.com](http://www.cochranelibrary.com).

The above were searched to ensure that any similar reviews were not underway or had already been published, which is accurate to the authors' knowledge at the time of searching.

## **Searching and search terms**

The search was conducted in June 2023. In consultation with the same expert information scientist who advised on the selection of databases, the following search string was agreed upon and entered into all the databases.

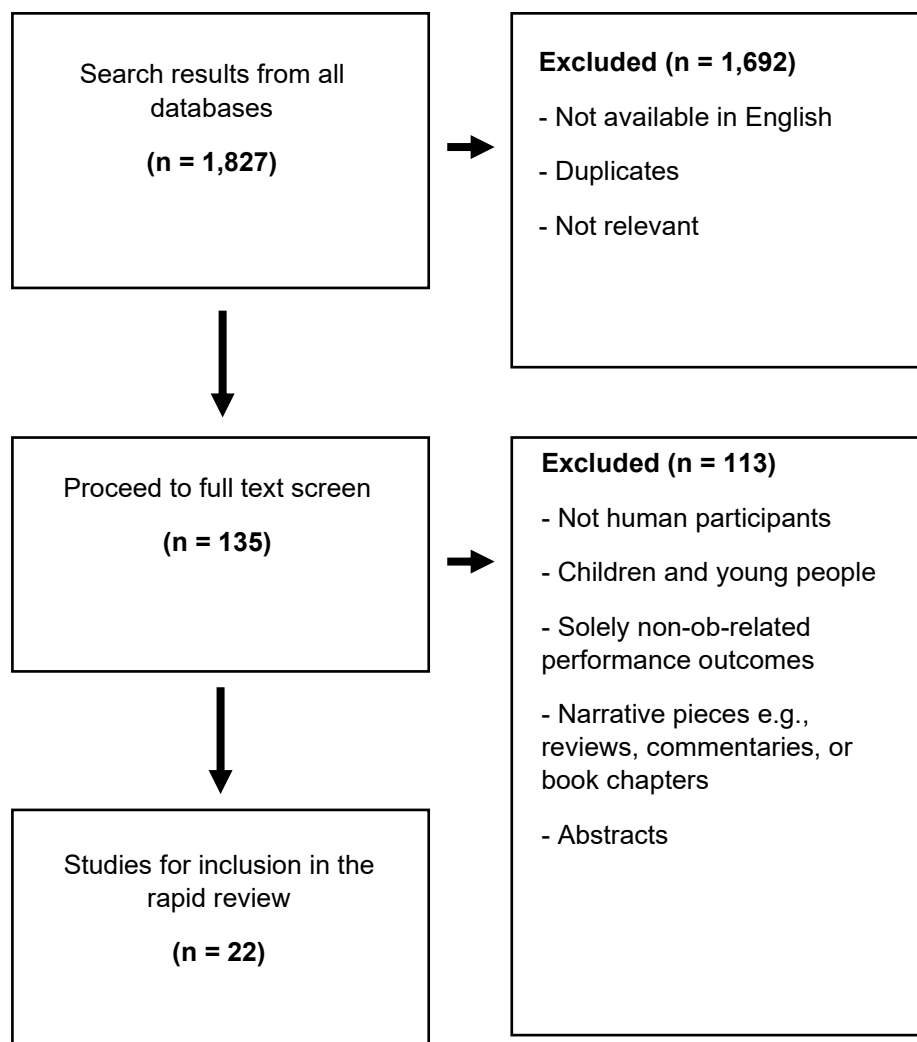
(Exercise OR Exercise Training OR Physical Activity OR Physical Inactivity OR Physical Training OR Sedentary Behaviour) AND (Efficiency OR Employment OR Labour Market OR Job Market OR Organisational Efficiency OR Organisational Productivity OR Productivity OR Unemployment OR Work Engagement OR Workforce OR Workplace) AND (East Midlands OR Midlands OR West Midlands OR United Kingdom)

## Screening and data extraction

Information on all identified articles was exported to an Excel spreadsheet to allow for titles and abstracts to be independently screened by two members of the research team. A RAG traffic light system was implemented by each member to categorise articles as: meeting the inclusion criteria (green), more information needed before a decision could be made and/or discussion warranted (amber), or exclusion from the review (red).

Discussion took place between the two review team members to ensure continuity and mutual agreement on included and excluded papers. Articles needing more clarity were read before a decision on inclusion or exclusion was made. In the case of any disagreements unresolvable by discussion, a third reviewer on the research team was contacted for mediation to reach a consensus.

All articles deemed to meet the inclusion criteria were read in full, using a screening tool (see Appendix 2). Key relevant demographics, methods and key findings were extracted and reported in tables. In addition, reference lists were checked for additional primary sources not identified by searching. The search filtering process is detailed in Figure 1.1 below.



**Figure 1.1** – Adapted PRISMA flow diagram.

## **Data Analysis**

As this is a rapid review, inferential statistical data analysis has not been undertaken. However, key findings from the included studies will be used to comment on the plausibility of a link between physical inactivity and labour market participation and productivity in the general discussion of this report presented after section 3.

## **Results**

22 studies met the inclusion criteria for this rapid review and were included.

Table 1.2 provides details of the included studies including a brief description of the methods.

**Table 1.2 – Details of the included studies.**

<b>No.</b>	<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Journal</b>	<b>Design</b>	<b>Methods</b>
1	Audrey, S. et al.	2015	Employers' views of promoting walking to work: A qualitative study.	The International Journal of Behavioral Nutrition and Physical Activity	Cross-Sectional - Qualitative	Digitally recorded interviews with 29 employers from a range of small, medium and large workplaces who participated in a feasibility study to develop and test an employer-led scheme to promote walking to work.
2	Baker, R. et al.	2018	A detailed description of the short-term musculoskeletal and cognitive effects of prolonged standing for office computer work.	Ergonomics	Experimental	Twenty adult participants undertook two hours of laboratory-based standing computer work.
3	Carter, S.E. et al.	2020	Relationship between sedentary behavior and physical activity at work and cognition and mood.	Journal of Physical Activity & Health	Cross-sectional - Quantitative	75 healthy full-time workers (33 male, mean [SD]; 33.6 [10.4] y, 38 [7] work hr/wk) wore sedentary behaviour (activPAL) and PA (SenseWear Pro) monitors for 7 days and recorded their work hours. The day after this monitoring period, participants completed cognitive tests (executive function, attention, and working memory) and mood questionnaires (affect, alert, content, and calm).
4	Clohessy, T. et al.	2021	Does passion for physical activity spill over into performance at work? Examining the direct and indirect effects of passion and life satisfaction on organisational performance and innovativeness.	International Journal of Sport and Exercise Psychology	Cross-sectional - Quantitative	Survey data were gathered from 272 cyclists who also occupied employment roles outside their cycling pursuits. Data were analysed using structural equation modelling.
5	Edmunds, S. et al.	2013	The effects of a physical activity intervention on employees in small and medium enterprises: A mixed methods study.	Work	Cross-sectional – Quantitative and Qualitative	A mixed methods evaluation design was used. Quantitative data were collected at baseline and 6 months later using an online questionnaire. Qualitative data from a series of 6 focus groups were analysed.

6	Edwardson, C.L. et al. (a)	2022	Effectiveness of an intervention for reducing sitting time and improving health in office workers: Three arm cluster randomised controlled trial.	British Medical Journal	RCT	78 clusters including 756 desk-based employees from two councils in Leicester, three in Greater Manchester and one in Liverpool. Clusters were randomised to one of three conditions: the SMART Work and Life (SWAL) intervention, the SWAL intervention with a height adjustable desk (SWAL plus desk), or control (usual practice).
7	Edwardson, C.L. et al. (b)	2018	Effectiveness of the Stand More AT (SMArT) Work intervention: Cluster randomised controlled trial.	British Medical Journal	RCT	37 office clusters (146 participants) of desk-based workers: 19 clusters (77 participants) were randomised to the intervention and 18 (69 participants) to control. The intervention group received a height adjustable workstation.
8	Engelen, L. et al.	2019	Impact and process evaluation of a co-designed 'Move More, Sit Less' intervention in a public sector workplace.	Work: Journal of Prevention, Assessment & Rehabilitation	RCT	46 adults participated in the quasi-experimental study (30 intervention; 16 control). The intervention involved providing sit-stand desks, prompts, workshops, and informational emails to assist behaviour change.
9	Hartfiel, N. et al.	2017	Cost-effectiveness of yoga for managing musculoskeletal conditions in the workplace.	Occupational Medicine	RCT	A randomised controlled trial evaluated an 8-week yoga programme, with a 6-month follow-up, for National Health Service (NHS) employees. Sickness absence was measured using electronic staff records at 6 months.
10	Haslam, C. et al.	2019	Walking Works Wonders: A tailored workplace intervention evaluated over 24 months.	Ergonomics	RCT	This article presents longitudinal data from 1120 participants across 10 worksites enrolled in Walking Works Wonders, a tailored intervention designed to increase physical activity and reduce sedentary behaviour. The intervention was evaluated over 2 years, using a quasi-experimental design comprising 3 conditions: tailored information; standard information and control.
11	Hunter, R.F. et al. (a)	2018	Effectiveness and cost-effectiveness of a loyalty scheme for physical activity behaviour change maintenance: Results from a cluster randomised controlled trial.	The International Journal of Behavioral Nutrition and Physical Activity	RCT	A cluster randomised wait-list controlled trial in public sector organisations in Northern Ireland. Employees aged 18–65 enrolled on The Physical Activity Loyalty Scheme (PAL) where participants earned points for minutes of activity that could be redeemed for rewards,

						complemented by evidence-based behaviour change techniques.
12	Hunter, R.F. et al. (b)	2013	Physical activity loyalty cards for behavior change: A quasi-experimental study.	American Journal of Preventive Medicine	RCT	Two-arm quasi-experimental design. Setting/participants: Employees (n = 406) in a workplace setting in Belfast, Northern Ireland, UK. Intervention: Using a loyalty card to collect points and earn rewards, participants (n = 199) vs participants (n = 207) in the comparison group used their loyalty card to self-monitor their PA levels but were not able to earn points or obtain incentives (no incentive group).
13	Kazi, A. et al.	2019	Sedentary behaviour and health at work: An investigation of industrial sector, job role, gender and geographical differences.	Ergonomics	Cross-sectional-Quantitative	1120 employees across 10 worksites enrolled in a workplace PA intervention were provided with a questionnaire.
14	Khanal, S. et al.	2016	Evaluation of the implementation of Get Healthy at Work, a workplace health promotion program in New South Wales, Australia.	Health Promotion Journal of Australia	Cross-sectional - Quantitative	Routinely collected workplace health programme (WHP) and Brief Health Checks (BHC) programme data between July 2014 and February 2016 were analysed. A baseline online survey regarding workplace health promotion was conducted with 247 key contacts at registered GHaW worksites and a control group of 400 key contacts from a range of businesses.
15	Lechner, M. and Downward, P.	2017	Heterogeneous sports participation and labour market outcomes in England.	Applied Economics	Cross-sectional - Quantitative	Used data that are synthesised from three major surveys. The main source of data being the ongoing Active People Survey (APS).
16	Lechner, M. and Sari, N.	2015	Labor market effects of sports and exercise: Evidence from Canadian panel data.	Labour Economics	Cross – sectional - Quantitative	Based on the Canadian National Population Health Survey from 1994 to 2008, the effects of individual sports and exercise on individual labour market outcomes are analysed.
17	Michaud, T.L. et al.	2022	Cost and cost-effectiveness of the 'Stand and Move at Work' multicomponent intervention to reduce workplace sedentary time and cardio metabolic risk.	Scandinavian Journal of Work, Environment & Health	RCT	Retrospective within-trial cost and cost-effectiveness analysis (CEA) to compare a 12-month multilevel intervention with (STAND+) and without (MOVE+) a sit-stand workstation, across 24 worksites (N=630 employee participants) enrolled in a cluster randomised clinical trial.

<b>18</b>	Mytton, O.T. et al.	2016	Longitudinal associations of active commuting with wellbeing and sickness absence.	Preventive Medicine:	Cross-sectional - Quantitative	Data from the Commuting and Health in Cambridge study (2009 to 2012; n=801) was used to test associations between: a) maintenance of cycling (or walking) to work over a one-year period and indices of wellbeing at the end of that one-year period and sickness absence.
<b>19</b>	Page, N.C. et al.	2017	Active commuting: Workplace health promotion for improved employee wellbeing and organizational behavior.	Frontiers in Psychology	Intervention	Employees of a UK-based organisation participated in a workplace travel behaviour change intervention and used e-bikes as an active commuting mode; this was a change to their usual passive commuting behaviour.
<b>20</b>	Thøgersen-Ntoumani, C. et al. (a)	2017	Presenteeism, stress resilience, and physical activity in older manual workers: A person-centred analysis.	European Journal of Ageing	Cross-sectional - Quantitative	Older manual workers (n = 217; 69.1% male; age range 50–77; M age = 57.11 years; SD = 5.62) from a range of UK-based organisations, representing different manual job roles, took part in the study. A cross-sectional survey design was used.
<b>21</b>	Thøgersen-Ntoumani, C. et al. (b)	2015	Changes in work affect in response to lunchtime walking in previously physically inactive employees: A randomized trial.	Scandinavian Journal of Medicine & Science in Sports	Intervention	Physically inactive employees (N = 56; M age = 47.68; 92.86% female) from a large university in the UK were randomised to immediate treatment or delayed treatment (DT). During the intervention period, participants partook in three weekly 30-minute lunchtime group-led walks for 10-weeks.
<b>22</b>	Thøgersen-Ntoumani, C. et al. (c)	2014	A step in the right direction? Change in mental wellbeing and self-reported work performance among physically inactive university employees during a walking intervention.	Mental Health and Physical Activity	Intervention	Participants were 75 (92% female; M age = 47.68 years) previously physically inactive non-academic employees from a large British university who undertook a 16-week uncontrolled feasibility lunchtime walking trial.

A description of each of the studies including the key findings and conclusion is as follows:

**1. Audrey, S. et al. (2015). Employers' views of promoting walking to work: A qualitative study.**

This qualitative study presents the findings from in-depth, digitally recorded interviews with 29 employers from a range of small, medium and large businesses who participated in a feasibility study to develop and test an employer-led scheme to promote walking to work. All recordings were fully transcribed using the framework approach for data management. Interview transcripts were read multiple times and textual data were placed in charts focusing on facilitators, barriers, and possibilities for employers to promote walking to work.

The key findings were that a range of employer perspectives were identified, from active support through uncertainty and cynicism to resistance. Many employers were unclear about how to give practical support for employees who walk to work but appeared more confident about ideas to promote cycling. Some employers were concerned about how their attempts to promote walking might be perceived by employees, and ultimately the provision of goods and or services of their organisation took priority over any other activities, health-related or otherwise.

In conclusion, it was clear that employers needed more evidence of the effectiveness of 'walk to work' schemes and the benefits to employers of committing resources to them. Furthermore, employers needed support in creating an authentic, health promoting ethos within the workplace.

**2. Baker, R. et al. (2018). A detailed description of the short-term musculoskeletal and cognitive effects of prolonged standing for office computer work.**

20 adult participants undertook two hours of laboratory-based standing computer work to investigate changes in discomfort and cognitive function, along with muscle fatigue, movement, lower limb swelling and mental state.

Over time, discomfort increased in all body areas. Sustained attention and reaction time deteriorated, while creative problem solving improved.

There was no change in erector spinae, rectus femoris, biceps femoris or tibialis anterior muscle fatigue; low back angle changed towards less lordosis, pelvic movement increased, lower limb swelling increased and mental state deteriorated. Finally, bodily discomfort was positively correlated with mental state.

In conclusion, standing is encouraged and being used to replace sitting by office workers, however there are health risks associated with prolonged standing. In a laboratory study involving two hours of prolonged standing, discomfort increased (all body areas), reaction time and mental state deteriorated while creative problem solving improved. Prolonged standing should be undertaken with caution.



### **3. Carter, S.E. et al. (2020). Relationship between sedentary behavior and physical activity at work and cognition and mood.**

A total of 75 healthy full-time workers (33 male, mean age= 33.6; SD=10.4 years; mean work hours= 38; SD= 7 work hours/week) wore activity monitors that recorded both sedentary behaviour (activPAL) and physical activity (SenseWear Pro) for seven days during work hours. The day following this monitoring period, participants completed cognitive tests (executive function, attention, and working memory) and mood questionnaires (affect, alert, content, and calm).

Multiple linear regression analyses examined the associations between cognition and mood and the time spent sitting, standing, and in each physical activity intensity during work hours, weekday leisure time, and weekends.

The key findings are that workplace sitting, standing, or physical activity were not significantly associated with cognition or mood. No significant associations were observed between these variables during weekday leisure time or weekends.

In conclusion, in a cohort of healthy workers, workplace sitting, standing, and physical activity are not associated with cognition or mood.

### **4. Clohessy, T. et al. (2021). Does passion for physical activity spillover into performance at work? Examining the direct and indirect effects of passion and life satisfaction on organisational performance and innovativeness.**

The aim of this study was to examine the direct and indirect relationships between passion (harmonious and obsessive) for physical activity, life satisfaction, performance, and innovativeness in organisational settings. Harmonious passion is when the person chooses to engage of their own free will. Obsessive passion is becoming obsessed with, or relentlessly pursuing, that which one is passionate about.

Survey data were gathered from 272 cyclists who had occupied employment roles outside their cycling pursuits. Data were analysed using structural equation modelling.

Key findings are a direct positive relationship between harmonious passion and both performance and innovativeness at work. Moreover, results indicated that perceived life satisfaction indirectly influenced the relationships between harmonious passion and both performance and innovativeness at work. No significant relationships were found between obsessive passion for cycling and either organisational performance outcome.

In conclusion, these findings suggest that passion for physical activity directly and indirectly (through life satisfaction) enhances organisational performance outcomes but only for harmonious passion.

### **5. Edmunds, S. et al (2013). The effects of a physical activity intervention on employees in small and medium enterprises: A mixed methods study.**

89 previously physically inactive employees were recruited from 17 small and medium-sized organisations. Using a mixed methods evaluation design, quantitative data was collected at baseline and six months after the 'Workplace Activator Programme' using an online questionnaire. In addition, qualitative data from six focus groups were analysed.

The key findings were significant increases in physical activity, general health rating, satisfaction with life and positive mood states over time due to the physical activity intervention. There were significant decreases in body mass index (BMI), perceived stress, negative mood states and presenteeism. However, there was no change in absenteeism.

Analysis of focus group data provided further insight into the impact of the physical activity intervention resulting in five major themes: 1) awareness of physical activity; 2) sustaining physical activity behaviour change; 3) improved health and wellbeing; 4) enhanced social networks; and 5) embedding physical activity in the workplace culture.

In conclusion, this study shows it is feasible and effective to train employees in small and medium-sized enterprises to be more active and support their colleagues in physical activity behaviour change.

#### **6. Edwardson, C.L. et al. (a) (2022). Effectiveness of an intervention for reducing sitting time and improving health in office workers: Three arm cluster randomised controlled trial.**

The main objective of this study was to evaluate the effectiveness of an intervention (with and without a height-adjustable desk) on daily sitting time, and to investigate the relative effectiveness of the two interventions, and the effectiveness of both interventions on physical behaviours and physical, biochemical, psychological, and work-related health and performance outcomes.

This randomised controlled trial had three arms which were followed up at three and 12 months. Employees from local councils in Leicester, Liverpool, and Greater Manchester, UK were recruited. In total, 78 clusters were formed including 756 desk-based employees in specific offices, departments, and teams from two councils in Leicester, three in Greater Manchester, and one in Liverpool. Mean age of participants was 44.7 years, 72.4% ( $n=547$ ) were women, and 74.9% ( $n=566$ ) were white. Intervention clusters were randomised to one of three conditions: 1) the SMART Work and Life (SWAL) intervention, 2) the SWAL intervention with a height adjustable desk (SWAL plus desk), or 3) control (usual practice). The primary outcome measure was daily sitting time, assessed by accelerometry, at 12-month follow-up. Secondary outcomes were accelerometer-assessed sitting, prolonged sitting, standing and stepping time, and physical activity calculated over any valid day, work hours, workdays, and non-workdays, self-reported lifestyle behaviours, musculoskeletal problems, cardiometabolic health markers, work-related health and performance, fatigue, and psychological measures.

The key findings were that daily sitting time at 12 months was significantly lower in the intervention groups (SWAL  $-22.2$  min/day, 95% confidence interval  $-38.8$  to  $-5.7$  min/day; SWAL plus desk  $-63.7$  min/day,  $-80.1$  to  $-47.4$  min/day) compared with control. Both intervention groups were associated with small improvements in stress, wellbeing and vigour, and the SWAL plus desk group was associated with improvements in pain in the lower extremities, social norms for sitting and standing at work, and support.

In conclusion, both SWAL and SWAL plus desk were associated with a reduction in sitting time, although the addition of a height adjustable desk was found to be more effective.

**7. Edwardson, C.L. et al. (2018). Effectiveness of the Stand More AT (SMaRT) Work intervention: Cluster randomised controlled trial.**

To evaluate the impact of a multicomponent intervention (Stand More AT (SMaRT) Work) designed to reduce sitting time on short- (three months), medium- (six months), and longer-term (12 months) changes in occupational, daily, and prolonged sitting, standing, and physical activity, and physical, psychological and work-related health.

The research design was a two-arm randomised controlled trial that was based in the English National Health Service. In total, 37 office clusters including 146 participants of desk-based workers were formed: 19 clusters (77 participants) were randomised to the intervention and 18 clusters (69 participants) to the control. The intervention group received a height-adjustable workstation, a brief seminar with supporting leaflet, workstation instructions with sitting and standing targets, feedback on sitting and physical activity at three time points, posters, action planning and goal-setting booklet, self-monitoring and prompt tool, and coaching sessions (month 1 and every three months thereafter). The control group continued with usual practice.

The primary outcome was occupational sitting time (thigh-worn accelerometer). Secondary outcomes were objectively measured daily sitting, prolonged sitting ( $\geq 30$  minutes), and standing time, physical activity, musculoskeletal problems, self-reported work-related health (job performance, job satisfaction, work engagement, occupational fatigue, sickness presenteeism, and sickness absenteeism), cognitive function, and self-reported psychological measures (mood and affective states, quality of life) assessed at three, six, and 12 months.

Data was analysed using generalised estimating equation models that accounted for clustering. The key findings were that there was a significant difference between groups in occupational sitting time at 12 months, with the intervention group reducing their sitting time by an average of 83.28 minutes in a workday (95% confidence interval  $-116.57$  to  $-49.98$ ). Differences between groups were observed for occupational sitting time at three months and six months, with the intervention group having reduced their occupational sitting by an average of 50.62 minutes/ workday compared with the control group ( $-78.71$  to  $-22.54$ ). Group differences (in favour of the intervention group compared with control) were found for prolonged sitting time, standing time, job performance, work engagement, occupational fatigue, sickness presenteeism, daily anxiety, and quality of life. No differences were seen for sickness absenteeism.

In conclusion, SMaRT Work successfully reduced sitting time over the short-, medium-, and longer-term, and positive changes were observed in work-related outcomes and psychological health.

**8. Engelen, L. et al. (2019). Impact and process evaluation of a co-designed 'Move More, Sit Less' intervention in a public sector workplace.**

The primary aim of this study was to assess the efficacy and acceptability of a co-designed intervention to increase standing and reduce sitting in a public-sector office. 46 adults participated in this quasi-experimental study (30 were in the intervention group and 16 in the control group). For the intervention, sit-stand desks, prompts, workshops, and informational emails to assist behaviour change were provided.

Participants wore a thigh-mounted Actigraph GT3X+ for five working days and responded to an online questionnaire at baseline (BL), six weeks (T1) and 13 weeks (T2) post-intervention.

The key findings were that inclinometer-measured proportion of time standing increased in the intervention group from 14% (baseline) to 28% (T1) and 27% (T2) (67 minutes more standing time over an eight-hour workday). Intervention participants reduced sitting time from 79% (BL) to 63% (T1 and T2), or 80 minutes less sitting over an 8-hour workday. The control group showed no changes. Qualitative data shows that the programme was highly recommended (94%) and perceived to support behaviour change in 81% of participants.

In conclusion, the 'Move More, Sit Less' intervention appears to be efficacious in reducing sitting time and the intervention was acceptable to participants.

### **9. Hartfiel, N. et al. (2017). Cost-effectiveness of yoga for managing musculoskeletal conditions in the workplace.**

The aim of this study was to assess the cost-effectiveness of yoga for managing musculoskeletal conditions. Using a randomised controlled trial, an eight-week yoga programme, with a six-month follow-up, was evaluated in 151 National Health Service employees. Effectiveness in managing musculoskeletal conditions was assessed using repeated-measures generalised linear modelling for the Roland-Morris Disability Questionnaire (RDQ) and the Keele STarT Back Screening Tool. Cost-effectiveness was determined using area-under-the-curve linear regression for assessing Health Related Quality of Life from healthcare and societal perspectives. The incremental cost per quality-adjusted life year (QALY) was also calculated and sickness absence was measured using electronic staff records at six months.

The main findings were, at six months, mean differences between groups favouring yoga were observed for RDQ [-0.63 (95% CI, -1.78, 0.48)], Keele STarT [-0.28 (95% CI, -0.97, 0.07)] and HRQL (0.016 Quality Adjusted Life Years gain). From a healthcare perspective, yoga yielded an incremental cost-effectiveness ratio of £2,103 per QALY. Given local authorities' typical willingness to pay for an additional QALY of £20,000, the probability of yoga being cost-effective was 95%. From a societal perspective, yoga was the dominant treatment compared with usual care. At six months, electronic staff records showed that yoga participants missed a total of two working days due to musculoskeletal conditions compared with 43 days for usual care participants.

In conclusion, yoga for NHS employees can enhance HRQL, reduce disability associated with back pain, reduce sickness absence due to musculoskeletal conditions and is likely to be cost-effective.

### **10. Haslam, C. et al. (2019). Walking Works Wonders: A tailored workplace intervention evaluated over 24 months.**

In this study, 10 worksites enrolled 1120 participants in Walking Works Wonders, a tailored intervention designed to increase physical activity and reduce sedentary behaviour. The intervention was evaluated over 2 years, using a quasi-experimental design comprising three conditions: 1) tailored information; 2) standard information and 3) control. The impact of the intervention on objective measures (BMI, % body fat mass, waist circumference, blood pressure and heart rate) and self-reported measures of physical activity, sedentary behaviour, physical and psychological health was examined.

The key findings were that interventions tailored to employees' stage of change based on the transtheoretical model of behaviour change significantly reduced BMI and waist circumference

compared to standard and control conditions. Employees who received either a standard or tailored intervention demonstrated significantly higher work ability, organisational commitment, job motivation, job satisfaction and a reduction in intention to quit the organisation. These results suggest that adopting a tailored approach to interventions is particularly effective in terms of improving health in the workplace.

In conclusion, interventions are more effective in improving health outcomes where the information is tailored to employees' stage of change.

### **11. Hunter, R.F. et al. (a) (2018). Effectiveness and cost-effectiveness of a loyalty scheme for physical activity behaviour change maintenance: Results from a cluster randomised controlled trial.**

The study evaluated the effectiveness and cost-effectiveness of a Physical Activity Loyalty Scheme (PAL) intervention providing rewards for increasing physical activity in public sector employees. Using a cluster, randomised, wait-list controlled trial design in public sector organisations in Northern Ireland, clusters were randomly assigned (1:1) using a computer-generated random sequence.

Employees aged 18–65 years with no self-reported medical contraindications to physical activity were included. Between September 2014 and October 2015, 37 clusters (from nine organisations; mean clusters per organisation=4) and 853 participants to the intervention ( $n=19$  with 457 participants) or control group ( $n=18$  with 396 participants) were formed.

The intervention was based on high-street loyalty cards in which participants earned points for minutes of physical activity that could be redeemed for rewards, complemented by evidence-based behaviour change techniques. The primary outcome was objectively measured mean steps/day at 6 months using a validated pedometer (Yamax Digi-Walker CW-701) over 7 days, assessed with intention to treat analysis. Secondary outcomes included health, mental wellbeing, quality of life, work absenteeism and presenteeism, and use of healthcare resources. Cost-effectiveness, cost-benefit and mediation analyses were conducted.

The key findings were that mean steps/day were significantly lower in the intervention vs control group (adjusted mean difference=-336, 95% CI: -612 to -60) at six months. Participants redeemed only 39% (SD= 43%) of their earned points. Using the Quality Adjusted Life Year outcome, the intervention was not cost effective from an NHS/PSS perspective. A net cost analysis from an employer perspective demonstrated the intervention group was associated with a mean of 2.97 h less absenteeism over a four-week period but this did not reach significance which could result in net savings ranging from £66 to £735 depending on the wage rate employed.

At four-weeks post-baseline, there were significant increases in identified regulation, integrated regulation, intrinsic motivation, social norms and intentions in intervention compared to control participants.

In conclusion, although the intervention successfully altered several mediating constructs, it did not translate into long-term behaviour change.

**12. Hunter, R.F. et al. (b) (2013). Physical activity loyalty cards for behavior change: A quasi-experimental study.**

The aim of this study was to investigate the effectiveness of financial incentives to increase physical activity in adults in the workplace. Using a two-arm, quasi-experimental design, participants were 406 employees from a workplace setting in Belfast, Northern Ireland, UK. Using a loyalty card to collect points and earn rewards, 199 participants were allocated to the Incentive Group who monitored their physical activity levels and received financial incentives (retail vouchers) for minutes of physical activity completed over the course of a 12-week intervention period. There were 207 participants in the comparison group who used their loyalty card to self-monitor their physical activity levels but were not able to earn points or obtain incentives (No Incentive Group).

The primary outcome was minutes of physical activity measured using a novel physical activity tracking system at baseline (April 2011); Week 6 (June 2011); and Week 12 (July 2011). Secondary outcomes, including a self-report measure of physical activity, were collected at baseline, Week 12, and 6 months (October 2011).

The key findings were that there were no significant differences between groups for primary or secondary outcomes at the 12-week and six-month assessments. Participants in the Incentive Group recorded 17.52 minutes of PA/week (95% CI=12.49, 22.56) compared to 16.63 minutes/week (95% CI 11.76, 21.51) in the No Incentive Group at Week 12. At 6 months, participants in the Incentive Group recorded 26.18 minutes of PA/week (95% CI= 20.06, 32.29) compared to 24.00 minutes/week (95% CI=17.45, 30.54) in the No Incentive Group.

In conclusion, financial incentives did not encourage participants to undertake more physical activity than self-monitoring physical activity.

**13. Kazi, A. et al. (2019). Sedentary behaviour and health at work: An investigation of industrial sector, job role, gender and geographical differences.**

This article presents the baseline data from 1120 employees working across 10 sites who were enrolled in a workplace physical activity intervention. The study provides data on physical activity, sedentary behaviour and health and highlights gender, geographical, job type and industrial sector differences. Sitting at work accounted for more than 60% of participants' total daily sitting time on workdays.

Weekly and monthly hours worked, body mass index (BMI) and waist circumference were significantly higher for workers in the private sector compared to the public sector. Employees in sales and customer services had significantly higher BMI scores and significantly lower scores for workability index (WAI), job satisfaction, organisational commitment and job motivation, compared to other groups.

The key finding is that work is a major contributor to sedentary behaviour and supports the pressing need for interventions particularly targeting private sector industries and sales and customer service sectors.

In conclusion, private sector employees had higher BMIs than those in the public sector and employees in sales and customer services had higher BMIs and poorer health compared to other occupations, suggesting that these groups should be targeted in workplace interventions.

#### **14. Khanal, S. et al. (2016). Evaluation of the implementation of Get Healthy at Work, a workplace health promotion program in New South Wales, Australia.**

Get Healthy at Work (GHaW) is a programme to reduce chronic disease risk among New South Wales (NSW), Australia workers by helping them make small changes to modifiable lifestyle chronic disease risk factors and create workplace environments that support healthy lifestyles. It has two primary components: 1) a workplace health programme (WHP) for businesses 2) and online or face-to-face Brief Health Checks (BHCs) for workers. The aim of this study was to identify areas for improvement in the implementation of WHP and to assess the uptake of BHCs by workers.

Routinely collected WHP and BHC programme data between July 2014 and February 2016 were analysed. A baseline online survey regarding workplace health promotion was conducted with 247 key contacts at registered GHaW worksites and a control group of 400 key contacts from a range of businesses. Seven telephone interviews were conducted with service provider key contacts.

The key findings were that by February 2016, 3133 worksites (from 1199 businesses) across NSW had registered for GHaW, of which 36.8% started the programme. Similar proportions of GHaW (34.0%) and control (31.7%) businesses had existing WHPs. BHCs were completed by 12,740 workers, and, of those whose risks were assessed, 78.9% were at moderate or high risk of diabetes and 33.6% were at increased or high risk of cardiovascular disease. Approximately half (50.6%) of eligible BHC participants were referred to Get Healthy Information and Coaching Service (GHS) and 37.7% to Quitline. The uptake of face-to-face BHCs compared with online was significantly higher for males, people aged over 35 years, those undertaking less physical activity and those less likely to undertake active travel to work.

In conclusion, workplace-based health promotion programmes have potential to reach people at risk of chronic disease, but the implementation of such programmes need to be more flexible than traditional health promotion programmes in terms of delivery modes and timeframes.

#### **15. Lechner, M. and Downward, P. (2017). Heterogeneous sports participation and labour market outcomes in England.**

This study analysed a unique composite dataset measuring heterogeneous sports participation, labour market outcomes and local facilities provision, and examined the association between different types of sports participation and employment and earnings in England.

Clear associations between labour market outcomes and sports participation were established through matching estimation while controlling for some important confounding factors. Following formal sensitivity analysis, there was a link between different types of sports participation and initial access to employment and then higher income opportunities with ageing.

The key findings were a large positive association between sports participation and earnings, which appeared to be highest for fitness and outdoor sports. Furthermore, there was a negative relationship to unemployment, particularly for men. Interestingly, this reduction goes together with higher employment rates for younger men and higher retirement rates for older men.

Comparing the different sports against each other revealed that team sports can contribute most to employability, perhaps by signalling teamwork. However, this varied by age across

the genders, such that older women might need to accrue these skills, and that outdoor activities contribute most to income when sports are directly compared.

In conclusion, there appears to be a link between sports participation and the structure of the labour market connected to initial access to employment and then higher income opportunities with ageing that are associated with a career ladder.

**16. Lechner, M. and Sari, N. (2015). Labor market effects of sports and exercise: Evidence from Canadian panel data.**

The aim of this study was to estimate the effects of individual sports and exercise on individual labour market outcomes. The National Population Health Survey (NPHS) is a household survey designed to measure the health status of Canadians and to expand knowledge of health determinants including sports and exercise. The survey started in 1994 and is longitudinal, with data being collected for the same individuals every second year. In total, the survey was available for eight cycles covering the period of 1994–2008.

The main findings were that an additional 38 minutes a day of participation in sports and exercise at moderate intensity during the treatment year of 1996 generates about 10 to 20% earning effects during the study period. This total effect of \$20,724 during the study period implies a return of \$90 per hour. If the individual participated in Leisure Time Physical Activity at vigorous intensity level, the return per hour increased to \$162 per hour.

In the long run, the average gains in personal income from increasing the activity level from moderate to active were more than 10%. These gains were considerably smaller, if positive at all, when the increase is only from inactive to moderate and the effects for men and women are similar.

In conclusion, this study highlights robust positive earning effects that increase to more than 10% after some years, which broadly compares to the returns of one to two years of schooling. Interestingly, an important heterogeneity appears in the sense that only increasing the level of sports and exercise activity to a level higher than the one recommended by national and international health organisations has this clear-cut impact.

**17. Michaud, T.L. et al. (2022). Cost and cost-effectiveness of the ‘Stand and Move at Work’ multicomponent intervention to reduce workplace sedentary time and cardio metabolic risk.**

The main aim of this study was to undertake an economic evaluation of a multilevel intervention to reduce sitting time and increase light-intensity physical activity (LPA) among employees. The design was a within-trial cost and cost-effectiveness analysis (CEA) to compare a 12-month multilevel intervention with (STAND+) and without (MOVE+) a sit-stand workstation, across 24 worksites with 630 employees participating in a cluster randomised clinical trial. Intervention costs were estimated using a physical activity-based costing strategy. The intervention costs were further expressed as per person and per worksite.

CEA was conducted using an incremental cost-effectiveness ratio (ICER) metric, expressed as costs for additional unit of sitting time (minute/day), LPA (minutes/day), cardiometabolic risk score, and quality-adjusted life years (QALY) increased/decreased at 12 months. The cost analysis and CEA from the employer perspective with a one-year time horizon was also assessed.



The key findings were that total intervention costs were \$134 and \$72 per person, and \$3939 and \$1650 per worksite for the STAND+ (*n* worksites=12; *n* employees=354) and MOVE+ (*n* worksites=12; *n* employees=276) interventions, respectively. The ICER was \$1 (95% CI \$0.8–1.4) for each additional minute reduction of workplace sitting time (standardised to eight-hour workday); and \$4656 per QALY gained at 12 months. There was a modest and non-significant change of loss of work productivity improvement (-0.03 hours, 95% CI -4.16–4.09 hours), which was associated with a \$0.34 return for every \$1 invested.

In conclusion, the multi-level intervention with sit-stand workstations has the potential to be widely implemented to reduce workplace sitting time.

### **18. Mytton, O.T. et al. (2016). Longitudinal associations of active commuting with wellbeing and sickness absence.**

The aim of this study was to explore longitudinal associations of active commuting (cycling to work and walking to work) with physical wellbeing (PCS-8), mental wellbeing (MCS-8) and sickness absence. Data from the Commuting and Health in Cambridge study (2009 to 2012; *n*=801) was examined to test associations between: a) maintenance of cycling (or walking) to work over a one-year period and indices of wellbeing at the end of that one year period, and b) associations between change in cycling (or walking) to work and change in indices of wellbeing. Linear regression was used for testing associations with PCS-8 and MCS-8, and negative binomial regression for sickness absence.

The main findings were that, after adjusting for sociodemographic variables, physical activity and physical limitation, those who maintained cycle commuting reported lower sickness absence (0.46, 95% CI: 0.14–0.80; equivalent to one less day per year) and higher MCS-8 scores (1.50, 0.10–2.10) than those who did not cycle to work. The association for sickness absence persisted after adjustment for baseline sickness absence. No significant associations were observed for PCS-8. Associations between change in cycle commuting and change in indices of wellbeing were not significant. No significant associations were observed for walking.

In conclusion, there is some evidence of the value of cycle commuting in improving or maintaining the health and wellbeing of adults of working age. This may be important in engaging employers in the promotion of active travel and communicating the benefits of active travel to employees.

### **19. Page, N.C. et al. (2019). Active commuting: Workplace health promotion for improved employee wellbeing and organizational behavior.**

This study presents a behaviour change intervention that encourages active commuting using electrically assisted bikes (e-bikes) for health promotion in the workplace. The preliminary findings of the intervention's impact on improving employee wellbeing and organisational behaviour, as an indicator of potential business success, is highlighted. Employees of a UK-based organisation participated in a workplace travel behaviour change intervention which involved the use of e-bikes as an active commuting mode which was a change to their usual passive commuting behaviour.

The purpose of the intervention was to develop employee wellbeing and organisational behaviour for improved business success. The personal and organisational benefits of active

commuting were compared to a group of employees who did not change their behaviour and continued taking non-active commutes.

The main findings were that employees who changed their behaviour to active commuting reported more positive affect, better physical health and more productive organisational behaviour outcomes compared with passive commuters. In addition, there was an interactive effect of commuting mode and commuting distance; a more frequent active commute was positively associated with more productive organisational behaviour and more positive overall employee wellbeing, whereas a longer passive commute was associated with poorer wellbeing, although there was no impact on organizational behaviour.

In conclusion, this research provides emerging evidence of the value of a workplace health promotion initiative focused on active commuting in maintaining and improving employee wellbeing and organizational behaviour for stronger business performance.

## **20. Thøgersen-Ntoumani, C. et al. (a) (2017). Presenteeism, stress resilience, and physical activity in older manual workers: A person-centred analysis.**

The main aim of this study was to use a person-centred approach to explore typologies of older manual workers based on presenteeism, stress resilience and physical activity behaviour. Older manual workers ( $n=217$ ; 69.1% male; age range 50–77 years; mean age 57.11 years;  $SD=5.62$ ) from a range of UK-based organisations, representing different manual job roles, took part in the study. A cross-sectional survey design was used. Based on the three input variables: 1) presenteeism, 2) stress resilience and 3) physical activity, four distinct profiles were identified using Latent Profile Analysis.

One group ('High sport/exercise and well-functioning'; 5.50%) engaged in high levels of sport/exercise and exhibited low levels of stress resilience and all types of presenteeism. Another profile ('Physically burdened'; 9.70%) reported high levels of work and leisure-time physical activity, low stress resilience, as well as high levels of presenteeism due to physical and time demands. A 'Moderately active and functioning' group (46.50%) exhibited moderate levels on all variables. Finally, the fourth profile ('Moderately active with high presenteeism'; 38.20%) reported engaging in moderate levels of physical activity and had relatively high levels of stress resilience, yet also high levels of presenteeism. The profiles differed on work affect and health perceptions largely in the expected directions. There were no differences between the profiles in socio-demographics.

In conclusion, these results highlight complex within-person interactions between presenteeism, stress resilience, and physical activity in older manual workers. The identification of profiles of older manual workers who are at risk of poor health and functioning may inform targeted interventions to help retain them in the workforce for longer.

## **21. Thøgersen-Ntoumani, C. et al. (b) (2015). Changes in work affect in response to lunchtime walking in previously physically inactive employees: A randomized trial.**

The purpose of the present study was to examine the effect of lunchtime walks on momentary work affect at the individual and group levels. Physically inactive employees ( $n=56$ ; mean age=47.68 years; 92.86% female) from a large university in the UK were randomised to immediate treatment or delayed treatment (DT). The DT participants completed both a control and intervention period. During the intervention period, participants undertook three weekly

30-min lunchtime group-led walks for 10 weeks. They completed twice daily affective reports at work (morning and afternoon) using mobile phones on two randomly chosen days per week. Multilevel modelling was used to analyse the data.

The main findings were that lunchtime walks improved enthusiasm, relaxation, and nervousness at work, although the pattern of results differed depending on whether between-group or within-person analyses were conducted.

In conclusion, the intervention was effective in changing some affective states which has implications for public health and workplace performance.

**22. Thøgersen-Ntoumani, C. et al. (c) (2014). A step in the right direction? Change in mental wellbeing and self-reported work performance among physically inactive university employees during a walking intervention.**

The main purpose of this study was to examine wellbeing and work performance changes accompanying participation in a 16-week uncontrolled feasibility lunchtime walking trial. Participants were 75 (92% female; mean age=47.68 years) previously physically inactive, non-academic employees from a large British university. Multilevel modelling analyses examined wellbeing and work performance trajectories from baseline to post-intervention, to four months later, controlling for group membership and trait affectivity.

The main findings were increases in perceptions of health, subjective vitality, and work performance with decreases found in fatigue experienced at work. Changes were sustained four months after the end of the intervention. No changes were identified for enthusiasm, nervousness and relaxation at work.

In conclusion, although this was a relatively small uncontrolled feasibility trial, the results suggest that participation in a walking programme may be associated with sustainable well-being benefits and improvements in perceptions of work performance.

A summary of the key findings for all studies can be found in Table 1.3 below.

**Table 1.3** - Summary of the key findings in the included studies.

<b>No.</b>	<b>Author</b>	<b>Year</b>	<b>Job performance-related outcomes measured</b>	<b>Key findings</b>	<b>Conclusion</b>
1	Audrey, S. et al.	2015	a) Happiness	a) A happier workforce was linked to productivity	Employers need more evidence of the effectiveness of walk to work schemes and the benefits to employers of committing resources to them. Furthermore, employers need support in creating an authentic health-promoting ethos within the workplace to enhance positive relationships and reduce tensions that may arise when promoting active travel initiatives.
2	Baker, R. et al.	2018	a) Discomfort b) Attention reaction time c) Muscle fatigue d) Mental state	a) Increased in all body areas b) Decreased c) No change d) Positive change over time	Observed changes suggest replacing office work sitting with standing should be done with caution.
3	Carter, S.E. et al	2020	a) Cognition b) Mood	a) No association b) No association	In a cohort of healthy workers, workplace sitting, standing, and PA are not associated with cognition or mood.
4	Clohessy, T. et al.	2021	a) Harmonious passion at work b) Performance at work c) Innovativeness at work	a) Increased b) Increased c) Increased	Findings suggest that passion for physical activity directly and indirectly (through life satisfaction) enhances organisational performance outcomes.
5	Edmunds, S. et al.	2013	a) Perceived stress b) Negative mood states c) Presenteeism d) Absenteeism	a) Decreased b) Decreased c) Decreased d) No change	It is feasible and effective to train employees in small and medium-sized enterprises to support their colleagues in physical activity behaviour change.
6	Edwardson, C.L. et al. (a)	2022	a) Stress b) Work engagement c) Job performance d) Job satisfaction e) Occupational fatigue recovery	a) Decreased b) Increased c) Increased d) Increased e) Increased	The SWAL intervention, delivered with and without a height-adjustable desk and by workplace champions, was effective.

<b>7</b>	Edwardson, C.L. et al. (b)	2018	a) Job performance b) Job satisfaction c) Work engagement d) Occupational fatigue e) Sickness presenteeism f) Sickness absenteeism g) Cognitive function	a) Increased b) Increased c) Increased d) Decreased e) Decreased f) No change g) Increased	The intervention had a positive impact on musculoskeletal conditions and many work-related outcomes such as job performance, work engagement, occupational fatigue, and sickness presenteeism, as well as being beneficial for psychological outcomes such as daily anxiety and quality of life.
<b>8</b>	Engelen, L. et al.	2019	a) Work performance	a) Non-significant increase	The intervention was effective in reducing objectively measured sitting time and increasing standing and stepping time and was also associated with positive perceptions of the workplace and participants' work performance.
<b>9</b>	Hartfiel, N. et al.	2017	a) Sickness absence	b) Decreased	Yoga for NHS employees may enhance HRQL, reduce disability associated with back pain, lower sickness absence due to musculoskeletal conditions and is likely to be cost-effective.
<b>10</b>	Haslam, C. et al.	2019	a) Work ability b) Organisational commitment c) Job motivation d) Job satisfaction e) Intention to quit the organisation	a) Increased b) Increased c) Increased d) Increased e) Decreased	Adopting a tailored approach to interventions is particularly effective in terms of improving health in the workplace.
<b>11</b>	Hunter, R.F. et al. (a)	2018	a) Absenteeism b) Presenteeism	a) Decreased b) Decreased	Intervention could result in net savings ranging from £66 to £735 depending on the wage rate employed.
<b>12</b>	Hunter, R.F. et al. (b)	2013	a) Work absenteeism- sick days (in past 6 months)	a) No difference	Financial incentives did not encourage participants to undertake more PA than self-monitoring PA.
<b>13</b>	Kazi, A. et al.	2019	a) Organisational commitment b) Job satisfaction	a) Lower in sedentary roles b) Lower in sedentary roles	Employees in sales and customer services had significantly higher BMI scores and significantly lower scores for workability index (WAI), job satisfaction, organisational commitment and job motivation compared to other groups.

<b>14</b>	Khanal, S. et al.	2016	a) Employee productivity b) Staff retention c) Sick leave	a) Increased b) Increased d) Decreased	Workplace-based health promotion programmes have potential to reach people at risk of chronic disease, but the implementation of such programmes needs to be more flexible than traditional health promotion programmes in terms of delivery modes and timeframes.
<b>15</b>	Lechner, M. and Downward, P.	2017	a) Employment b) Income	a) Increased b) Increased	There appears to be a link between sports participation and the structure of the labour market connected to initial access to employment and then higher income opportunities with ageing that are associated with the career ladder.
<b>16</b>	Lechner, M. and Sari, N.	2015	a) Personal Income b) Employment	a) Increased b) Increased	Robust positive earning effects.
<b>17</b>	Michaud, T.L. et al.	2022	a) Presenteeism b) Absenteeism c) Productivity loss	a) Decreased b) Decreased c) Decreased	Sit-stand workstations have the potential to be widely implemented within worksites and were effective in reducing workplace sitting time. Future research examining work productivity outcomes in terms of cost-benefit for employers is warranted.
<b>18</b>	Mytton, O.T. et al.	2016	a) Sickness absence	a) Lower	Some evidence of the value of cycle commuting in improving or maintaining the health and wellbeing of adults of working age. This may be important in engaging employers in the promotion of active travel and communicating the benefits of active travel to employees.
<b>19</b>	Page, N.C. et al.	2017	a) Affect b) Organisational behavior	a) Increased in those who started actively commuting b) A more frequent active commute was positively associated with more productive organisational behaviour	A workplace health promotion initiative focused on active commuting, improved employee wellbeing and organisational behaviour for stronger business performance.
<b>20</b>	Thogersen-Ntoumani, C. et al. (a)	2017	a) 'High sport/exercise and well-functioning'	a) High levels of sport/exercise and exhibited low levels of	Results highlight complex within-person interactions between presenteeism, stress

			<ul style="list-style-type: none"> <li>b) Physically burdened</li> <li>c) Moderately active and functioning</li> <li>d) Moderately active with high presenteeism</li> </ul>	<p>stress resilience and all types of presenteeism</p> <ul style="list-style-type: none"> <li>b) High levels of work and leisure-time physical activity, low stress resilience, as well as high levels of presenteeism due to physical and time demand</li> <li>c) Exhibited moderate levels on all variables</li> <li>d) Moderate levels of physical activity and had relatively high levels of stress resilience, yet also high levels of presenteeism</li> </ul>	<p>resilience, and physical activity in older manual workers.</p> <p>The identification of profiles of older manual workers who are at risk of poor health and functioning may inform targeted interventions to help retain them in the workforce for longer.</p>
<b>21</b>	Thøgersen-Ntoumani, C. et al. (b)	2015	<ul style="list-style-type: none"> <li>a) Enthusiasm</li> <li>b) Nervousness</li> <li>c) Work motivation</li> </ul>	<ul style="list-style-type: none"> <li>a) Increased</li> <li>b) Decreased</li> <li>c) Increased</li> </ul>	The intervention was effective in changing some affective states and may have broader implications for public health and workplace performance.
<b>22</b>	Thøgersen-Ntoumani, C. et al. (c)	2014	<ul style="list-style-type: none"> <li>a) Work performance</li> <li>b) Fatigue at work</li> </ul>	<ul style="list-style-type: none"> <li>a) Increased</li> <li>b) Decreased</li> </ul>	Results suggest that participation in a walking programme may be associated with sustainable wellbeing benefits and improvements in perceptions of work performance.

## **Section 1 closing remarks**

A rigorous and systematic literature search identified 22 peer-reviewed manuscripts that have explored the link between physical activity, physical inactivity, sedentary behaviour and/or sport on labour market outcomes to some extent. The main aim of this rapid review was to answer the research question, ‘Does physical inactivity reduce labour market participation and productivity?’, to which a definitive answer cannot be given based on the work of this review alone.

This is not a failure of the research team in the work it has undertaken, nor the Midlands Engine or Active Partnerships for asking the wrong question. It was assumed that we would identify studies that would, for example, analyse people who meet physical activity guidelines for health vs not meeting guidelines (i.e., inactive) that have then examined differences between productivity, absenteeism, presenteeism and health outcomes that, in turn, are influenced by other outcomes such as depression, back pain and obesity. Appropriate study designs and data is simply not available.

Nevertheless, this rapid review has achieved its secondary aim of enhancing the research team’s understanding of the topic area, which has informed data collection in sections 2 and 3. Some of the findings from the studies in this review are relevant and will be used to support the plausibility statements and recommendations presented in the general discussion section.



## Section 2 - survey

### Survey aim

The main aim of this survey was to gain the opinions of a large sample of the United Kingdom (UK) population on the impact of physical inactivity on absenteeism, presenteeism, workplace productivity and other key issues (such as leaving the job market early). Questions were derived from, and informed by, findings from the rapid review presented in Section 1.

A secondary purpose was that, if data from the sample was sufficient, it could be separated to make comparisons between the Midlands and the rest of the UK.

The final aim of the survey was to provide data that could be used to facilitate discussion in focus groups to investigate thoughts and opinions on specific issues in more detail. The survey was therefore used to garner interest in focus group participation.

### Methods

Following ethical approval from Coventry University ethics committee (Code: P162736), a digital survey was distributed via social media as well as through Coventry University, Active Partnerships and Midland Engine networks between the dates of 1<sup>st</sup> October and 17<sup>th</sup> October 2023.

Inclusion criteria for this survey were anyone living in the UK aged 18 years or over who was currently, or who had been previously, employed in any type of work whilst living in the UK. The only exclusion criterion was inability to read or understand English.

A single survey was generated and collated using JISC online surveys (<https://www.onlinesurveys.ac.uk/>), which utilised parameters to ensure that all participants completed all sections before they could progress with the survey.

Prior to dissemination, the survey was subject to consultation between Coventry University and Midlands Engine colleagues to ensure that the survey was fit for purpose, operational and would provide appropriate data. Thereafter the survey was piloted by friends and family of the project team to ensure the survey could be understood by the general public.

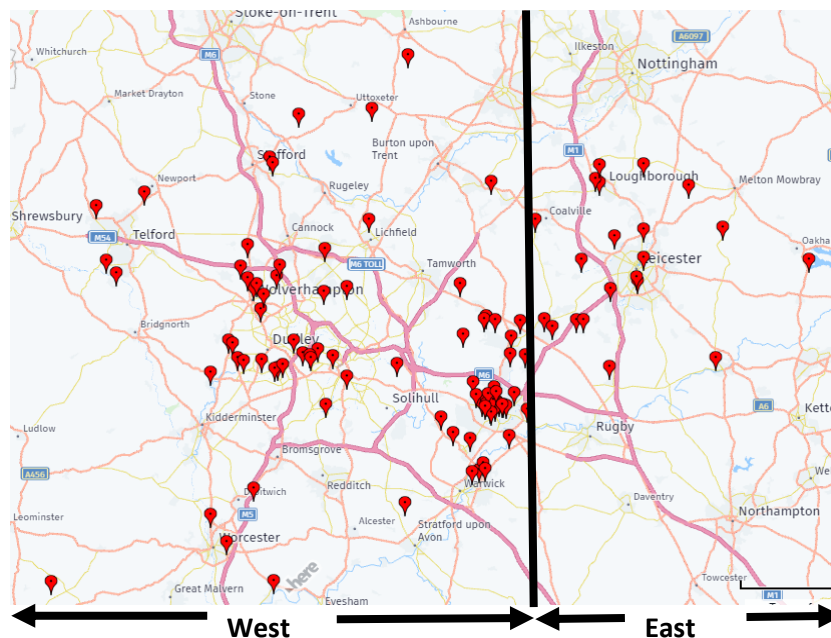
Following survey dissemination, informed consent was obtained before any potential participants completed the survey. The survey contained questions about each participant's own physical activity behaviour, their perceptions of the influence of physical activity on productivity, absenteeism, presenteeism, unemployment and job market status. The survey also sought to understand individuals' experiences and perceptions of workplace wellness programmes and individuals' experiences of various sports and how that may impact job market activity and health outcomes. Finally, the survey gathered demographic and socioeconomic data and previous employment data.

The survey generated 148 responses to produce the data analysed in this report. Of the 148 participants, 23 resided in the East Midlands and 85 resided in the West Midlands. The remaining 40 participants were from other parts of the UK. The location of survey respondents is indicated in figure 2.1. We have separated survey data into these areas of the Midlands for easy comparison between regions and the entire sample.

## RESULTS



**Figure 2.1.** Map of the location of survey participants; batch geocoding performed using [www.doogal.co.uk](http://www.doogal.co.uk).



**Section 2. Figure 2.** Map of the location of the 108 participants from the Midlands area. (85 West Midlands and 23 East Midlands) **N.B.** the divide between West and East Midlands is an approximation; batch geocoding performed using [www.doogal.co.uk](http://www.doogal.co.uk).

**Table 2.1** Survey participant characteristics

	East Midlands	West Midlands	Midlands (combined)	Entire sample
<b>Sample size (n=)</b>	23	85	108	148
<b>Age (years) [range]</b>	44 ± 16 [22 – 73]	40 ± 12 [22 – 79]	41 ± 13 [22 – 79]	41 ± 13 [22 – 79]
<b>Sex (n = M:F)</b>	9:14	31:53	40:67	56:91
<b>Education level (n=)</b>				
Degree-level or above	18	64	82	119
Other higher education below degree level	3	6	9	11
A-Levels, NVQ Level 3 and equivalents	1	8	9	10
GCSE/O-Level grade A*-C, NVQ Level 2 and equivalents	1	5	6	6
No qualification	0	1	1	1
Prefer not to say	0	1	1	1
<b>Ethnicity (n=)</b>				
White – British	20	60	80	114
White – Irish	1	2	3	5
Any other white background	0	7	7	8
Black or Black British – African	1	4	5	5
Black or black British – Caribbean	0	1	1	1
Asian or Asian British – Indian	0	6	6	6
Any other Asian background	0	1	1	1
Mixed or multiple - White and black African	0	1	1	1
Mixed or multiple - White and black Caribbean	0	1	1	2
Prefer not to say	1	1	2	3
Any other ethnic group	0	2	2	2
Any other mixed background	0	0	0	1
<b>Religion (n=)</b>				
Christian	12	32	44	61
No religion	9	40	49	69
Sikh	0	3	3	3
Hindu	0	2	2	2
Buddhist	0	0	0	1
Prefer not to say	1	5	6	7
Other	1	3	4	5
<b>Employment status (n=)</b>				
Working full-time	19	65	84	118
Working part-time	2	11	13	17
Student – In full-time education studying for a recognised qualification	0	4	4	5
Unemployed – Less than 12 months	0	0	0	1
Unemployed (long-term) – More than 12 months	0	2	2	2
Not working – Long-term sick or disabled	0	2	2	2
Not working – Retired	2	1	3	3
<b>Sector of employment (n=)</b>				
Private	2	19	21	30
Public	17	38	55	73
Voluntary	1	16	17	25
Other	1	3	4	7
<b>Employed or self-employed? (n=)</b>				
Employed	19	72	91	127
Self-Employed	2	4	6	8
<b>Area of most substantive role (n=)</b>				
Arts, entertainment, recreation & other services (R,S,T and U)	4	5	9	12
Education (P)	3	20	23	37
Health (Q)	6	31	37	45
Business administration & support services (N)	1	1	2	3
Construction (F)	0	1	1	1
Manufacturing (C)	0	2	2	2
Professional, scientific & technical (M)	0	4	4	8
Information & communication (J)	1	6	7	7
Public administration & defence (O)	2	2	4	5
Wholesale, retail trade inc. motor trades/repair (G)	0	2	2	2
Other	6	11	17	26

## Discussion of participant characteristic data

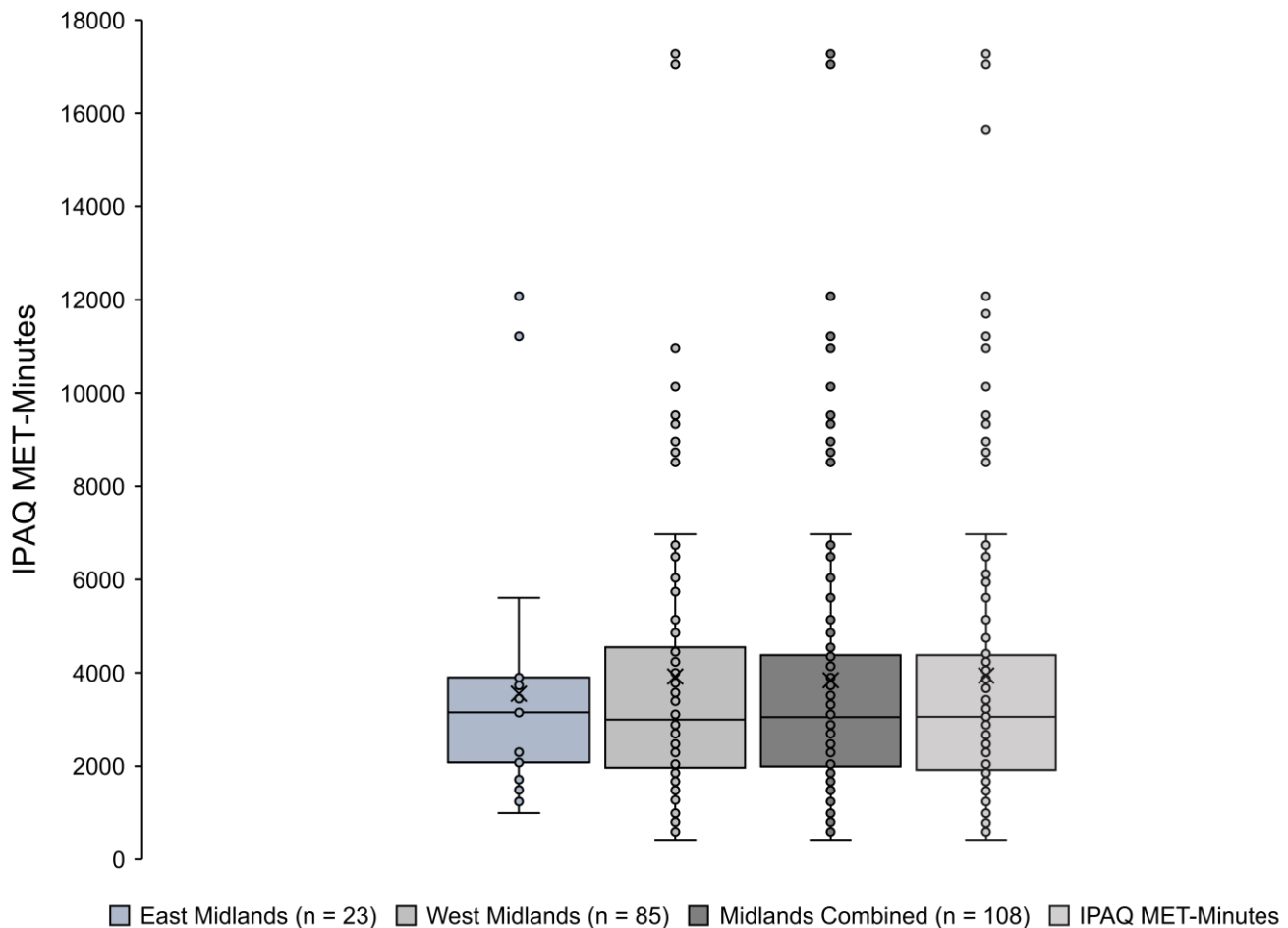
The sample mainly included individuals from the Midlands (108/148; 73%), with the West Midlands making up the majority of the Midlands responses (85/108; 79%). Although the West Midlands has 55% of the total population across the Midlands Engine, overrepresentation of the West Midlands in this sample was likely a consequence of Coventry University's networks and contacts being largely located in the West Midlands. The average age of the entire sample was 41 years, with the mean ages of survey participants being similar across both the East and West Midlands. The overall sample was approximately 62.0% female, with similar disproportional female representation for both the West Midlands (62.4%) and the East Midlands (60.9%). This sample is well-educated, with over 80.0% of participants holding a degree or higher-level qualification and a further 7.4% holding other higher education qualifications. High levels of education are consistent across all regions. This is considerably higher than the UK figures, with 33.8% of the UK population holding a degree-level qualification or higher according to 2021 Census data.

Much of the sample were from white backgrounds (85.8%) with the remaining 14.2% being comprised of several different ethnic groups, which is broadly representative of the UK according to 2021 census data (81.7% white backgrounds). Religion was largely split between atheist (46.6%) and Christian (41.2%), with various other religions making up the rest of the sample. Again, this is representative of the population-level data from the 2021 census, with 37% identifying as atheist and 46% as Christian. Similar trends for both ethnicity and religion were also observed in the two Midlands samples. The majority (91.2%) of the sample were currently employed in either full-time or part-time work, with similarly high rates of employment for both the East Midlands and the West Midlands. This is higher than the 75.5% employment rate seen throughout the UK according to Office of National Statistics (ONS) data.

Most employed participants worked in the public sector (54.1%), with another 22.2% in the private sector and a further 18.5% working in the voluntary sector. The public sector is overrepresented in this sample, with ONS data showing that, of those employed in the UK in 2023, 17.9% are public sector workers. The private sector is underrepresented, with 82.1% of UK employees working in the private sector in 2023. A large majority (94.1%) of all participants were employed as opposed to self-employed, which is higher than the national figure of approximately 13% of the UK workforce (ONS 2022 data). These general trends are similar for both the East and West Midlands. The most common areas of employment were health (30.4%) and education (25.0%), which was also true for the West Midlands, whereas health and arts, entertainment, recreation and other services made up the most substantive roles for the East Midlands.

Overall, this sample is largely homogenous, made up of well-educated people who were approximately 60% female, from white backgrounds, who are employed in the public sector. The most common area of employment was health, suggesting that these people will be more aware of good health practices than the general public. The characteristics of this sample are important to consider when generalising these findings to the wider UK population.

## Physical activity behaviour



**Figure 2.3.** Box plot showing: top error bar=max value; top box line=3<sup>rd</sup> quartile; middle box line=median; X=mean; lower box line=1<sup>st</sup> quartile; bottom error bar=minimum value for IPAQ MET-minute activity between the East Midlands, West Midlands, Midlands combined and entire sample. Individual outlier data points are also displayed.

**Table 2.2.** Median and interquartile range for all regions

Region	Median (MET-minutes)	Interquartile range (IQR)
East Midlands (n=23)	3230	1748
West Midlands (n=85)	2994	1554
Midlands combined (n= 108)	3051	2334
Entire sample (n=148)	3056	2415

*Note:* MET- minutes = A MET-minute is the amount of energy expended during a minute while at rest multiplied by minutes of physical activity; n = number of participants.

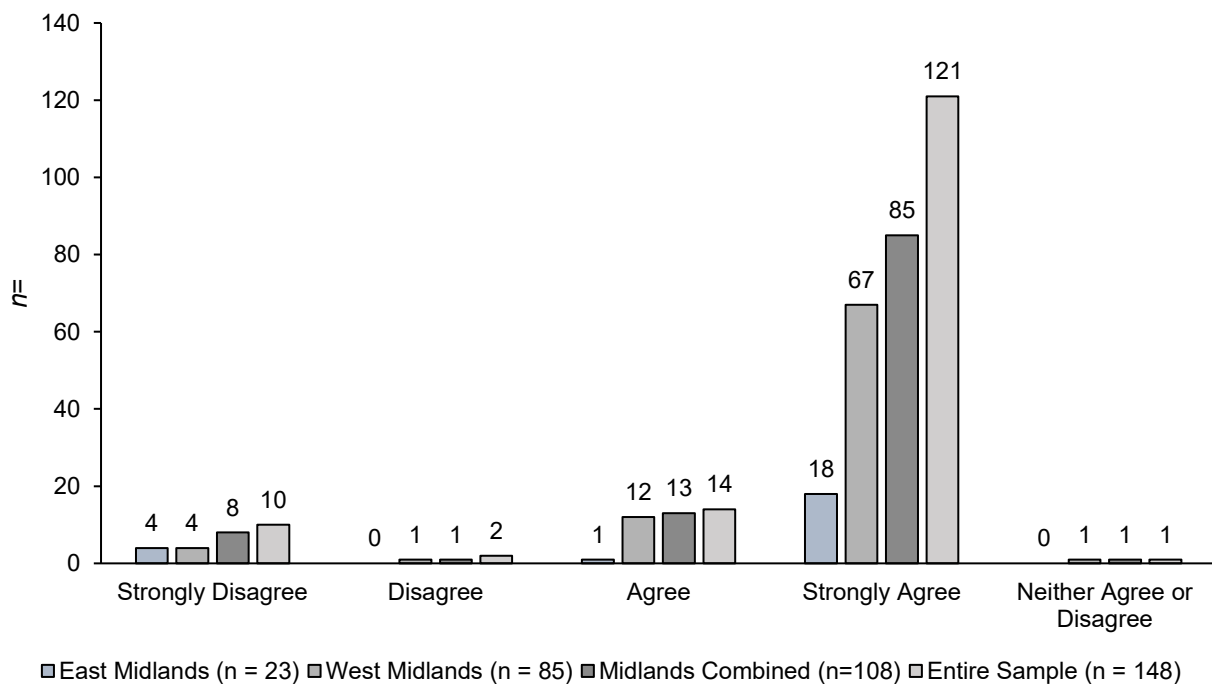
## Physical activity data explanation

Figure 2.3 and Table 2.2 display the MET-minute data for the different regions collected in the survey. Transforming data collected from the International Physical Activity Questionnaire (IPAQ) into MET-minutes is a way to quantify the volume of physical activity undertaken by weighting each type of activity by its energy requirements defined in METs (METs are multiples of the resting metabolic rate). A MET-minute is computed by simply multiplying the MET score by the minutes performed. The selected MET values were derived from work undertaken during the IPAQ Reliability Study in 2000-2001. Using the Ainsworth et al. Compendium (2000) published in the journal 'Medicine and Science in Sports and Exercise', an average MET score was derived for each type of activity. For example, all types of walking were included and an average MET value for walking was created. The same procedure was undertaken for moderate-intensity activities and vigorous-intensity activities. These following values continue to be used for the analysis of IPAQ data: Walking=3.3 METs, Moderate PA=4.0 METs and Vigorous PA=8.0 METs. In this way, data collected from the IPAQ can be scored on the sum of all activity recorded to give an overall MET-minute score which is what we have presented in this report. The IPAQ guidelines always recommend presenting and interpreting data as a median and interquartile range as opposed to means and standard deviations. A full explanation of the IPAQ scoring protocol can be found [HERE](#).

## Observed physical activity trends

As categorised by the IPAQ scoring protocol, we can see in Figure 2.3 and Table 2.2 that this sample was largely very physically active, with median scores around 3000 MET-minutes per week regardless of region.

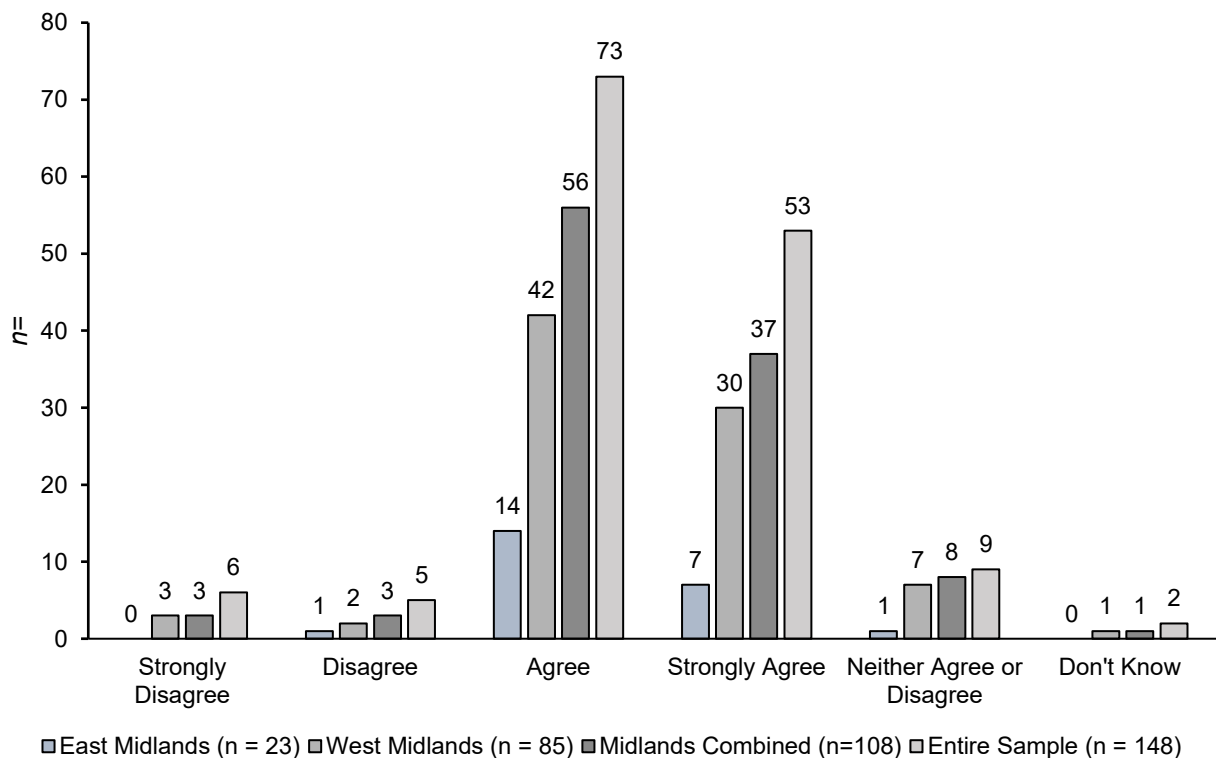
## Survey question responses



**Figure 2.4.** Responses to the question: 'To what extent do you agree with the statement: "Being physically active is important for my health"?'.

### Figure 2.4 description

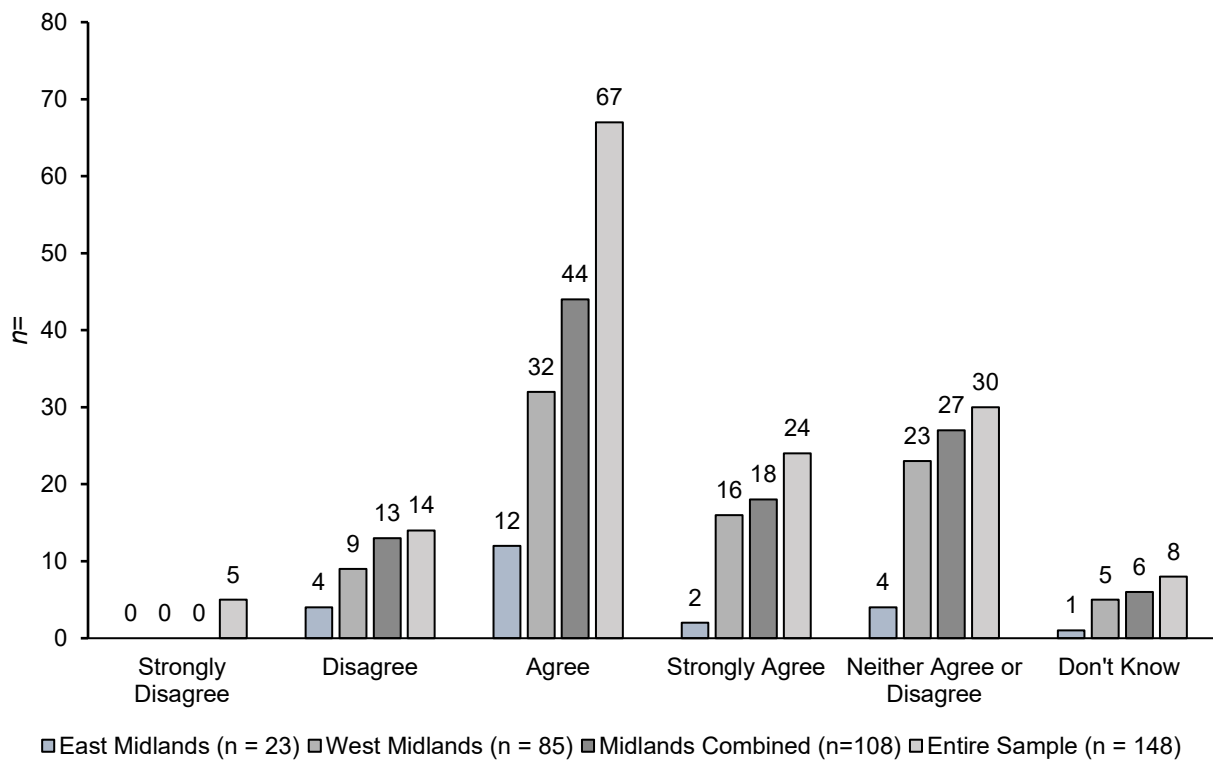
91.2% of the entire sample agreed or strongly agreed that being physically active is important for health. 90.7% of the Midlands sample (92.9% West Midlands and 82.6% East Midlands) also agreed or strongly agreed with the statement. 8.1% of the entire sample disagreed or strongly disagreed with the statement, with the figure for the Midlands being 8.3% (5.9% West Midlands and 17.4% East Midlands). Overall, this sample strongly agreed that physical activity is important to their health. However, there was a greater percentage of the sample in East Midlands that strongly disagreed with this statement. Open text responses separated by region are available in Appendix 3 and generally highlight positive perceptions of the benefits of physical activity for both mental and physical health.



**Figure 2.5.** Responses to the question: ‘To what extent do you agree with the statement: “Being physically inactive for an extended period reduces productivity at work”?’.

### Figure 2.5 description

85.1% of the entire sample agreed or strongly agreed that being physically inactive reduces productivity at work. 86.1% of the Midlands sample also agreed or strongly agreed with the statement (84.7% West Midlands and 91.3% East Midlands). Conversely, only 7.4% of the entire sample disagreed or strongly disagreed with the statement, compared with 5.6% of the Midlands sample (5.9% West Midlands and 4.3% East Midlands). More than one in ten (12.8%) participants answered ‘neither agree or disagree’ or ‘don’t know’ to the statement, with the figure for the Midlands being 8.3% (9.4% West Midlands and 4.3% East Midlands). Overall, it’s clear that this sample believed that being physically inactive reduces productivity at work. Open text responses separated by region are available in Appendix 4 and discuss participants’ diverse ideas and personal experiences of this topic.

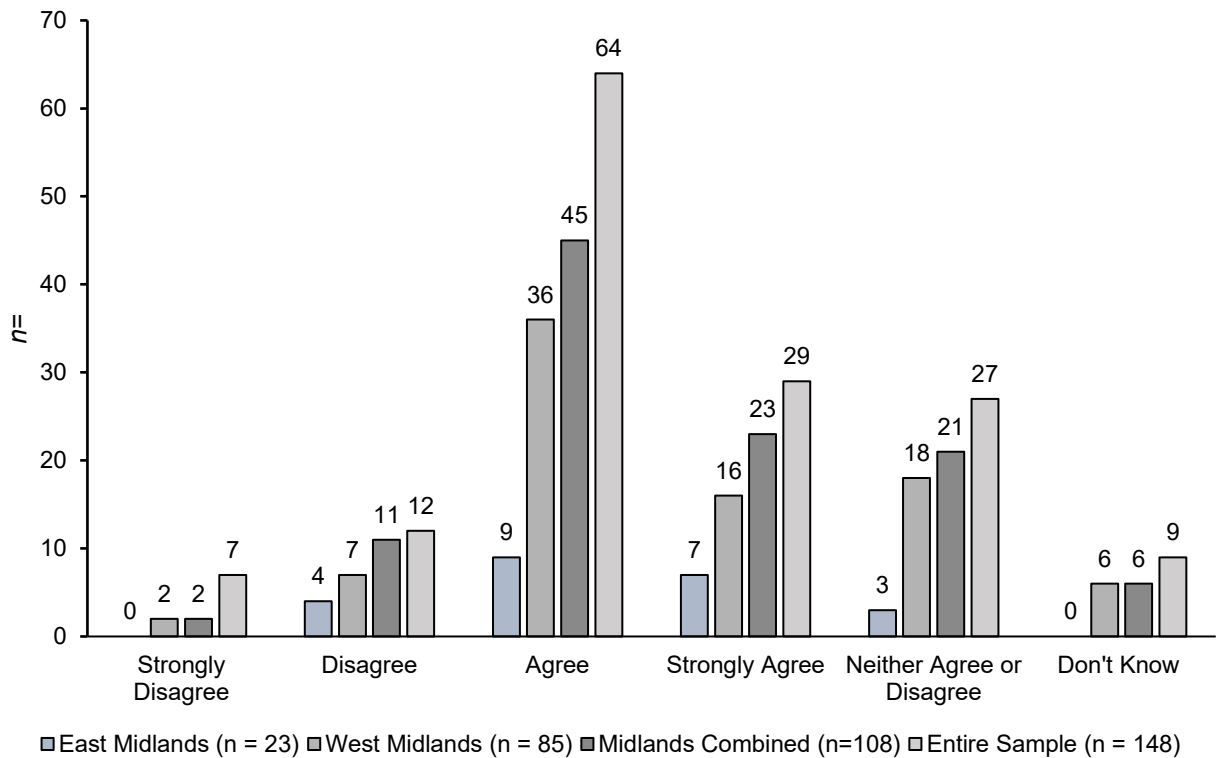


**Figure 2.6.** Responses to the question: ‘To what extent do you agree with the statement: “Being physically inactive increases absenteeism”?’.

**Figure 2.6 description**

61.5% of the entire sample agreed or strongly agreed that being physically inactive increases absenteeism. More than half (57.4%) of the Midlands sample (56.5% West Midlands and 60.9% East Midlands) also agreed or strongly agreed with the statement. A quarter (25.7%) of the entire sample answered ‘neither agree or disagree’ or ‘don’t know’ to the statement, and this figure was 30.6% for the Midlands (32.9% West Midlands and 21.7% East Midlands). More than one in ten (12.8%) of participants disagreed or strongly disagreed with the statement, with the figure for the Midlands being 12.0% (10.6% West Midlands and 17.4% East Midlands). Overall, this sample believed that being physically inactive increases absenteeism, but over one quarter of the sample were unsure. Open text responses separated by region are available in Appendix 5 where participants discussed the short- and long-term impacts of physical activity on absenteeism.

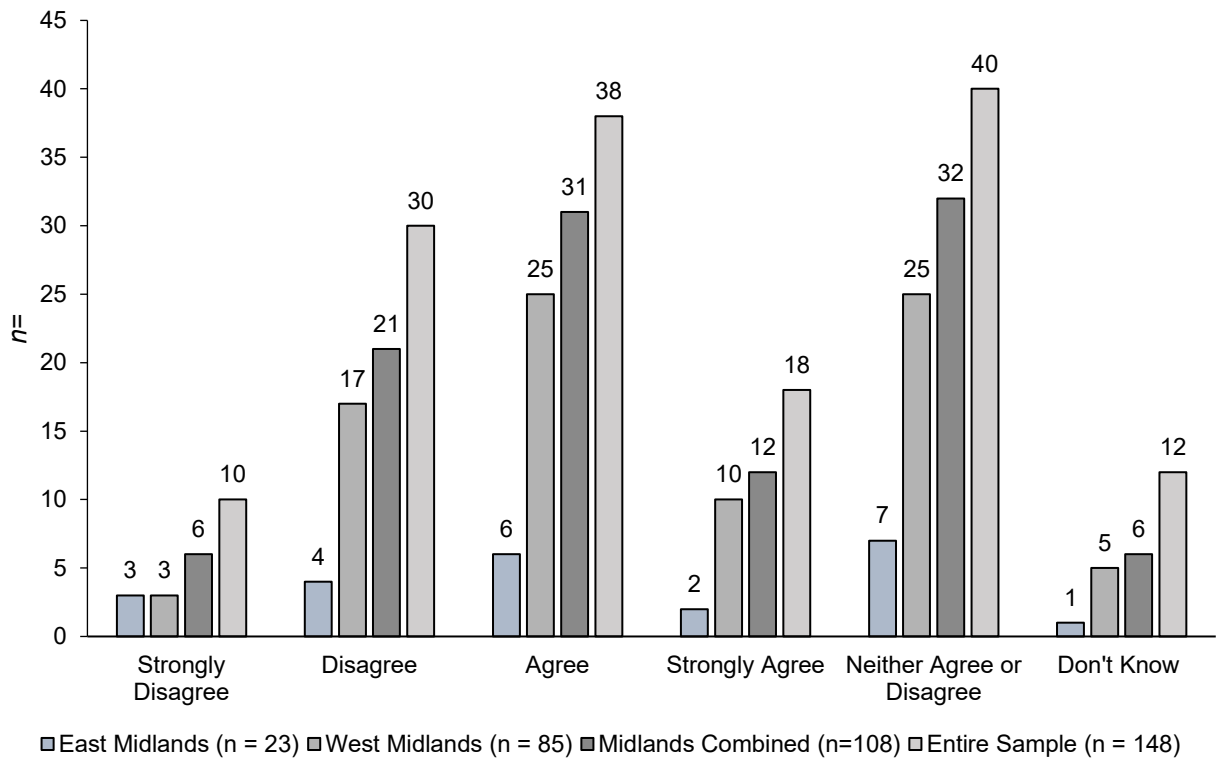




**Figure 2.7.** Responses to the question: ‘To what extent do you agree with the statement: “Being physically inactive increases presenteeism”?’.

**Figure 2.7 description**

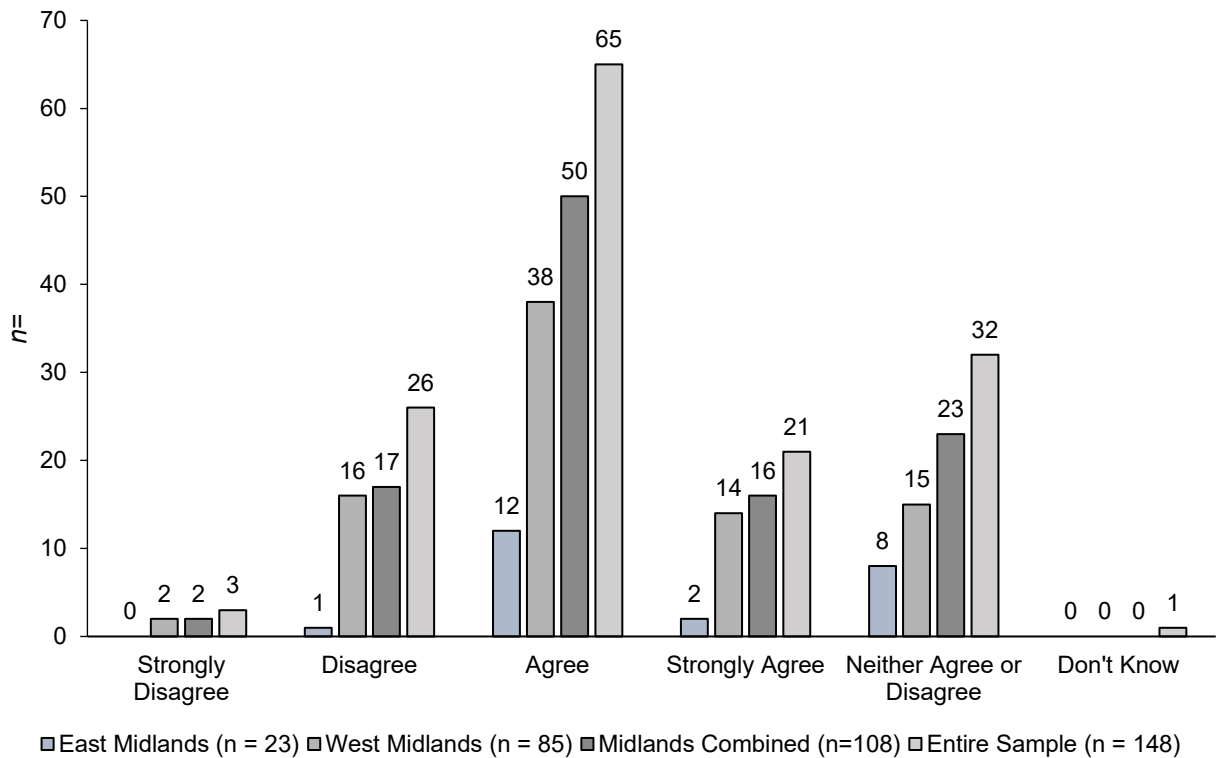
62.8% of the entire sample agreed or strongly agreed that being physically inactive increases presenteeism. Nearly two thirds (63.0%) of the Midlands sample (61.2% West Midlands and 69.9% East Midlands) also agreed or strongly agreed with the statement. 24.3% of the entire sample answered ‘neither agree or disagree’ or ‘don’t know’ to the statement. These figures were 25.0% for the Midlands (28.2% West Midlands and 13.0% East Midlands). Around one in ten people (12.8%) in the entire sample disagreed or strongly disagreed with the statement, with the figure for the Midlands being 12.0% (10.6% West Midlands and 17.4% East Midlands). Overall, this sample believed that being physically inactive increases presenteeism, but almost one quarter of the sample were unsure. Open text responses separated by region are available in Appendix 6 and discussed personal experiences and population-based opinions on this question.



**Figure 2.8.** Responses to the question: ‘To what extent do you agree with the statement: “Being physically inactive for an extended period increases the likelihood of being unemployed”?’.

**Figure 2.8 description**

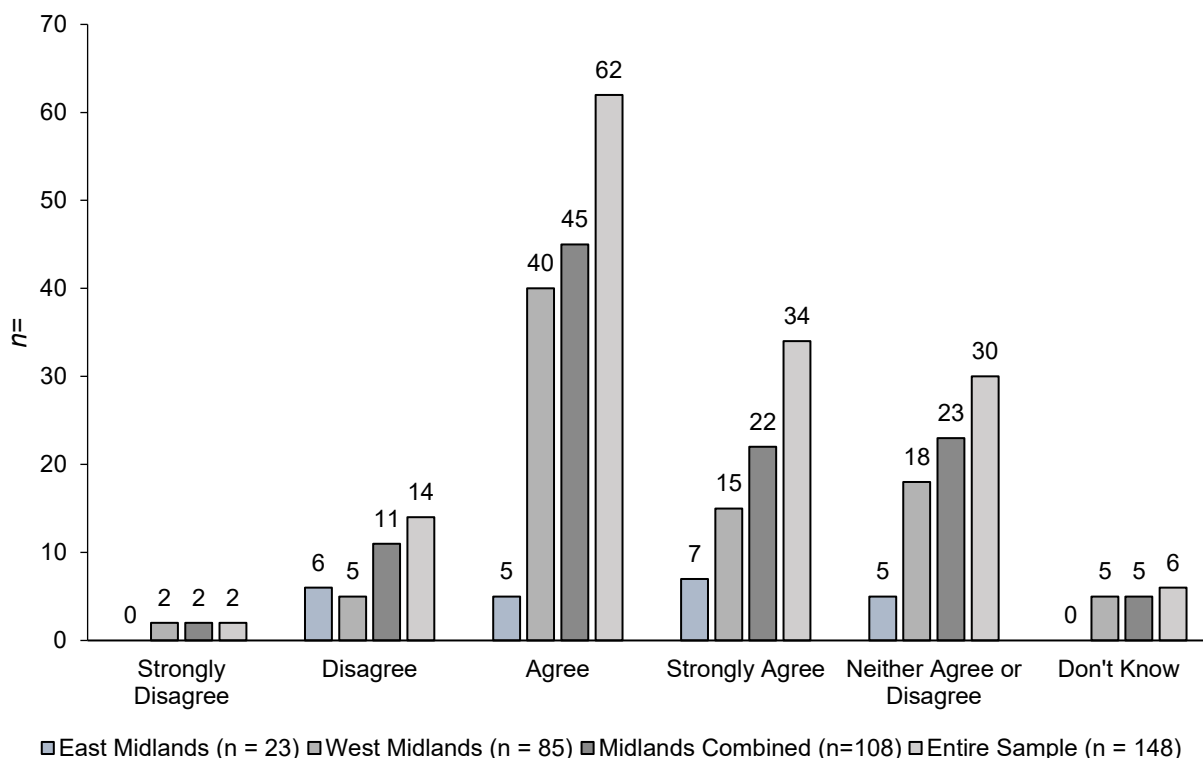
37.8% of the entire sample agreed or strongly agreed that being physically inactive for an extended period increases the likelihood of being unemployed. 39.8% of the Midlands sample (41.2% West Midlands and 34.8% East Midlands) also agreed or strongly agreed with the statement. 35.1% of the entire sample answered ‘neither agree or disagree’ or ‘don’t know’ to the statement. This figure was 35.2% for the Midlands (35.3% West Midlands and 34.8% East Midlands). Around a quarter (27.0%) of the entire sample disagreed or strongly disagreed with the statement, with the figure for the Midlands being 25.0% (23.5% West Midlands and 30.4% East Midlands). Overall, opinions on whether being physically inactive for an extended period increases the likelihood of being unemployed were varied, with no clear consensus. Open text responses separated by region are available in Appendix 7 and discussed other important variables that affect unemployment and personal perspectives based on individual experiences.



**Figure 2.9.** Responses to the question: ‘To what extent do you agree with the statement: “Employers would believe that I’m more productive if I’m physically active”?’

**Figure 2.9 description**

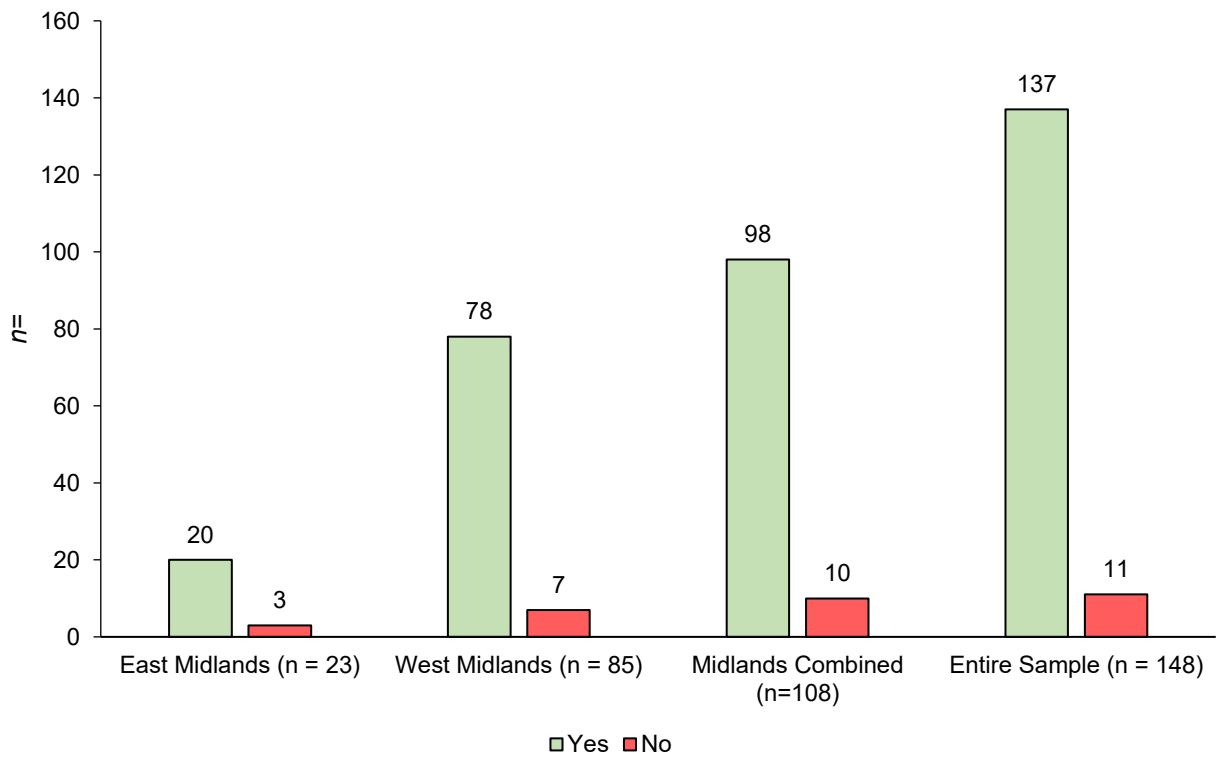
60.1% of the entire sample agreed or strongly agreed that employers would believe that they are more productive if they are physically active. 61.1% of the Midlands sample (61.2% West Midlands and 60.9% East Midlands) also agreed or strongly agreed with the statement. 22.3% of the entire sample answered ‘neither agree or disagree’ or ‘don’t know’ to the statement (only 1 person answered ‘don’t know’). This figure was 21.3% for the Midlands (17.6% West Midlands and 34.8% East Midlands). 19.6% of the entire sample disagreed or strongly disagreed with the statement, with the figure for the Midlands being 17.6% (21.2% West Midlands and 4.3% East Midlands). Overall, responses to whether employers would believe that employees are more productive if they are physically active indicated that a majority believed this to be true, although almost a quarter of the sample was unsure. There were also differences in opinion between the East and West Midlands, with more people from West Midlands than the East Midlands disagreeing with the statement than . Open text responses separated by region are available in Appendix 8 where participants generally chose to discuss the issues with assumptions that those who are physically active are more productive.



**Figure 2.10.** Responses to the question: ‘To what extent do you agree with the statement: “Employers believe being physically inactive increases the likelihood of leaving the job market early”?’.

**Figure 2.10 description**

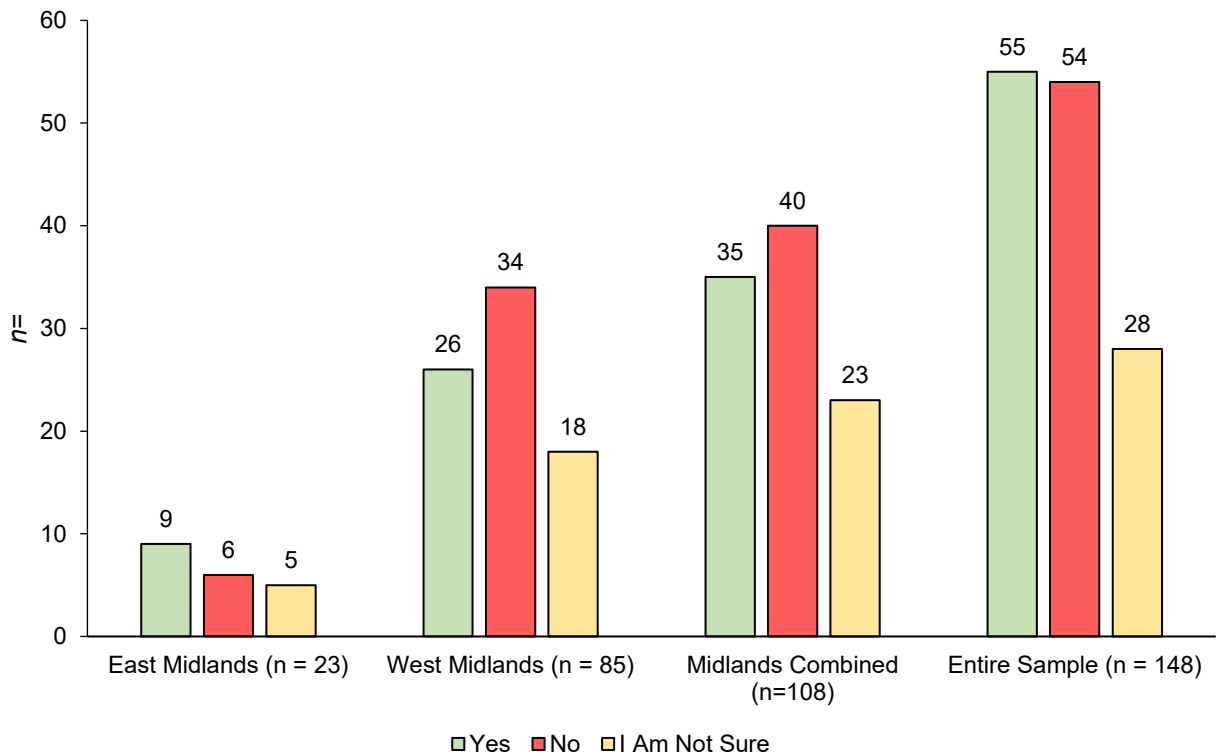
64.9% of the entire sample agreed or strongly agreed that employers would believe that being physically inactive increases the likelihood of leaving the job market early. 62.0% of the Midlands sample (64.7% West Midlands and 52.2% East Midlands) also agreed or strongly agreed with the statement. 24.3% of the entire sample answered ‘neither agree or disagree’ or ‘don’t know’ to the statement. This figure was 25.9% for the Midlands (27.1% West Midlands and 21.7% East Midlands). One in ten people (10.8%) in the entire sample disagreed or strongly disagreed with the statement, with the figure for the Midlands being 12.0% (8.2% West Midlands and 26.1% East Midlands). Overall, opinions on whether employers believe that being physically inactive increases the likelihood of leaving the job market early indicated that a majority believed this was true, although almost a quarter of the sample was unsure. There were also differences in opinion between the East and West Midlands, with more people from the East Midlands than the West Midlands disagreeing with the statement. Open text responses separated by region are available in Appendix 9 with comments generally questioning the strength of the link between physical inactivity and leaving the job market early.



**Figure 2.11.** Responses to the question: 'Are you currently employed?'

**Figure 2.11 description**

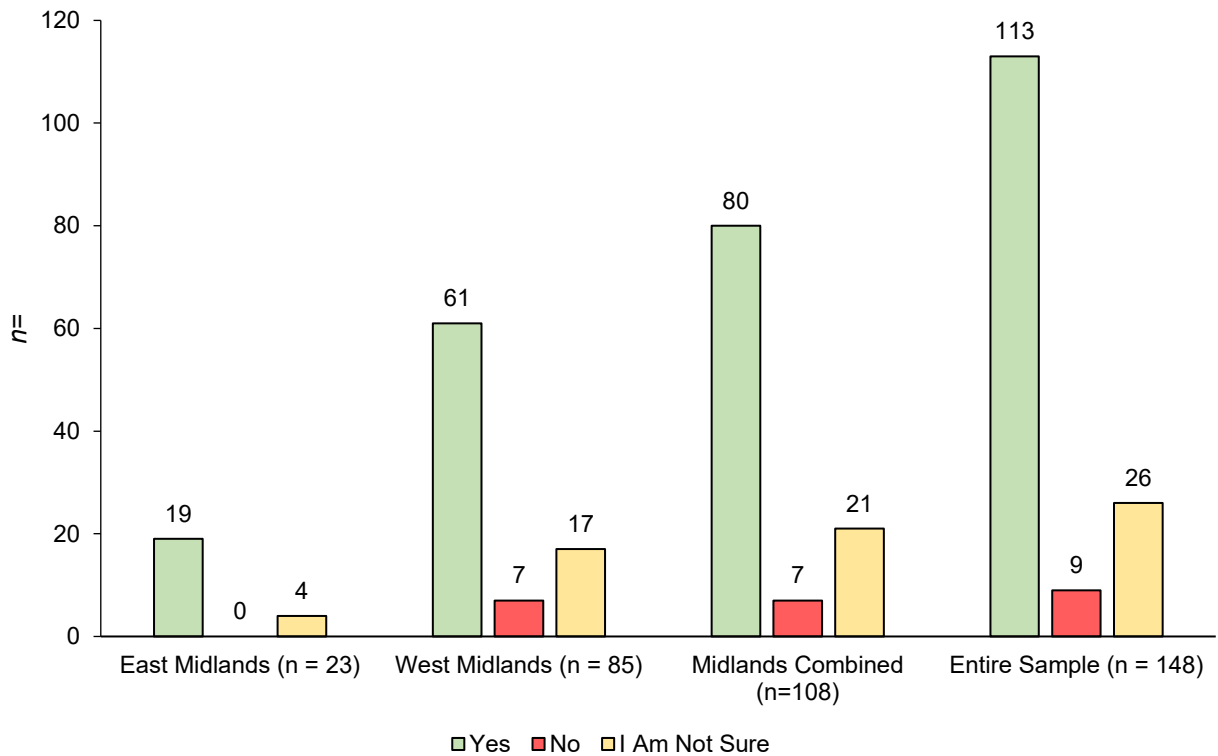
92.6% of the entire sample were currently employed at the time of the survey. 90.7% of the Midlands sample were employed (91.8% West Midlands and 87.0% of the East Midlands). Overall, employment rates were high in this sample.



**Figure 2.12.** Responses to the question: ‘Does your current employer create opportunities to be more physically active or reduce sedentary behaviour? E.g., by having workplace wellness schemes that specifically promote physical activity’.

**Figure 2.12 description**

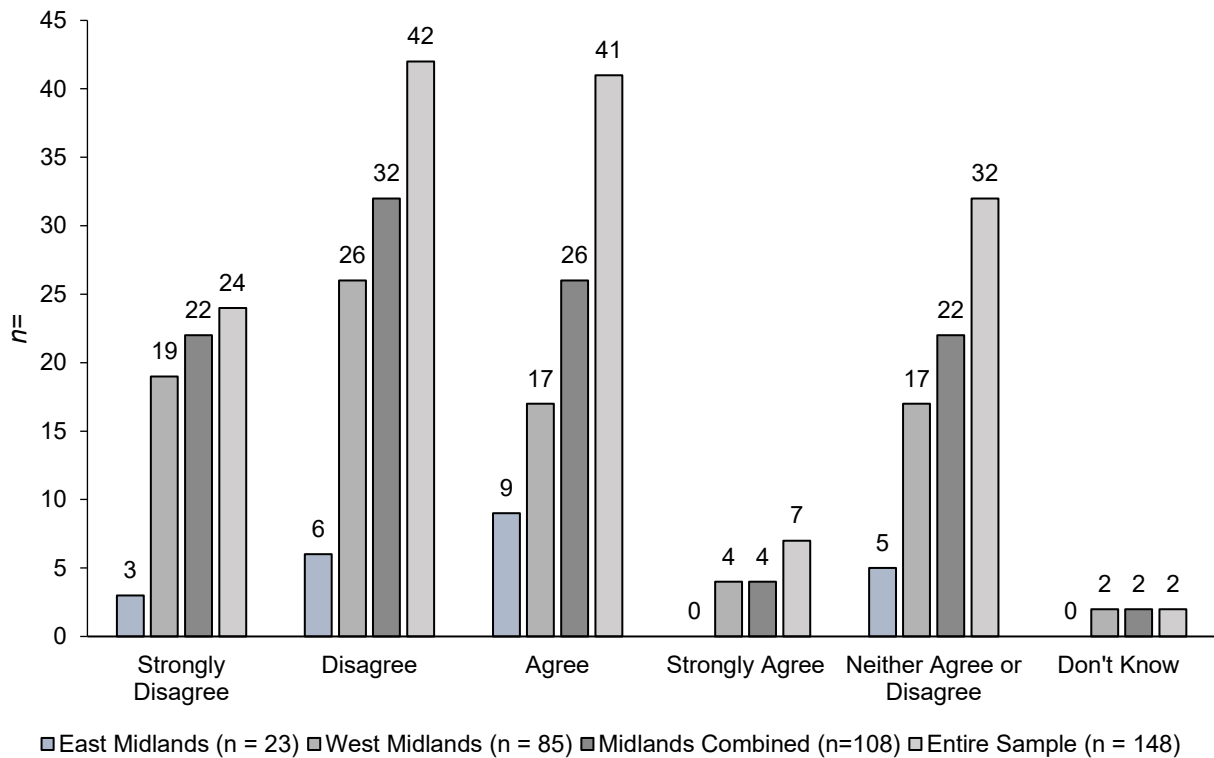
37.2% of the entire sample reported that their employer creates opportunities to be more physically active or reduce sedentary behaviour. 32.4% of participants from the Midlands (30.6% West Midlands and 39.1% East Midlands) said their employer creates such opportunities. 36.5% of the entire sample said that they do not have access to these opportunities through their employer, with that figure being 37.0% for the Midlands (40.0% West Midlands and 26.1% East Midlands). 18.9% of the entire sample were unsure if they had access to these opportunities through their employer, with that figure being 21.3% for the Midlands (21.2% West Midlands and 21.7% East Midlands). Overall, over one third of the sample had opportunities to be more physically active or reduce sedentary behaviour created by their employer. These opportunities were less frequent for those employed in the West Midlands compared to the East Midlands. Open text responses separated by region are available in Appendix 10 where various physical activity opportunities offered by employers are shared.



**Figure 2.13.** Responses to the question: ‘Please respond to and describe if you would welcome interventions that enable physical activity and/or reductions in sedentary behaviour in the workplace and what would you like to see implemented.’

**Figure 2.13 description**

76.4% of the entire sample would welcome interventions that enable physical activity and / or reductions in sedentary behaviour in the workplace. These figures were 74.1% of participants from the Midlands (71.8% West Midlands and 82.6% East Midlands). 6.1% of the entire sample said they would not welcome these opportunities, with that figure being 6.5% for the Midlands (8.2% West Midlands and 0% East Midlands). 17.6% of the entire sample were unsure if they would welcome these opportunities, with that figure being 19.4% for the Midlands (20.0% West Midlands and 17.4% East Midlands). Overall, most participants were receptive to introducing interventions that enable physical activity and/or reductions in sedentary behaviour in the workplace. Open text responses separated by region to this question are available in Appendix 11 and 12. Those who wouldn’t welcome interventions felt that the workplace should be separate from exercise, or they already had physical jobs so felt it unnecessary. Those who would welcome these interventions offered various methods that they would like to see available to them.

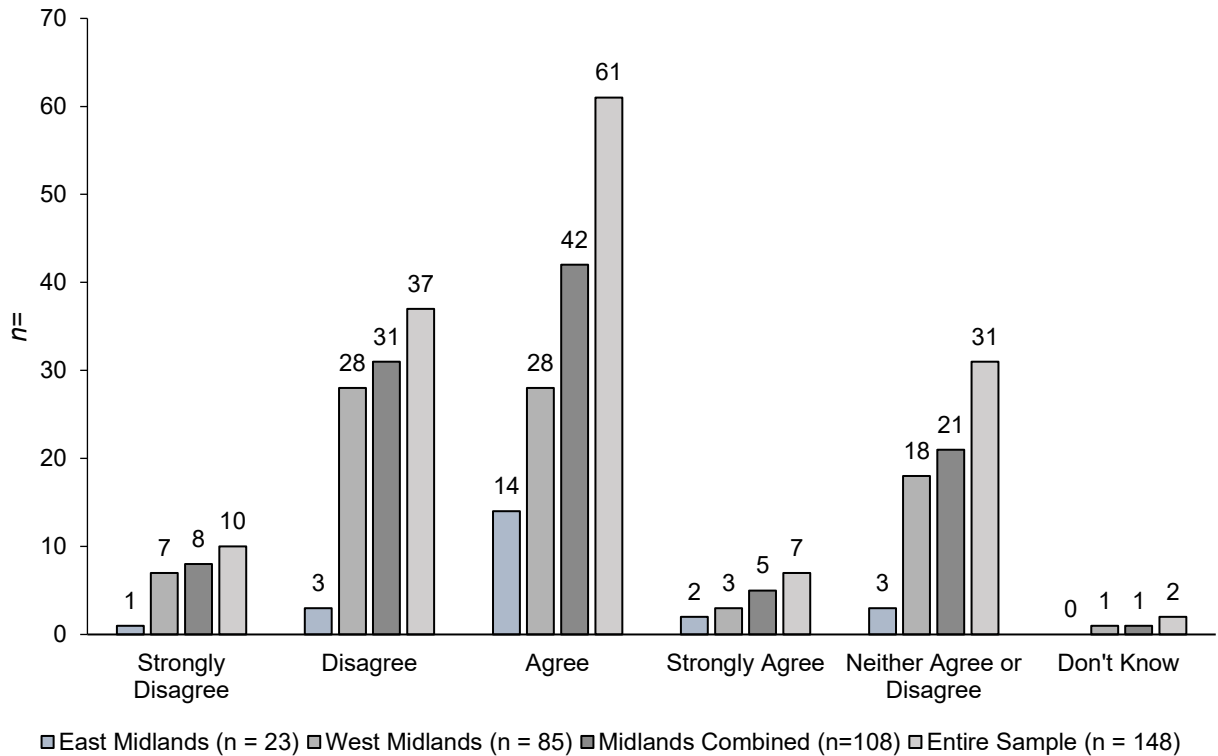


**Figure 2.14.** Responses to the question: ‘To what extent do you agree with the statement: “It is my employer’s responsibility to encourage me to be physically active”.’

**Figure 2.14 description**

44.6% of the entire sample disagreed or strongly disagreed that it is their employer’s responsibility to encourage them to be physically active. This figure was 50.0% for the Midlands (52.9% West Midlands and 39.1% East Midlands). Conversely, 32.4% of the total sample agreed or strongly agreed with the statement. 27.8% of the Midlands sample (24.7% West Midlands and 39.1% East Midlands) also agreed or strongly agreed with the statement. 23.0% of the entire sample answered ‘neither agree or disagree’ or ‘don’t know’ to the statement. This figure was 22.2% for the Midlands (22.4% West Midlands and 21.7% East Midlands). Overall, opinions were divided on whether it is an employer’s responsibility to encourage physical activity, with more participants believing it was not the employers responsibility. Participants from the East Midlands believed employers have more of a responsibility than those in the West Midlands. Open text responses separated by region are available in Appendix 13 and broadly display the opinion that, overall, it is not an employer’s responsibility to encourage their employees to be physically active.

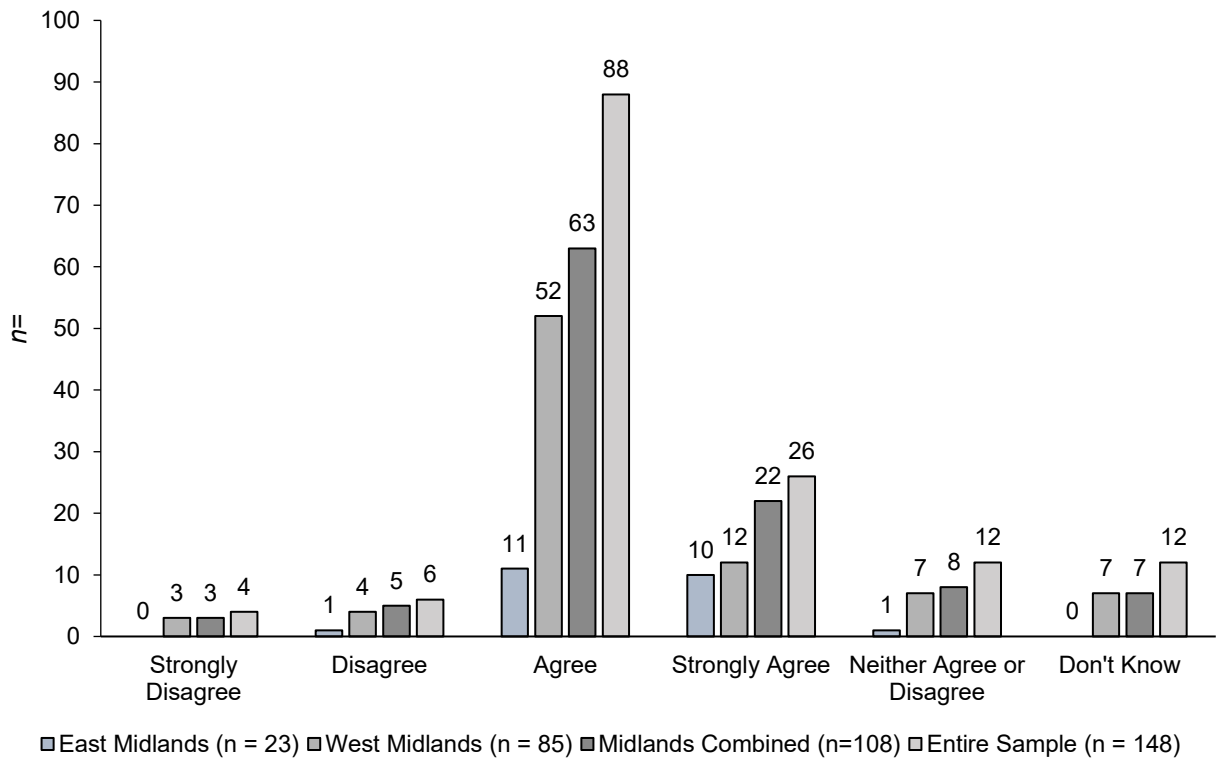




**Figure 2.15.** Responses to the question: ‘To what extent do you agree with the statement: “Employers have a moral and ethical responsibility to ensure their employees are physically active?”’

**Figure 2.15 description**

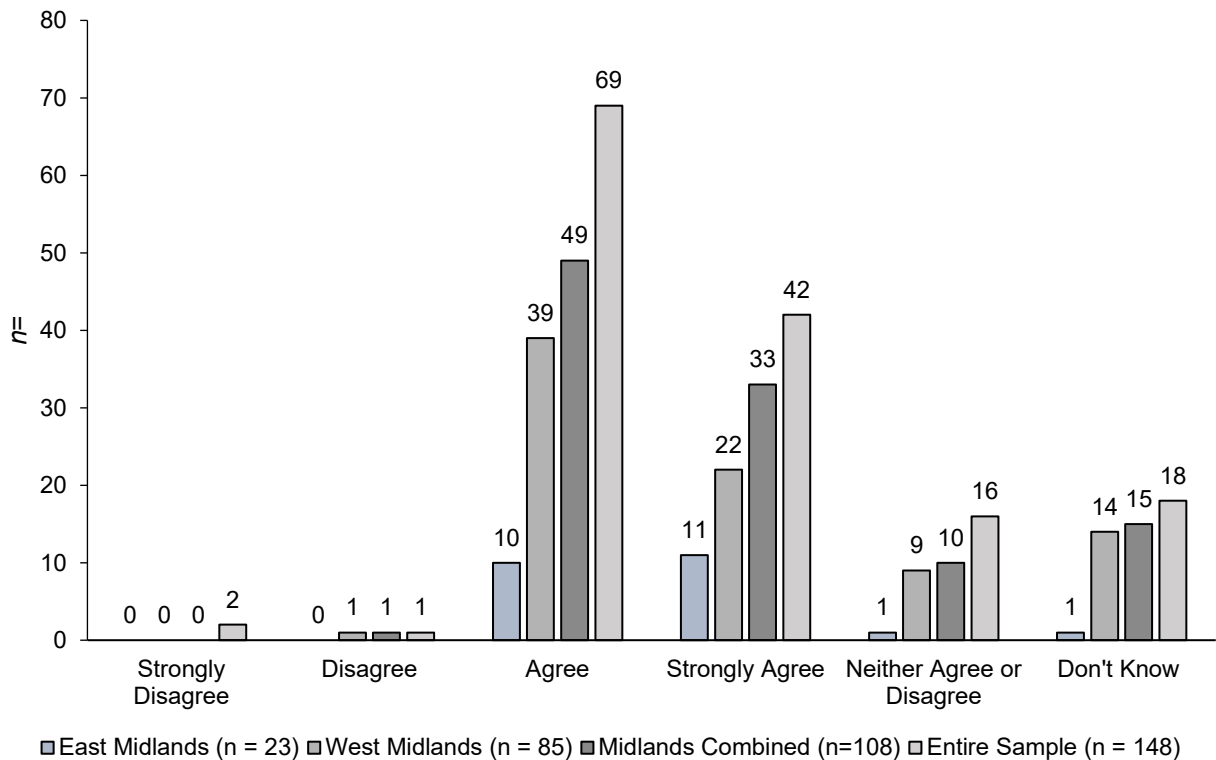
45.9% of the total sample agreed or strongly agreed that employers have a moral and ethical responsibility to ensure their employees are physically active. 43.5% of the Midlands sample (36.5% West Midlands and 69.6% East Midlands) also agreed or strongly agreed with the statement. 31.8% of the entire sample disagreed or strongly disagreed with the statement, with the figure for the Midlands being 36.1% (41.2% West Midlands and 17.4% East Midlands). 22.3% of the entire sample answered ‘neither agree or disagree’ or ‘don’t know’ to the statement. This figure was 20.4% for the Midlands (22.4% West Midlands and 13.0% East Midlands). Overall, more participants agreed that employers have a moral and ethical responsibility to ensure their employees are physically active than not. A greater percentage of participants from the East Midlands agreed with this statement than those from the West Midlands. Open text responses to this question separated by region are available in Appendix 14 and largely share the opinion that personal responsibility is key and employers may promote or encourage physical activity but not ensure it.



**Figure 2.16.** Responses to the question: ‘To what extent do you agree with the statement: “Workplace wellbeing schemes that promote physical activity and reductions in sedentary behaviour reduce physical inactivity”?’.

### Figure 16 description

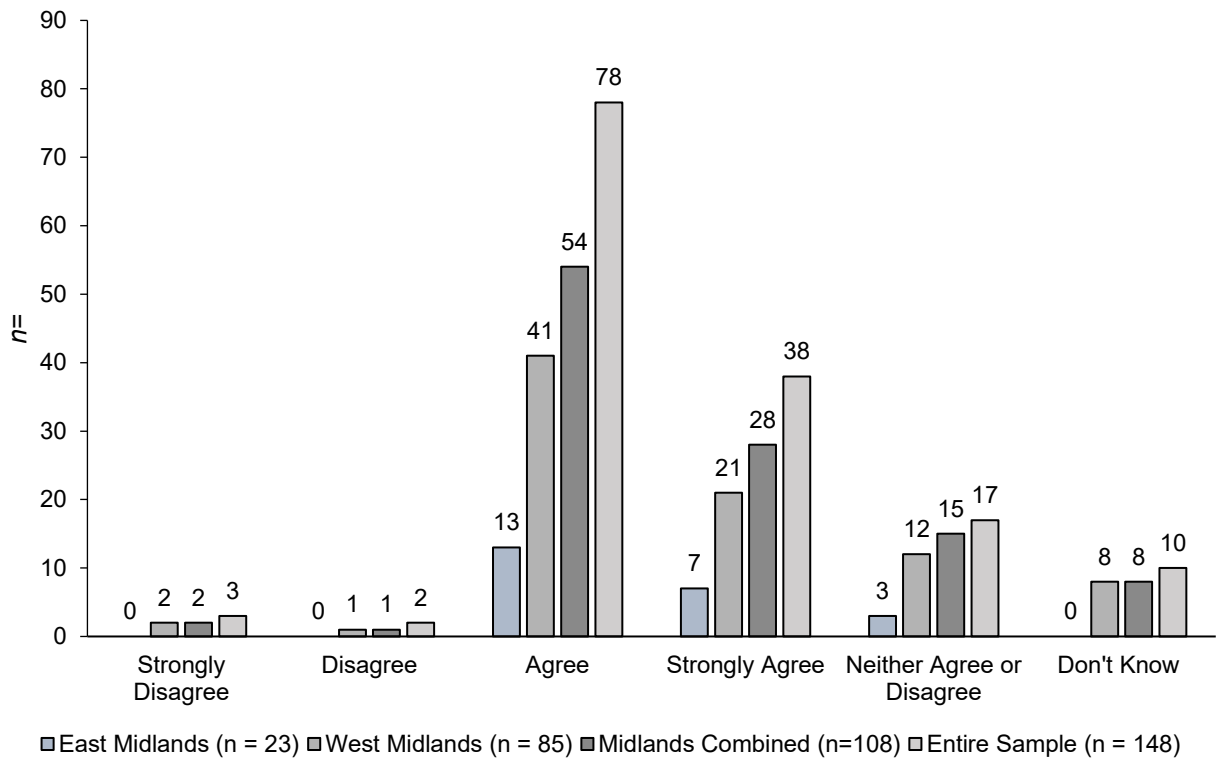
77.0% of the entire sample agreed or strongly agreed that workplace wellbeing schemes that promote physical activity and reductions in sedentary behaviour reduce physical inactivity. 78.7% of the Midlands sample (75.3% West Midlands and 91.3% East Midlands) also agreed or strongly agreed with the statement. 16.2% of the entire sample answered ‘neither agree or disagree’ or ‘don’t know’. This figure was 13.9% for the Midlands (16.5% West Midlands and 4.3% East Midlands). 10.8% of the entire sample disagreed or strongly disagreed with the statement, with the figure for the Midlands being 7.4% (8.2% West Midlands and 4.3% East Midlands). Overall, there was strong agreement that workplace wellbeing schemes that promote physical activity and reductions in sedentary behaviour reduce physical inactivity. Open text responses to this question separated by region are available in Appendix 15 and broadly agree that workplace wellbeing schemes would help if they existed and received sufficient engagement from employees.



**Figure 2.17.** Responses to the question: ‘To what extent do you agree with the statement: “Workplaces that promote and enable physical activity and reductions in sedentary behaviour improve productivity and work performance”?’.

**Figure 2.17 description**

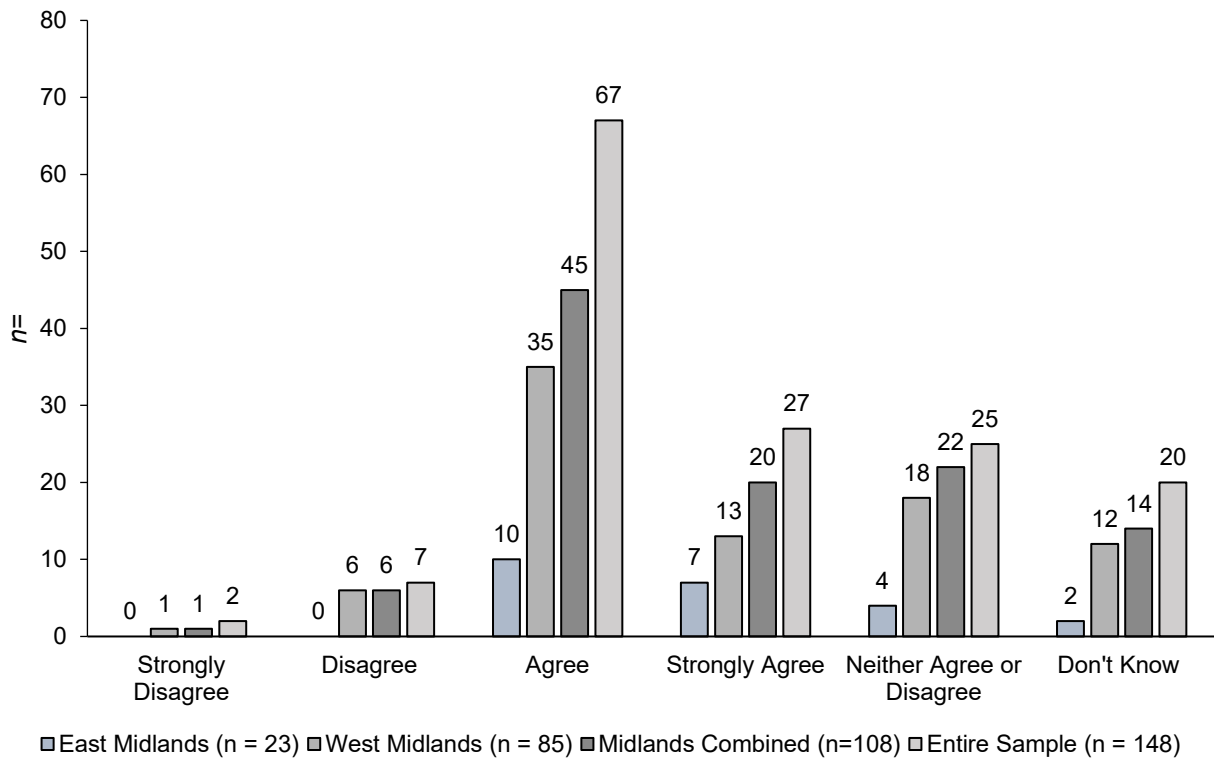
75.0% of the entire sample agreed or strongly agreed that workplaces that promote and enable physical activity and reductions in sedentary behaviour improve productivity and work performance. 75.9% of the Midlands sample (71.8% West Midlands and 91.3% East Midlands) also agreed or strongly agreed with the statement. 23.0% of the entire sample answered ‘neither agree or disagree’ or ‘don’t know’ to the statement. This figure was 23.1% for the Midlands (27.1% West Midlands and 8.7% East Midlands). Three participants in the entire sample disagreed with this statement. Overall, the sample strongly agrees that workplaces that promote and enable physical activity and reductions in sedentary behaviour improve productivity and work performance regardless of location. Open text responses to this question separated by region are available in Appendix 16 and many comments centred around the extent to which employees’ uptake and engagement with these schemes is key to their success.



**Figure 2.18.** Responses to the question: ‘To what extent do you agree with the statement: “Workplaces that promote and enable physical activity and reductions in sedentary behaviour improve job satisfaction”?’.

**Figure 2.18 description**

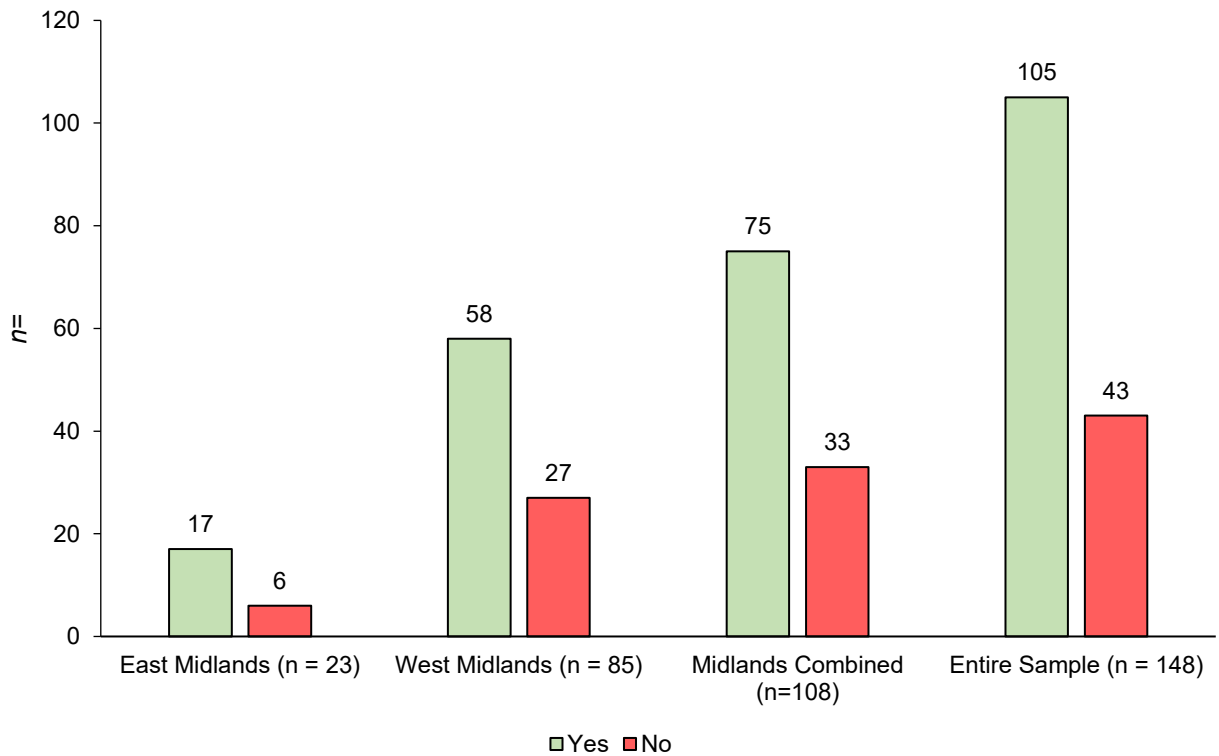
78.4% of the entire sample agreed or strongly agreed that workplaces that promote and enable physical activity and reductions in sedentary behaviour improve job satisfaction. 75.9% of the Midlands sample (72.9% West Midlands and 87.0% East Midlands) also agreed or strongly agreed with the statement. 18.2% of the entire sample answered ‘neither agree or disagree’ or ‘don’t know’ to the statement. This figure was 21.3% for the Midlands (23.5% West Midlands and 13.0% East Midlands). Only 5 people in the entire sample disagreed with this statement. Overall, the sample strongly agrees that workplaces that promote and enable physical activity and reductions in sedentary behaviour improve job satisfaction regardless of location. Open text responses to this question separated by region are available in Appendix 17 and comments centred around the fact that the idea is valuable, but many do not have enough evidence or experience to form a solid opinion.



**Figure 2.19.** Responses to the question: ‘To what extent do you agree with the statement: “Workplaces that promote and enable physical activity and reductions in sedentary behaviour improve staff retention”?’.

**Figure 2.19 description**

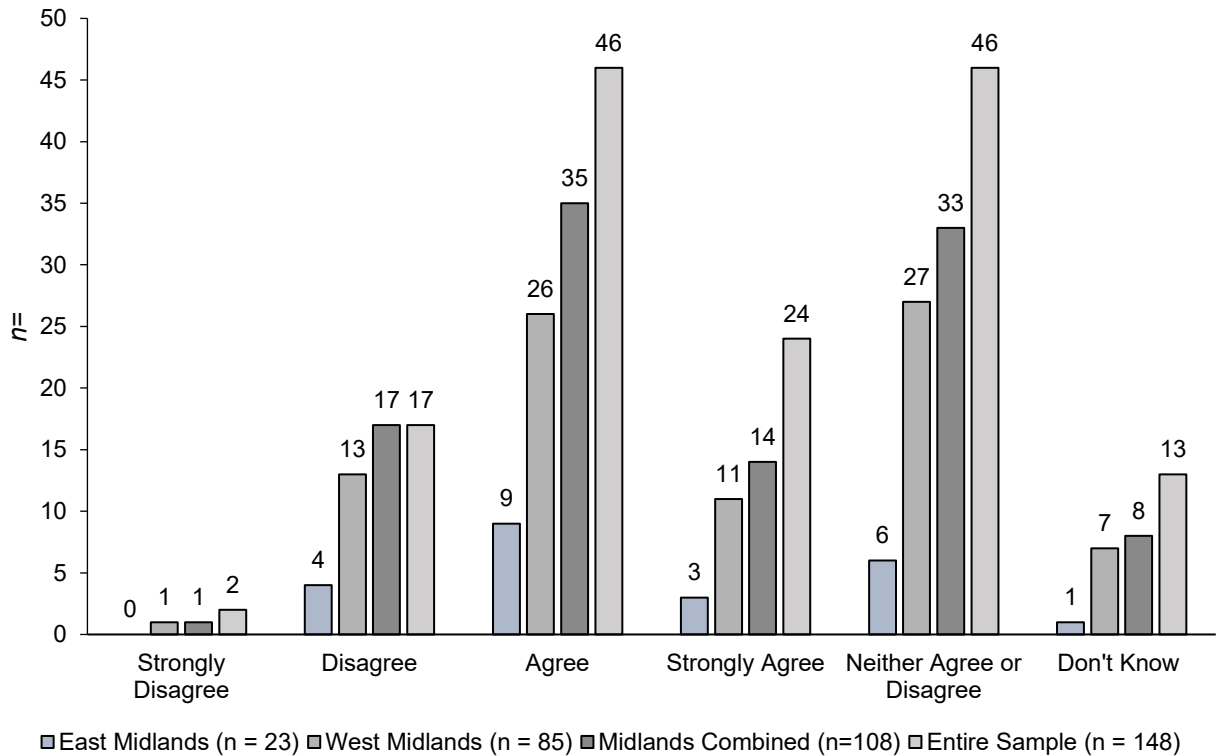
63.5% of the entire sample agreed or strongly agreed that workplaces that promote and enable physical activity and reductions in sedentary behaviour improve staff retention. 60.2% of the Midlands sample (56.5% West Midlands and 73.9% East Midlands) also agreed or strongly agreed with the statement. 30.4% of the entire sample answered ‘neither agree or disagree’ or ‘don’t know’ to the statement. This figure was 33.3% for the Midlands (35.3% West Midlands and 26.1% East Midlands). 6.1% of the entire sample disagreed or strongly disagreed with the statement, with the figure for the Midlands being 6.5% (8.2% West Midlands and 0% East Midlands). Overall, approximately two thirds of the sample agreed that workplaces that promote and enable physical activity and reductions in sedentary behaviour improve staff retention, while the other third were unsure. Open text responses to this question separated by region are available in Appendix 18 with responses seemingly very mixed as to whether this would help improve staff retention.



**Figure 2.20.** Responses to the question: 'Do you currently, or have you previously, regularly (i.e. weekly or monthly) participate(d) in any sport(s)?'

**Figure 2.20 description**

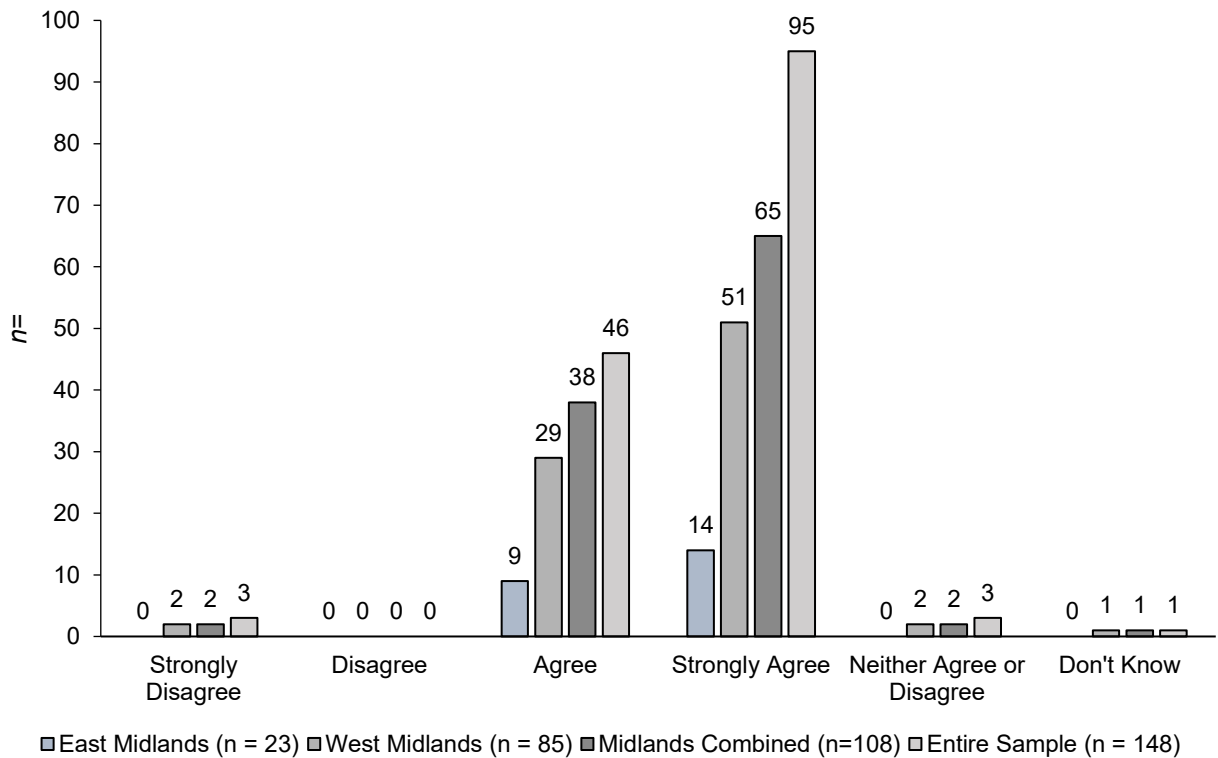
73.4% of the entire sample currently participate, or have previously participated regularly (i.e. weekly or monthly) in sports. 69.4% of the Midlands sample currently play or had previously played sports (68.2% West Midlands and 73.9% East Midlands). Overall, in keeping with the trends previously observed of high physical activity levels, the number of participants who have played or do play sports is high in this sample.



**Figure 2.21.** Responses to the question: ‘To what extent do you agree with the statement: “Being physically active and/or participating in sport can lead to job opportunities that can increase personal income?”’.

**Figure 2.21 description**

48.6% of the entire sample agreed or strongly agreed that being physically active and/or participating in sport can lead to job opportunities that can increase personal income. 45.4% of the Midlands sample (43.5% West Midlands and 52.2% East Midlands) also agreed or strongly agreed with the statement. 39.9% of the entire sample answered ‘neither agree or disagree’ or ‘don’t know’ to the statement. This figure was 38.0% for the Midlands (40.0% West Midlands and 30.4% East Midlands). 12.8% of the entire sample disagreed or strongly disagreed with the statement, with the figure for the Midlands being 16.7% (16.5% West Midlands and 17.4% East Midlands). Overall, almost half of participants agreed that being physically active and/or participating in sport can lead to job opportunities that can increase personal income. A further 40% were unsure of the impact. Open text responses to this question separated by region are available in Appendix 19 and largely demonstrated that participants struggled to see what the connection would be to exercise/sport and an increase in personal income.



**Figure 2.22.** Responses to the question: ‘To what extent do you agree with the statement: “Being physically active and/or participating in sport can reduce work related stress and / or negative mood states”?’.

**Figure 2.22 description**

95.3% of the entire sample agreed or strongly agreed that being physically active and/or participating in sport can reduce work related stress and/or negative mood states. 95.4% of the Midlands sample (94.1% West Midlands and 100.0% East Midlands) also agreed or strongly agreed with the statement. Overall, it’s clear that this sample believes being physically active and/or participating in sport reduces work related stress and/or negative mood states. Open text responses to this question separated by region are available in Appendix 20 and show that the link between exercise/sport and reduced work-related stress and/or negative mood states is evident and is a key reason why they themselves are physically active.



## **Section 2 closing remarks**

Overall, survey participants were a homogenous group, largely comprised of well-educated, employed Midlanders from a white background, in which there were more females than males. In general, it's clear to see that this sample agreed that physical inactivity has a significant effect on many of the key issues investigated in this report, such as workplace productivity, absenteeism, presenteeism and unemployment.

However, as noted throughout this report, there were many questions where a large proportion of respondents were unsure or neither agreed nor disagreed.

The findings of this survey have allowed us to carefully select topics and areas of discussion for focus groups, which will now be presented in Section 3 of this report. As a result of the findings of the survey, it is hoped that consensus on key topics will be reached.

## **Section 3 - focus groups**

### **Focus group aim**

The main aim of the focus groups was to provide qualitative insight into the survey findings. It was anticipated that data from the survey would offer a good insight into people's views on the influence of physical inactivity on job market-related outcomes such as productivity, absenteeism and presenteeism. Focus groups were planned to enable survey responders to further expand on their views, going beyond the information gleaned from closed questions and brief open-text written responses.

A secondary aim was to provide an opportunity for survey responders to agree or disagree with the findings that had been gleaned from the sample that had completed the survey. The final aim was to reach a consensus on important issues that had been identified from the rapid review and survey findings.

### **Methods**

Ethics approvals were sought from Coventry University to conduct interviews/focus groups (code: P162976). All participants provided informed consent prior to taking part in a focus group and ongoing consent was confirmed by their continuing presence on the online call. Participants were informed they could leave the call at any time without providing a reason, or to refuse to contribute to any element or questions asked during the focus group.

### **Population eligibility and recruitment**

People were able to take part in a focus group if they had completed the survey and had consented to being contacted about participation. A researcher contacted survey responders who shared contact information and invited them to participate in a focus group. Arranging focus groups were prioritised over 1:1 interview slots given time frames involved and the additional benefit gleaned from a group discussion on the subjects of interest. Consent was acquired via an online JISC form. Two focus group slot options were offered to participants (18<sup>th</sup> and 19<sup>th</sup> October), with a further slot (24<sup>th</sup> October) added for people willing to join but unable to commit to the initial slots.

### **Data collection**

Between 18-24<sup>th</sup> October 2023, three focus groups were conducted online via Microsoft Teams. Participants were reminded that the focus groups would be recorded and were able to refrain from switching their camera on if they preferred not to be visible in the recording. All participants kept their cameras on during the focus groups and no participants withdrew from any focus group at any point. At the beginning of each focus group, participants were verbally reminded of the definitions of physical activity, physical inactivity and moderate-intensity physical activity, as well as the physical activity recommendations for health. Thereafter, PowerPoint slides were shared online to support the facilitation of the five key topics of discussion, namely: 1) productivity, 2) absenteeism, 3) presenteeism, 4) unemployment and 5) leaving the job market early. For each concept in turn, participants were shown a slide with the definition, which included a summary of the key data from the survey, including both closed

and open responses. Questions were then raised to prompt discussion on 'what do we think of these results?', 'do you agree/disagree?', 'what is the impact of physical inactivity on \_\_\_\_\_?'. After a discussion of each of the five concepts in turn, consensus was sought from participants for each (agree/disagree/abstain). The slides are presented as Appendices below.

## **Analysis**

Transcripts of the audio recording were produced via Microsoft Teams. The analysis began with a researcher coding the transcripts from the three focus groups and collating these within each of the five concepts. Pertinent quotes have been selected to provide evidence for the findings reported. While they are presented verbatim and therefore prone to spelling, punctuation and grammatical errors, they have been amended/condensed to remove repetition, increase readability and therefore interpretability. Participants' identifying information (e.g. name) were replaced with participant numbers, gender and focus group 1, 2 or 3.

## **Results**

### **Participant sample**

11 participants (five female) took part, and three focus groups were conducted in total. The focus groups lasted between 48 and 95 minutes, with two taking place in the evening (starting at 6:30pm) and other starting at 1pm.

Five participants currently resided in the Midlands (Solihull, Newark and Sherwood, Warwick, Charnwood, Coventry) and the remaining participants resided in postcodes in Bristol, Southampton, Vale of White Horse, East Riding of Yorkshire, Central Bedfordshire and St Mary's (Wales).

An overview of participant characteristics is shown in Table 1. In terms of employment status, all participants were either in full-time ( $n=10$ ) or part-time ( $n=1$ ) employment and all were educated to degree level or above. Most participants reported working in the public sector ( $n=6$ ), followed by private ( $n=2$ ), voluntary ( $n=2$ ) and other ( $n=1$ ; 'charity paid, not voluntary').

The most reported work activity was modern professional occupations ( $n=8$ ), with the remaining participants senior managers or administrators ( $n=3$ ). Four participants reported working in the education sector, with the remaining participants working in either health, financial and insurance, professional, scientific and technical, public administration and defence, arts, entertainment, recreation and other services, or other (criminal justice system).

**Table 3.1** - Characteristics of focus group participants.

	<b>Frequency (n=)</b>
<b>Age (years)</b>	
30-39	5
40-49	3
50-59	2
60+	1
<b>Religion</b>	
Christian	5
No religion	3
Prefer not to say	3
<b>Ethnicity</b>	
White British	7
White-Irish	2
Any other white	1
Any other mixed	1
<b>Indices of multiple deprivation<sup>a</sup></b>	
1 (most deprived)	0
2	0
3	1
4	1
5	1
6	2
7	1
8	2
9	1
10 (least deprived)	2

<sup>a</sup> Indication of deprivation based on postcode provided by participant, with 1 indicating high deprivation and 10 indicating least deprivation.

### 1) Productivity

*Statement: 'being physically inactive for an extended period reduces productivity at work'*

Overall, participants strongly supported the statement, with the survey data suggesting a high proportion of survey participants agreeing or strongly agreeing with the statement about productivity. *"I'm not that surprised to read that most people would agree there is that link between physical inactivity and lower decreased productivity"* (P03, female, focus group #1)

There was surprise, though, that the percentage was not higher and that survey participants had disagreed with the statement.

*“I find it interesting that a few people would disagree with this.” (P11, male, focus group #3)*

A few participants thought that the definition of productivity could vary between industries and job roles and that it can be difficult to measure productivity.

*“For many of us, and I don't know, other people might concur, productivity is quite difficult to measure and in some of the roles that I do and I know other colleagues and that's always the gripe. How do we actually measure productivity?” (P06, male, focus group #1)*

Many participants recalled instances of how they could apply the statement to their own lives, fitting in physical activity before, during or after work hours and experiencing positive effects on workplace productivity.

*“If I've done something [physical activity] in the morning and feel great, have a shower, sit down in front of the computer, I can get a lot done.” (P11, male, focus group #3)*

*“I might go to the gym at lunchtime. I work up until lunchtime, I go to the gym, and it just gives me a chance to sort of, as it says there, refocus, reset. This is what I'm going to do in the afternoon. I've got a set period of time in the afternoon to get what I need to done.” (P08, male, focus group #2)*

Participants recalled varied benefits, including more enthusiasm, better stamina, being willing to be put in more time/energy, sharper/more alert, energised, focused/re-focused, and improved mood.

*“...I try and use exercise to refocus” (P08, male, focus group #2)*

*“Definitely a lot more enthusiasm. And I can notice that pretty immediately if I've been exercising regularly or even just that morning” (P04, male, focus group #1)*

*“You know, if I've managed to get to the gym or I've managed [to] cycle then I feel sharper. I feel more energised there. Not sure I can last, at my age, right throughout the day, but certainly it starts off my day better and I feel much more focused” (P06, male, focus group #1)*

A few participants described how it had become easier to fit in exercise around work when working from home and how it had become more acceptable to do physical activity during their lunch break, whereas it would not have been pre-COVID 19.

*“I've noticed myself that, when working from home, you know, I need to make sure I get out of the chair. You know, every hour or so. Lunchtime going for walks, making*

*sure I'm getting my running in the morning or the evening. When I am at home it feels a lot easier to do, whereas if I do go into the office, if you're running late and the last thing I want to do when I get home after a drive back is to go and do some exercise, that type of thing.” (P11, male, focus group #3)*

*“I think, it was frowned upon, maybe a few years ago that you would go out for a run during lunchtime or do some exercise during the 9-5 kind of work time you know? And like, yeah, that's fine. You can do that, you know, [go] for a long walk and come back and you be a lot more productive. So, I think people are more open to saying that's what they're actually doing with their time rather than being, you know, sat in front of a computer.” (P11, male, focus group #3)*

In contrast, one participant recalled how remote working had reduced the amount of physical activity they did in their role, with fewer in-person engagements with clients/customers.

*“We've got technology, but the ... participant of service [customer/client]... isn't able to actually connect with someone now with it being an online platform to do it on, which means they're also being inactive when they're being engaged, which our services are all around creating movement and walking alongside someone to help them rather than it just being a case of talk to someone, you know, sat in a sat down position. So, we're also increasing inactivity and we haven't really seen the full impact of that yet.” (P10, male, focus group #3)*

Specific examples of types of physical activity undertaken that had a positive impact on productivity included running, cycling, and going to the gym. Several participants commented that an active commute was also a key moment and had not acknowledged this prior to the focus group. However, they recalled that an active commute had a positive impact on productivity, being in a much better place compared to days where they drove in to work, for example.

*“I hadn't really considered [the] commute at all when I was doing the survey but, thinking about it now, I have some days where I drive in and some days where I cycle to a train station and I walk from the train station to a building and then I think those days when I am commuting by foot and cycling and public transport they feel like longer, way more productive days, but I don't know, maybe there's a link between my stamina and productivity on those days and how much exercise I'm doing.” (P01, female, focus group #1)*

It was noted that the scale of the benefit varied, and the amount of physical activity did not have to be major to see an effect. Many were, in fact, surprised by the effect they experienced from doing a small amount of physical activity.

*“I've definitely heard people say to me that when they've started to inject even a tiny bit of exercise into their day that they feel more aware and more alert at work. And that it's helped them and always that sense of surprise that that happens.” (P09, female, focus group #2)*

Nevertheless, one participant did note the need for balance with the amount of physical activity to observe the benefits:

*“If you overdo physical activity, though, you’re **more** likely to get ill ... so I feel like there’s a balance to be struck here!”* (P03, female, focus group #1)

## **Consensus statement 1**

All participants agreed that being physically inactive decreases productivity. Consensus among them was achieved.

### **2) Absenteeism**

*Statement: ‘being physically inactive increases absenteeism’*

Participants were evidently surprised by the low percentage of people in the survey agreeing or strongly agreeing with this statement. There was also surprise as to how many people responded ‘neither agree or disagree’.

*“I slightly surprised that it’s only 62.1% [which] strongly agreed to that. To me, I think it’s a bit of a no brainer that, if you’re inactive physically then you’re going to be off work more times.”* (P11, male, focus group #3)

*“I’m interested that it’s a 25 [percent], a quarter of the respondents didn’t either agree or disagree or didn’t know. So, for me that’s quite a lot of people that really don’t know on this question.”* (P09, female, focus group #2)

Within the focus groups, participants felt there was a link between physical inactivity and absenteeism but wanted to emphasise that other factors come into play in this link to absenteeism.

*“It’s not just physical inactivity, it’s its relationship with other things that are coming into play... that’s why it’s so difficult to pin it down to one thing, because everything’s feeding off each other but it is good to be physically active as a way of managing all those different pressures and everything that are coming in. But per se, it’s not always just the physical inactivity.”* (P05, male, focus group #1)

*“Some people might have a higher threshold for being like, ‘Oh, do you know what, I’ll just power through or will work remotely’. And that kind of stuff rather than, you know, I’m going to take a sick day and fully recover before I then go back to work, which then also impacts productivity. Right. And I think that potentially has more of an impact than physical inactivity.”* (P02, female, focus group #1)

*“The thing with absenteeism that comes into my head is that just there's usually so many factors involved in why somebody might choose to, or might not be able to go to work, or might feel unable to go to work. Or decide not to go to work because they don't want to anymore. So, what I mean to say is, is it a confounding variable or something like some of these things are just related to, health” (P04, male, focus group #1)*

It was clear that participants felt physical activity achievements could bolster their workplace mentality, with physical activity a stimulating activity that could alleviate stresses/strains of life.

*“Ok, I know that I can run for four hours. I can get through a tough, tough week.” (P11, male, focus group #3)*

*“It's stimulation that kind of takes your mind off of stresses and strains.” (P10, male, focus group #3)*

Several participants felt that physical activity could play a key role in managing other factors which could then prevent absenteeism. For example, illness may be avoided or better managed from being physically active pre-illness, or, the amount of suffering could be reduced even if not removed completely, improving health status in some way.

*“If you are physically active, then you're going to get through, a little cold that you might get.” (P11, male, focus group #3)*

*“There's plenty of evidence to suggest that physical activity can help even those that are suffering. If you want to suffer less and there's certain conditions that you know you can aggravate as well but ultimately it's there's certain movements that would help those conditions as well.” (P10, male, focus group #3)*

*“If I believe that being physically active increases my focus, my concentration, which ultimately makes me feel okay at work then not being physically active and then seeing my focus go down and my presence at work go down may lead me to have less interest in my job. That makes sense and maybe more likely than to call in sick when I [don't] have any really good reason to not bother turning up to not put myself through any hardship.” (P09, female, focus group #2)*

However, participants mentioned that workplace policies and incentives may draw employees back to the workplace sooner than when they are fully recovered which can lengthen the period of illness and lead to physical inactivity whilst battling the illness, and lead to later absenteeism.

*“Whilst you're ill you can't necessarily do as much physical activity as you wanted to. So, it's one of those elements of whether this physical inactivity and potential external pressure [keeps] people inactive as well, which then leads to more absenteeism*



*down the road because they haven't recovered properly.” (P10, male, focus group #3)*

Reasons for absenteeism were considered somewhat dependent upon the job role. One participant offers an example of how they are a desk-based employee and how they often view colleagues in similar roles take time off work for reasons they do not agree with, surprised colleagues go off sick with shoulder pain when they can still physically maintain their duties, whilst a manual worker (such as a plasterer) would understandably need to go off sick for this reason.

*“I strongly agree with this statement.... I'm trying to think of typical job roles that aren't necessarily, oh, I'm a manual worker and my knees are shot or I've hurt my shoulder and I'm a plasterer so I can't physically work... it's forgivable for me to not turn up as a plasterer because my shoulder's shot [injured]. But it's not forgivable because I got shoulder pain and then I'm finding excuses to not tap on a keyboard [as an office worker]. You know, it's possible and yet people will find reasons, any reason, to not go to work even though I'm sat in a comfortable office like I am here with tea and coffee next to me, I'm not outside. I'm not climbing up a roof and yet people will find reasons to not turn up.” (P09, female, focus group #2)*

There was mention of the timeliness of physical inactivity to see the impact on absenteeism, with one participant commenting that it was a longer-term effect.

*“In the longer term rather than short term, medium term, I think if you're not physically active in the short term that can affect your mental health and it doesn't appear to show up till longer into the future.” (P05, male, focus group #1)*

Similarly, to participants discussing the negative impacts of doing too much physical activity on productivity, the same could apply for absenteeism.

*“If you're doing excessive amounts of physical activity, that's also potentially going to impact productivity and also absenteeism because you could be getting sick because of training too much and that kind of stuff as well.” (P02, female, focus group #1)*

## **Consensus statement 2**

All participants agreed that they considered physical inactivity *can* increase absenteeism. Consensus was achieved.

### **3) Presenteeism**

*Statement: 'being physically inactive increases presenteeism'*

Discussions around presenteeism were positioned similarly to absenteeism in that participants were surprised at the low percentage of survey responders who agreed or strongly agreed with this statement.

*"It's something that I agree with and it's probably maybe above a little surprising that that isn't higher, that it's only 63%." (P08, male, focus group #2)*

*"I'm surprised at 63%. I thought a bit more, but then it's just my opinion." (P10, male, focus group #3)*

One participant commented on how presenteeism was much more challenging to grasp as a concept compared with productivity and absenteeism:

*"Still trying to figure out what it actually means.... Presenteeism- is that something bad, or is that something that, you know, you can get away with because that's your job? You know, sometimes you have good days, sometimes you have bad days. Is this like, a mediocre kind of day?" (P11, male, focus group #3)*

Another participant reflected on how the links with physical inactivity were 'gradually getting more and more sort of blurry' (P03, female, focus group #1) with each concept discussed. There was substantial acknowledgement that other factors were likely contributing to the influence on presenteeism (beyond physical inactivity).

*"I think it's a lot more complex than just whether or not somebody is physically active or physically inactive." (P03, female, focus group #1)*

*"Some people can fight through things and some people just, you know, flow with it if that makes sense? So, there's a spectrum there of presenteeism." (P10, male, focus group #3)*

Examples of these factors included low mood, workplace culture, attitude and diet, with people labelled as complex human beings.

*"It's more complicated than being just being inactive. I think it's a whole culture and attitude." (P01, female, focus group #1)*

*"But, again, it's like interconnection to other things like your diet that you have to put it with alongside." (P05, male, focus group #1)*

*"We've a whole set of different emotions, feelings, physiological sort of makeup and biological makeup, etcetera. So, it's the very multidimensional nature of this." (P06, male, focus group #1)*

*“We have some shocking sickness in this building of people who are sat down for most of the time and that's I think because of low mood typically or just a very poor outlook as to where they are in their life and their mundane job just adds to that.”* (P09, female, focus group #2)

Another example was around how people often have *‘things going on at home’* and how this can influence presenteeism.

*“They didn't feel ready to come back or, you know, there's a lot going on at home sort of thing. And that's having an impact and it's taken their mind off their job. You know, it's taking their mind off the task at hand.”* (P10, male, focus group #3)

A major point raised was around the substantial variation between individuals on approaches to presenteeism, particularly in terms of taking a day off when feel the need to, age/stage of career and even the job role they held.

*“It depends on the person.”* (P03, female, focus group #1)

*“Also, in the latter stages of a career... is their presentism, is that higher than earlier on in the career? Is another way of kind of being able to look at well, if presentism exists higher at an age, then maybe that they can't leave for whatever reason, they might want to.”* (P10, male, focus group #3)

*“You could be physically active in terms of meeting that threshold, but if you're working very sedentary for long periods, yes, you've met the threshold. But actually, it's the prolonged doing the same thing that is giving the headaches, which then impacts presentism.”* (P02, female, focus group #1)

One participant commented on how meeting the physical activity guidelines through an active commute is insufficient to realise the benefits for workplace presence.

*“If I think about that sort of 150 minutes per week. I would get that just on my commute, just cycling and walking, that would be enough for me to get that 150 minutes. If that's all I do in a week, that's not enough for me to feel happy and have that boost to my mood.”* (P03, female, focus group #1)

In contrast with the main discussion, a participant reflected on how being physically active could lead to presenteeism, with these individuals being more mindful and aware of times they may benefit from taking a longer coffee break, for example.

*“I wonder if, to a certain extent, as well people who are more physically active, maybe they value their well-being, be that physical or mental. They might actually demonstrate slightly more behaviour in terms of, like the sort of absenteeism and even presentism. It's sort of like, yeah, okay, they might be at work, but they might be thinking, you know what, I'm really exhausted today. I'm going to take it easy. I'm*

*going to take a super long coffee break. I might just go and sit in a cafe and read a book. And if anyone wants me, they can message me on [Microsoft] Teams. You know, it's that kind of thing.”* (P03, female, focus group #1)

### **Consensus statement 3**

All participants agreed that being physically inactive *can* increase presenteeism. Consensus has therefore been reached.

#### **4) Unemployment**

*Statement: ‘being physically inactive for an extended period increases the likelihood of being unemployed’*

For unemployment, there was a sense of cautiousness around fully supporting the link between physical inactivity and unemployment as a direct, unimpeded, causal relationship.

*“I would be very, very cautious personally about coming to any sort of conclusion about how physical activity might have any relation to unemployment or employment.”* (P03, female, focus group #1)

*“I do think that there is that correlation but yeah is a hard one to [justify] and to stand up I think in my eyes.”* (P06, male, focus group #1)

*“There must be other things that come into play about not being able to find a job, etcetera”* (P11, male, focus group #3)

To clarify the reasons for this, several participants commented that there may be other reasons for struggling to find employment, including “*a cognitive ...disability or it could be a criminal record*” (P10, male, focus group #3) or how it may depend on “*people’s occupations ... and how they ... approach their day-to-day lives*” (P08, male, focus group #2)

In contrast, several participants were surprised that the survey findings were not more supportive, because they could see a clear link when reflecting on their own personal experience.

*“Again, a bit surprised that only ...less than half would agree with that sort of statement.”* (P08, male, focus group #2)

*“You know, I think from my point of view, I've always been around ...sports or ...active people and ... if someone becomes unemployed, they find a job pretty much...straight away.” (P11, male, focus group #3)*

When reflecting on physical inactivity, participants discussed how they could see that physical activity could lead to improvements in mental and physical health that would better position people to attain employment– in particular, performances in the interview process.

*“The link with physical health and mental health when I'm feeling physically stronger, I feel stronger mentally and resilient, more ready to take the knocks of [an] interview or wherever.” (P06, male, focus group #1)*

*“I feel very strongly around the link between physical activity and a general positivity. A general optimism and hope and a flexibility of mind and thinking and focus which all come across in interviews and whether I feel confident to go for interviews. Even ... before I'm actually in the interview, do I feel? Even though I don't tick all the boxes, do I feel confident as a person to put my application in rather than just give up before it's even gone in so. So, for me, I do feel it's strongly linked.” (P09, female, focus group #2)*

*“Makes you feel good about yourselves if you are physically active which could, lead on to employment if you're feeling good. Going into interviews, doing job applications, etcetera.” (P11, male, focus group #3)*

The intensity of physical activity was also described as an important factor, with greater intensity physical activity described as more challenging, pushing people and therefore supporting them to counteract the difficult situation of unemployment.

*“I think it pushes you and I think if we're looking at people that are going to break free from unemployment into employment, then that's challenging. So, they have to be people that are used to either have been challenged or challenging themselves. Because only then will they understand that they are more capable than they actually feel.” (P09, female, focus group #2)*

In each focus group, participants discussed the importance of physical activity type, noting that team sports could be particularly beneficial for overcoming unemployment. Notably, being active and around other people was key for the benefits to be realised.

*“Having some people around that have a similar interest and that maybe you can really relate to is something that I think is what is always beneficial for people when they're when they're working, or even if they're out of work.” (P08, male, focus group #2)*

*“Team sports are amazing because you’ve got that level of peer support within that, that structure and hopefully held nicely as well and supportively within that.” (P09, female, focus group #2)*

*“I go to the gym or I go for walks. But I’m on my own. Doesn’t give me the opportunity [to connect with others]. I’ve got more physical activity, yes, but it doesn’t give me the connection I need... It’s that social activity that sport provides, sport itself, not necessarily physical activity, which then gives people the job or gives them the opportunity to socially navigate other opportunities.” (P10, male, focus group #3)*

However, it was noted by one participant that the age of people experiencing unemployment was important as to attaining the benefits of team/sport involvement, with resistance to engagement seen as people get older.

*“The problem I find typically is that people always get to an age where they say no to making new friends. They kind of go ‘I’ve got enough. I’m busy enough with my family. I don’t need any more people in my life’. They almost all lost confidence with people so they won’t join groups. Even though we know the huge benefits that group work brings in, or even crafting or anything, but they almost just go ‘I just like doing something with you, or a personal trainer, or just me and somebody else’ because that whole group dynamic for them is just so overwhelming or bewildering. So, in fact, that’s what puts people off, which is just such a terrible shame because the benefits are huge.” (P09, female, focus group #2)*

#### **Consensus statement 4**

All participants agreed that being physically inactive *can* increase likelihood of being unemployed. Consensus has therefore been reached.

#### **5) Leaving the job market early**

*Statement: ‘being physically inactive increases the likelihood of leaving the job market early’*

Various factors were perceived to link to leaving the job market early, and these were thought to extend beyond physical inactivity in the strength of association. Key examples were ill-health and affordability.

*“Some people stay in the job market for a long, long time, because they really need to work and need money ... I think it’s absolutely fair to say that people’s health might impact their ability to continue working.” P07, male, focus group #1)*

However, physical activity was commented on by participants as a positive contribution to managing mental and physical health which could in turn support ongoing workforce participation.

*“I think when your health, whether a physical mental health, suddenly becomes impact, that's the value of physical activity in managing that health condition to either continue to help you to stay in the workforce or to return back to the workforce” (P05, male, focus group #1)*

*“I might be incredibly fit, but that's [money worries] playing on my mental health, and therefore the physicality helps me manage my mental health problem. But the money problem is the real issue, and it don't matter how active. So, for me, it's much more about staying in as well as leaving and returning to the marketplace and the role of physical activity in helping you to do that.” (P05, male, focus group #1)*

Although, physical inactivity could negatively impact health and later impact workforce participation.

*“So, it could be you're physically inactive because something's happening to cause you to be physically inactive or you've been physically inactive for a long period of your life and you've got an illness from this, which has caused you to give up work or having to stop working quite early.” (P11, male, focus group #3)*

*“You'd either leave the job market early, often because either you can afford to and you want to, or you are unwell or unable to continue to participate in the job market. So, I guess on those two sides, there's probably two different links with physical activity maybe.” (P04, male, focus group #1)*

Participants reflected on the type of job that was held and, depending on how physically demanding it was, it might be that this encourages leaving the workforce or a shift in career choice.

*“Especially if you're potentially in an active job on the tools trade or something like that that's physically active, you're going to get to a certain stage in life potentially where you physically can't do that anymore.” (P07, male, focus group #1)*

*“Is that a physical inactivity issue or is it just the fact that they can do stuff but only to a certain limit because of other capacity things.” (P10, male, focus group #3)*

*“I do think it might force people to come out of that job or potentially move to a different career path where they don't have to be as physically active.” (P07, male, focus group #1)*

One participant expressed an interest in finding out reasons for leaving the workforce early.

*“It's one of those things where you, I'd love to sit with a set of people that have just left and ask them that question and just say ‘why did you leave?’ and see what those reasons are.” (P10, male, focus group #3)*

### **Consensus statement 5**

All participants agreed that being physically inactive *can* increase likelihood of leaving the job market early. Consensus has therefore been reached.

### **Section 3 closing remarks**

Focus group participants agreed that physical inactivity could reduce productivity, as well as increase the likelihood of absenteeism, presenteeism, being unemployed and leaving the workforce early. It was noted by participants, however, that some of these concepts (e.g. productivity) had clearer links to physical inactivity, compared with absenteeism or unemployment, for example, where there could be many other factors at play.

Participants described how the type, amount, timing and intensity of physical activity could play varying roles in impacting these work-based concepts. For instance, the role of team-based activities could be particularly beneficial for people seeking employment, given how this could promote social connectedness and confidence being around other people.

Overall, participants noted that leading a physically active lifestyle can have great benefits to workforce performance, participation and retention. The focus group findings will now contribute to decisions on plausibility in the general discussion of this report.



## **General discussion**

This general discussion will concisely piece together findings from the 3 work packages as well as provide recommendations for action and future work. The research design and methods used as part of this programme of research means that causality cannot be inferred. However, based on the balance of the findings presented in sections 1-3 and following discussion and interpretation, the experts from the research team are prepared to make statements that infer plausibility.

### **Plausibility statements**

#### **Statement 1 – It is plausible that physical inactivity can reduce productivity.**

Data from numerous studies included in the rapid review, supported by the 85.1% of the entire sample from the survey who agreed or strongly agreed that being physically inactive reduces productivity at work and consensus reached at the focus groups, it is plausible that physical inactivity can reduce productivity.

When interpreting our Midlands data specifically, 86.1% also agreed or strongly agreed with the statement (84.7% West Midlands and 91.3% East Midlands), so we can also be confident that this statement is plausible from a Midlands-only perspective.

#### **Statement 2 – It is plausible that physical inactivity can increase absenteeism.**

Based on data from numerous studies included in the rapid review, coupled with the fact that 61.5% of our entire survey sample agreed or strongly agreed that being physically inactive increases absenteeism and consensus was reached at the focus groups, it is plausible that physical inactivity can increase absenteeism.

When interpreting Midlands data specifically, more than half (57.4%) of the Midlands sample (56.5% West Midlands and 60.9% East Midlands) also agreed or strongly agreed with the statement so we can also be confident that this statement is plausible from a Midlands-only perspective.

#### **Statement 3 – It is plausible that physical inactivity can increase presenteeism.**

Based on data from numerous studies included in the rapid review, and 62.8% of our entire survey sample agreeing or strongly agreeing that being physically inactive increases presenteeism and consensus reached at the focus groups, it is plausible that physical inactivity can increase presenteeism.

Nearly two thirds (63.0%) of the Midlands sample (61.2% West Midlands and 69.9% East Midlands) also agreed or strongly agreed with the statement so we can also be confident that this statement is plausible from a Midlands-only perspective.

**Statement 4 – It is not clear if physical inactivity can increase the likelihood of unemployment.**

Whilst evidence is presented in the rapid review which suggests that being physically active or playing sport can increase your earning potential, there is insufficient evidence to comment on unemployment *per se*.

Only 37.8% of the entire sample agreed or strongly agreed that being physically inactive for an extended period increases the likelihood of being unemployed. Whilst consensus was reached at the focus groups there was some dissonance presented in the supporting quotes e.g.

*“I would be very, very cautious personally about coming to any sort of conclusion about how physical activity might have any relation to unemployment or employment.”* (P03, female, focus group #1)

It was found that 39.8% of the Midlands sample (41.2% West Midlands and 34.8% East Midlands) also agreed or strongly agreed with the statement so we can also be confident that it is not clear if physical inactivity can increase the likelihood of unemployment from a Midlands-only perspective.

**Statement 5 – It is not clear if physical inactivity can increase the likelihood of leaving the job market early.**

The survey highlighted that 64.9% of the entire sample agreed or strongly agreed that employers would believe that being physically inactive increases the likelihood of leaving the job market early and consensus was reached at the focus groups. However, there was an extreme lack of data from studies in the rapid review that specifically examined people leaving the job market early, so firm conclusions cannot be drawn.

It was found that 62.0% of the Midlands sample (64.7% West Midlands and 52.2% East Midlands) also agreed or strongly agreed with the statement so we can also be confident that it is not clear if physical inactivity can increase the likelihood of leaving the job market early from a Midlands-only perspective.

**Statement 6 – It is plausible that active commuting and workplace wellbeing interventions can be effective in increasing physical activity and reducing sedentary behaviour.**

There was substantial evidence from the rapid review that active commuting, workplace interventions and the provision of standing desks can be effective in increasing physical activity and reducing sedentary behaviour. It was highlighted that 76.4% of our entire survey sample would welcome interventions that enable physical activity and/or reductions in sedentary behaviour in the workplace.

These figures were 74.1% of participants from the Midlands (71.8% West Midlands and 82.6% East Midlands). 6.1% of the entire sample said they would not welcome these opportunities with that figure being 6.5% for the Midlands (8.2% West Midlands and 0% East Midlands) so we can also be confident that this statement is plausible from a Midlands-only perspective.

These issues were not discussed at the focus groups due to time constraints, so consensus was not reached.

## Recommendations

The following provides a series of recommendations for action following the publication of this report.

**Recommendation 1** – Disseminate the findings of this full technical report and distribute the shorter insight report to key stakeholders and local businesses. Evidence and opinion indicates that physical activity can improve workplace productivity, notwithstanding the survey findings identifying that workplaces may have a degree of moral and ethical obligation to support its staff which can ultimately improve job satisfaction and staff retention.

**Recommendation 2** - Engage with government to increase awareness of these issues once the findings of the [following consultation are published](#)

**Recommendation 3** – Seek opportunities to further support universities and academics, including identifying small seed corn funds that can lead to larger research bids to notable bodies.

## Strengths and limitations

### Strengths

This research project has a number of strengths including the collegial and consultative manner in which the research team, funder and advisors worked in partnership. Solutions to problems and key issues were discussed professionally and pragmatically.

The systematic searching used in the rapid review was incredibly robust and informed by an expert information scientist. Typically, only a sample of the titles and abstracts are screened by a second reviewer, but all 1827 entries were double checked by our team. This substantially increased the resource required to complete this element of the work but provides greater confidence in the evidence that is available.

The quality of the empirical data collection can be assured through multiple means, including Coventry University Ethics Committee, the working group and extensive piloting. Primary data collection has ensured plausibility statements can be made to support the findings from the rapid review.

### Limitations

Rapid reviews do not have as much impact or kudos as systematic reviews and meta-analyses. However, the extraction of data, risk of bias and quality assurance checks- including seeking clarification from study authors where necessary- would not have been possible within the imposed deadline for report submission.

We hoped to achieve 200 responses from the survey and, while we are confident this will be achieved in due course, in order to allow sufficient time to inform the focus groups and for reporting purposes, data is presented for 148 respondents. This is greater than the responses to some published surveys in the physical activity and health field.

The sample of the survey and, therefore the focus group, was mostly white British and all participants were employed. Findings should be interpreted with caution when making decisions related to people who are of an ethnic minority background.

We hoped to question 20 people as part of the focus groups, but some participants dropped out on the day. In any case, there was limited dissonance in the focus groups. Consensus on all points was reached. It is felt that data saturation was reached with  $n=11$ .

## **Future research recommendations**

### **Future research recommendation 1**

There was a clear lack of research evidence that would enable the analysis of people who meet physical activity guidelines for health vs. the physically inactive for outcomes such as productivity, absenteeism, presenteeism and health outcomes. These in turn are influenced by outcomes such as depression, back pain and obesity. At present, appropriate study designs and data is simply not available, which warrants attention.

### **Future research recommendation 2**

There needs to be a clear definition of, and standardised measurements for, workplace productivity, as well as more understanding of, how this may differ for active versus non active job roles and between workplaces and industries.

### **Future research recommendation 3**

There needs to be a clearer understanding of the difference between acute and chronic effects of physical (in)activity. For example, can somebody who is chronically inactive achieve the same or potentially accentuated improvements to productivity if they are acutely active e.g. through an active commute?

### **Future research recommendation 4**

Due to the caution around the generalisability of our findings, further work is needed in a more ethnically diverse sample.

## **Future work**

Whilst we are not contractually obliged following the completion of this report, the following work is planned by the research team:

**Future work 1** – Conduct the risk of bias assessment for each of the included studies and publish the findings of the rapid review in a peer-reviewed journal.

**Future work 2** – In 2024, apply for funding that will allow sufficient resource to update the searches, extract all the data and pursue a systematic review and meta-analysis.

**Future work 3** – Publish the findings of work packages 2 and 3 as a Delphi study in a peer reviewed journal.

## Conclusion

This programme of research, funded by the Midlands Engine and supported by local Active Partnerships, looked to explore and understand the link between physical inactivity and productivity in the Midlands. Through a programme of research that has included three work packages we are able to state that:

- **It is plausible that physical inactivity can reduce productivity and increase absenteeism and presenteeism.**
- **It is not clear whether physical inactivity can increase the likelihood of unemployment or leaving the job market early**
- **It is plausible that active commuting and workplace wellbeing interventions can be effective in increasing physical activity and reducing sedentary behaviour**

We would now encourage the findings of this report to be disseminated to regional partners and parliamentary stakeholders. The research team encourages the academic community to undertake high-quality research in the areas where a paucity of data has been identified, e.g. comparing active versus inactive people, and we will be pursuing further research funding to inform important lines of enquiry. With greater evidence, it is anticipated that engagement with government will lead to action to prevent physical inactivity negatively influencing workplace productivity.

### In closing

To receive any clarification on any aspect of the report, please email:

[info@midlandsengine.org](mailto:info@midlandsengine.org)

## **Appendices**

### **Appendix 1**

#### **Key Personnel**

Personnel involved in the research project were as follows:

#### **Coventry University – Research Team**

David Broom – Principal Investigator

Michael Duncan

Darren Richardson

Maxine Whelan

#### **Midlands Engine - Funder**

Delma Dwight

Lukasz Gasienca-Fronek

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#### **Active Partnerships - Advisors**

Ali Clements

Michael Salmon

Dave Stock

## Appendix 2

### Full text screening tool

<b>Does physical inactivity reduce labour market participation and productivity?</b>		
<b>Reviewer Name:</b>		<b>Date:</b>
<b>Author Name:</b>		<b>Year:</b>
<b>Title:</b>		<b>Journal:</b>
	<b>Include</b>	<b>Exclude</b>
<b>Population</b>	<input type="checkbox"/> Employed <input type="checkbox"/> Unemployed <input type="checkbox"/> Off Sick <input type="checkbox"/> Leaving the labour market early	<input type="checkbox"/> Animals <input type="checkbox"/> Children and Young People <input type="checkbox"/> Machines <input type="checkbox"/> Retired
<b>Exposure</b>	<input type="checkbox"/> Physical Inactivity <input type="checkbox"/> Physical Activity <input type="checkbox"/> Sedentary Behaviour <input type="checkbox"/> Fitness	<input type="checkbox"/> Solely non-job-related performance
<b>Comparators</b>	<input type="checkbox"/> Active versus Inactive <input type="checkbox"/> High sed vs Low sed <input type="checkbox"/> High fit vs Low fit <input type="checkbox"/> Young adults vs Older adults <input type="checkbox"/> Males vs Females <input type="checkbox"/> Active job vs Sedentary Job <input type="checkbox"/> Carers vs Non-Carers	<input type="checkbox"/> High non-job-related performance vs Low non-job-related performance
<b>Outcomes</b>	<p>The paper can include a measure of productivity or efficiency which could include:</p> <input type="checkbox"/> Numerical output per rate of time <input type="checkbox"/> Days present and / or days sick <input type="checkbox"/> Days productive and / or days non-productive <p>The paper can include physical or mental health related outcomes which could include:</p> <input type="checkbox"/> overweight and obesity <input type="checkbox"/> anxiety, stress and depression <input type="checkbox"/> musculoskeletal disorders <input type="checkbox"/> preventable health conditions	<input type="checkbox"/> Solely non-job-related performance
<b>Study Design</b>	<input type="checkbox"/> Observational <input type="checkbox"/> Cross-sectional <input type="checkbox"/> Prospective cohort <input type="checkbox"/> Retrospective cohort <input type="checkbox"/> Intervention studies <input type="checkbox"/> RCT <input type="checkbox"/> Quasi-RCT	<input type="checkbox"/> Reviews
<b>Overall Decision</b>	<input type="checkbox"/> <b>Included</b>	<input type="checkbox"/> <b>Excluded</b>



**N.B.** The data presented in the following appendices is copied and pasted directly as the participant responses. Spelling, punctuation and grammatical errors are therefore likely and there have been no amendments by the research team to improve interpretation.

### Appendix 3

To what extent do you agree with the statement: “Being physically active is important for my health”. If you would like to, or feel you need to then please elaborate on your response in the open text box provided below:

<b>East Midlands</b>
Good physical health keeps body and mind working at its best levels - giving me greater energy and leading to better performance in my day job
I see a link between my activity levels & mental energy
Helps me to sleep, great start to day
Weight control, mental health, energy level, sense of purpose
I find taking regular exercise and physical activity makes me feel better in myself, function better day to day physically and mentally and strangely think and process information more quickly.
<b>West Midlands</b>
I get depressed when I don't exercise.
Both mental and physical
Exercise makes me feel physically fit and also makes me feel better mentally
I strongly agree that being physically active is key to both mental and physical health. I have noticed a decline in both due to my recent Fibromyalgia diagnosis and being less active then I am used too has had a significant impact on my weight, diet and mood.
I know first-hand the benefits of PA being a researcher myself
Designed to move. I always feel better after exercise too. Unless I've hurt myself, but that's part of life.
Feel good mentally after exercising and I can physically see my body changing for the better due to exercise
It helps me feel healthier, more energetic and helps with my mental health
I find it helps to alleviate muscle and joint stiffness
I exercise to keep fit and for good mental wellbeing.
the activity does nothing to make me feel better
Makes me feel better, more resilient to health issues, and prevents physical decline
I always feel better following training
Feel benefits both physically and mentally
Just finding the time to incorporate is difficult
If I don't engage in exercise my mental health is compromised. I less happy, focused and energised.
Helps my immune system and mental health.
If I am not physically active, my muscles become weaker, and I become fatter which is patently unhealthy
As long as you keep moving is it really necessary to do physical activities that might make health conditions worse
Aches, pains and headaches I have I attribute to inactivity and being in a static seated position (e.g. working at a screen)
For me, as I am working from home it is paramount that I exercise and try to be very physically active
Important for both physical health and mental wellbeing.
mental health benefits wakes me up in the morning (i go to the gym before work) and sets me up for the day associated health benefits e.g. eating healthier food, more regular sleeping pattern destress talk to other people & make friends

Key to my well being and helps me focus at work and play
<b>Rest of the UK</b>
Helps my mental and physical wellbeing.
I notice a difference in my mood and attitude when I exercise
helps to keep focus, makes me feel more positive mentally, ensures I take a brain break! Helps me to keep a balance and feel more alert
Beyond doubt significantly important for both physical & mental health.
Being physically active helps me to feel better both mentally and physically. It improves my overall quality of life.
Important for my physical, mental, social wellbeing
good for your mental health
Without it I feel tired and less alert
Building in movement, physical activity and intense physical activity is a non negotiable for me. I plan ahead to fit all of this into every week.
I have an auto-immune condition with widespread pain and chronic fatigue
health both physical and mental
Physical Activity for my physical health is essential. I am a completely different person when inactive... my mental and physical energy and passion is ignited when active.
Physically active utilising resistance strength training

#### Appendix 4

To what extent do you agree with the statement: "Being physically inactive for an extended period reduces productivity at work" If you would like to, or feel you need to, then please elaborate on your response in the open text box provided below.

<b>East Midlands</b>
When not working I become physically inactive and if I am working and not physically active it leaves me feeling sluggish and not working to my best performance
Increased activity improves my ability to focus, as well as mood. If I give 20% of my working time to something I enjoy them it reduces burnout.
interrupts routine, lack of optimum cadence to rest, activity and work
<b>West Midlands</b>
The additional consideration of commuting related sedentarism should be considered
I feel inactivity leads to physical and mental health issues. Therefore more sick days.
Tend to get more work done after I exercise and I actually use exercise (running) as a hack to get my brain to focus and be more productive when I'm feeling fuzzy
If I sit still for too long I can feel the motivation and productivity leaving me
More focussed when more active
If I am not active for some time, I lose motivation to do simple things like drive to work, engage with colleagues and less motivated to travel between buildings and chose to do virtual meetings instead,
it's hard to tell. I know some inactive people who are very productive in their work.
Feel more tired in general and lacking motivation without supplemental physical exercise
My physical inactivity nowadays is as a result of high workloads at my job. I work longer hours and don't take a lunch break so I can be as productive as I need to be. If my work loads were reduced, I would be able to increase my activity like I used to do
personally I feel much better when I've got up and done some movement before I start sitting at a desk for day, not only in my body but in my mind also
studies show that increasing children's activity levels increases learning ability - it is a fair assumption that this would be the same for adults
It leads to a lack of concentration, low mood and low motivation. When I am unwell and stop exercising, my work productivity plummets.

I haven't worked in a long while
the less you do the less motivated you are to do other things
Short walk can help to re-set and re-focus on the task
Lack of energy enthusiasm concentration, and can lead to illness and time off work
It can be demotivating if one doesn't regularly move around. Aches and pain increase. Can get depressed. Lose stamina so some tasks take longer or can't be done.
If I am weaker due to lack of activity, I am unable to complete my work as effectively. Further, it makes me feel worse which means I am less active
It depends what the job is
I get headaches and then need pain relief. This is distracting and takes focus away from work.
in order for me to be productive, I have to be physically inactive (I sit at a desk, so if I am away from my desk then I am not working and therefore could be classed as unproductive) however, in my previous response to the question, there are many wider benefits for being physically active and they would contribute to me feeling happy, being alert and able to contribute to the working day, so in that sense it would make me more productive, and the negative would be true as if I didn't exercise I may be sleeping worse, more tired etc and less productive....
Feel stale and under energised
<b>Rest of the UK</b>
After walking to work (which I realise I am fortunate to be able to do) I feel more refreshed and energised for the day. Without this activity, or any activity, I would not feel energised and this would negatively impact my work.
Doing too much extended exercise at a high intensity can cause tiredness and fatigue that can affect work
I know from how I feel when I do exercise or when I don't, it is also a conversation that comes up with friends/family and colleagues and all that make time to exercise see the benefit
Opportunities need to be provided and encouraged.
Physical labour easier without doing better forms of exercise
It does in that it takes time away from work, so depends what you mean by an "extended period". If I complete a 45 min at work out before work or over lunch I am more productive. However, if I go for a five-hour hike, I am not.
In general, I am very active. However, I broke my foot earlier this year and was unable to maintain my usual exercise regime for about 10 weeks, this led to me feeling lethargic at work and I was far less productive.
I'm generally not inactive
I usually regain some pleasure in work once I've re-engaged in moderate / intense physical activity after period of not exercising.
Feel sluggish and get bored. Good for creating good ideas
I know after walking at lunch I feel more productive at my desk
I lose the ability to focus when inactive for too long. I am less able to make decision and manage stress. All of which reduces my productivity.
But does depend on the reason for inactivity. If it's because I'm injured for a week or two then productivity may not change too much (or even increase if I fill my physical activity time with work or make it a focus), but if I'm injured for longer and can't be active then it negatively impacts productivity - probably because of a negative effect on my mental health
It may well vary due to individual circumstances but at population level inactivity reduces productivity
Being physically active helps greatly with productivity at work... however, as I am getting older the other big impact I have noticed is my social connectedness (again a physical activity) - since being on Teams calls and the "new normal" I have noticed my mood is often quickly depleted, even if I have been physical active before a wave of digital calls... however, when meeting in person. The walk to, from and within meetings helps to maintain my mood/motivation/performance. This has been noted since covid and still presenting as an area to work on... whilst digital communication is good, it has had a dramatic impact over the years on my daily performance and I am finding consistency an issue!
Physical activity creates energy and positivity

## Appendix 5

To what extent do you agree with the statement: “Being physically inactive increases absenteeism”. If you would like to, or feel you need to then please elaborate on your response in the open text box provided below.

<b>East Midlands</b>
Balanced lifestyle leads to happy health people
Potentially via setting a "lower bar" for capability to operate when compared only to resting state
<b>West Midlands</b>
Lack of energy and motivation.
I think it might be more likely to increase general malaise and dysphoria, and worsen depression, which could potentially lead to absenteeism, but whether the link is correlative is debatable due to the multitude of other factors affecting mental health states
Lack of motivation can play a huge part.
In the longer term, rather than in the short term
This very much depends on the individual. A lot of people do very little physical activity but rarely take time off work. I have actually found that weeks where I do more exercise than usual (5+ vigorous activities) often result in me contracting a s respiratory tract infection.
Physical inactivity and absenteeism share many determinants rather than physical inactivity leading to absenteeism per se—a vicious circle.
I can why there could be a link but I think there could be a myriad of reasons people can't go to work.
Being physically inactive could increase risks of developing health conditions (physical and mental) which could result in absenteeism through appointments etc.
I think we work in very different ways nowadays e.g. hybrid working. I think the way we work has more of an influence on absenteeism than physical inactivity
inactivity is linked to poor health which would therefore link to higher absenteeism and also poorer mental health as well as physical wellbeing
If you are unhealthy from not enough exercise, you are more likely to have health problems, which could lead to a lower immune system.
I do not feel that this influences absenteeism
its difficult to say, but inactivity will without a doubt impact your well-being, which has to have an impact on absenteeism.
It can lead to absenteeism, but not always so cannot say definitively it does or doesn't
This does really depend on context. An inactive person may have co-morbidities causing or caused by the inactivity. Change in activity levels could cause injury offsetting any benefit further disinclining future activity.
Again it depends on the job
I believe I would be more susceptible to illness and pains, which may be reasons for being absent, if I were less active.
more health disbenefits with being inactive, and therefore more likely to be unwell and take sick leave
We know, the data is out there that being active is hugely beneficial
I feel short to medium term it may not, but over time, with the long-term health impact of being physically inactive, then it would.
<b>Rest of UK</b>
This is a long-term impact, not necessarily immediate e.g. inactivity leads to increase in weight/co-morbidities, which ultimately lead to poor health and time off work
probably does a lot long term re health issues but might prevent absenteeism in the short term if less tired, less colds etc
I have witnessed this is every job I have been in, the least active people are ill more frequently and take much more time off, they also have time off for illnesses/operations as a result of not being active and not leading a healthy lifestyle, they do not recover as quickly due to deconditioning.
I've not experienced this personally, but due to the link with disease, I can imagine it is the case.
More likely to get ill with mental health issues etc

I have noticed at work that inactive people tend to be off more often
Increased inactivity leads to poorer health, increased stress and as a result people turning up to work when they aren't well enough.
I only absent if i really need to (i.e. I'm sick and can't work).
It will vary at individual level but at population level it will increase absenteeism
Only if you love physical activity so much you lie about when you do it - otherwise, this increases health and wellbeing. Again, returning to the Social Aspect vs Work - physical activity offers a "something" to look forward too, which increases Resilience in the workplace, to sustain "hard work weeks".

## Appendix 6

To what extent do you agree with the statement: "Being physically inactive increases presenteeism". If you would like to, or feel you need to then please elaborate on your response in the open text box provided below.

<b>East Midlands</b>
Physical inactivity can cause some long-term health conditions
This depends inherently on the level of activity. If "over-exercised" there can be downsides to injury and exhaustion but with multiple upsides of the endorphins released from a sensible exercise regime.
<b>West Midlands</b>
Have personally experienced this, turning up but unable to work to capacity because I've not felt I've had the energy or motivation. Usually feel better if I've been sticking consistently to a regular exercise routine.
Causes feeling more tired, less energy
I fall into this category where I am continuing to work. However I am not 100% focused all of the time, I struggle to make it in and work from home more often due to Fibromyalgia.
It's also a vicious circle. At the same time, inactivity may increase tiredness too.
Similar to the previous point really. I think it's more complicated than just being inactive.
Cannot concentrate properly without good exercise routine
I think in the long term, when stress and burnout kicks in, this is the case. But in the short term, you can be productive at the expensive of physical activity -.not that this is a good thing
I think this is particularly pertinent to mental health issues
When I'm not well enough to exercise, I start to get mild depression but continue to work, even though I am not at my best.
As previous it can but not always
The premise flawed. The concept of presenteeism is shockingly ableist. One needs to start from what tasks a person can achieve in a given period of time. A person comes to work because they want to or have to and are able to do so. Who judges what it means to be fully functional, for example? It also would depend on the occupation of the individual.
Again it can do depending on the person
I have had this in the past when I have felt mentally exhausted/overworked, have had headaches or other physical aches.
I guess it negatively impacts energy levels which could lead to presenteeism, but I think it would depend on the person.
same response as previous
Being active = enhanced well being = work is more enjoyable = better productivity
I know from experience and from what I have read, that taking short breaks for fresh air and exercise (when working in desk bound jobs) can make you feel more focused and present
<b>Rest of UK</b>
Being active can lead to you being tired at work therefore not properly doing your job!
Without the pleasure in work mentioned before, it's very easy to move into 'presenteeism'.
Agreed

as before

Again, this increases the ability to focus on work. Yet, working from home more, whilst people initially have enjoyed this new way of working - it is the distraction at home that impacts on the working day and "partnership working" - physical activity creates routine and structure - where I am seeing (and experiencing) a deconstruction of a productive routine in work, when working from home - so much so, I have/am using a friend's restaurant during the day as a surrogate work space (but on my own) to try and counteract the distraction at home.

## Appendix 7

To what extent do you agree with the statement: "Being physically inactive for an extended period increases the likelihood of being unemployed" If you would like to, or feel you need to, then please elaborate on your response in the open text box provided below.

<b>East Midlands</b>
I think it also depends on other factors and personality traits
Not in every case but physical activity usually means people feel good about themselves
I feel that people work in different ways. Working from home for me has proven less frequent activity. A routine that is easy to slip into. Going into offices or out on site increases activity levels. I don't believe there is a link to unemployment but definitely think there is a link between productivity.
I am not sure whether it's the inactivity or the lack of "can do" mindset that may arise from inactivity - this would be an interesting question to dig deeper.
<b>West Midlands</b>
I think that would be too big of a jump to agree with that statement, again, unemployment is affected by a lot of factors, including physical activity and wellbeing.
It may become that severe that you are unable to work, due to being inactive for long periods, losing motivation, not giving 100% and not being fit for work.
We work differently nowadays - hybrid working means that more people can be employed whether they are physically well or not
poorer mental and physical health I would assume leads to lower work ability, poorer health so would therefore link to being unemployed through long term sickness and long term health conditions
Strong link to motivation and confidence.
I believe that the less you do the less you want to do and this will spiral down
It would be difficult to find a direct link as per the absenteeism question. But again it could be a factor to consider
Inactivity causes depression, pain especially in the joints, loss of stamina and possible weight gain if one is over eating or drinking alcohol as well. This may lead to poor self esteem amplifying the above effects and further inactivity
You may be inactive due to illness or injury. Both have not stopped me from wanting to work
It may well affect physical functional capacity but not skills per se - depends on the employment sought.
Not sure these would correlate. I can see a possible higher risk of depression or anxiety which might mean someone is less likely to look for and secure work, but that's a stretch.
many working people are inactive due to many barriers: lack of ambition no time after work!! family responsibilities inertia lack of knowledge about local clubs seen as 'not for me' no spare cash to pay for clubs / gym (cost of living) the main reason for many would probably be lack of time. I wouldn't think there is a link between inactivity and unemployment.
Very easy to get in a negative cycle, be this well being both mentally and physically
<b>Rest of UK</b>
I feel that if you are motivated to be active it is easier to be motivated to want to work
It's harder to start than stay motivated.
mainly due to mental health impact
Too many other variables affect employment.
All of my active friends have jobs. Those who do not find it hard to find and keep a job

Depends on the person I suppose. Unemployment potentially gives more time to be physically activity, but impact of being unemployed on mental health and then motivation to be active could be negative?
as before
Again, being physically active connects society and ensure the "word of mouth of work opportunities" and offers a clear support network for getting employment. Social Networking is essential to opening opportunities - I personally think, to receive unemployment benefits, people should be connected to physical activity of choice (from online activity promotion, walking/allotment clubs/groups, gyms to sports teams... clearly a choice, but a choice that must be made and upheld according to physical and mental health ability...
Very rarely do ai come across individuals who are physically active and driven and are unemployed

### Appendix 8

To what extent do you agree with the statement: "Employers would believe that I'm more productive if I'm physically active?" If you would like to, or feel you need to, then please elaborate on your response in the open text box provided below.

<b>East Midlands</b>
I would like to strongly agree but unfortunately not everyone sees the benefit of physical activity including those in management roles
Again on an individual basis. How one person ticks isn't always the same for the rest of the organisation.
Yes, I believe there are inherent assumptions that physical activity is associated with drive and productivity.
I think this could vary a lot depending upon the sector you are working in and knowledge of physical activity benefits and their own lifestyle choices.
<b>West Midlands</b>
I agree, but do not believe many employers would be observant enough for this
Employers may like to see that you are physically healthy, meaning less sick days.
My employer sometimes thinks I spent too much time on fitness and not enough time on work
I think there is a tendency to link high physical activity with higher motivation to work and lower levels of "laziness".
The employer will be more likely to believe that people are in good health when they are physically active.
Don't think they would think any different
It's not clear how an employer would know how active I am outside of work?
I think this will dependent on the employer and their work principles
Although i do not think that being physically active makes you more productive i do think that an employer thinks this
There will be some employers (particularly those who are physically active themselves) who would recognise the link. However, in general the majority will not in my opinion.
I agree that they may think so but people can be busy doing nothing
Previous employers have talked out loud about their opinion of this link. Unfortunately a previous employer also felt that people who were overweight were 'lazy'. I disagree here as know many example contrary to this and believe it discriminatory. Also, this would be a subjective judgement by an employer, based purely on their own opinions of how I look, behave and what information about my home life I choose to share.
Agree as I am in an environment of colleagues informed about the benefits of exercise. Likely different in other disciplines / sectors.
How would they know? Also, I hope not! What if someone is unable to be physically active due to disability? It's not as if it would make them less productive at work.
there is a bit of a halo effect for people who exercise and keep fit, and also pretty privilege! people may think that those who are more attractive are more trustworthy, better people etc.. i think there is research to prove this. this could lead to people thinking physically active people are more productive....?

Healthy workforce concept and culture is key
<b>Rest of UK</b>
I'm not sure they are concerned with that, just that work is done.
Depends on the employers levels of activity - if they're inactive they're probably more likely to relate to an inactive person
Employers may link physical activity with tiredness and this may influence flexibility to work evenings and weekends and so may not be viewed as more productive
It's a mindset, how people are outside of work can influence how they are inside work.
Employers wouldn't necessarily know if you're physically active unless discussed. other than making assumptions based on physical appearance. Additionally being physically active may mean long walks at lunch, which means less time to be productive in the work day.
I think most employers want to see people 'at their desk' and are not interested or able to really monitor productivity.
I'm not sure employers tend to think about employees lives outside of work much, unless it negatively affects their work. E.g. someone is constantly getting injured in rugby games on a Sunday and then are not productive/absent on Mondays regularly.
Generally agree but a balance could be tipped where over/extreme activity may reduce productivity
For some organisations 100% yes - but, having worked for the probation service, they don't promote this internally, this is a "outside of work" thing... but, we need employers to also be promoting and enabling physical activity in the work place also!

### Appendix 9

To what extent do you agree with the statement: "Being physically inactive increases the likelihood of leaving the job market early" If you would like to, or feel you need to, then please elaborate on your response in the open text box provided below.

<b>East Midlands</b>
Depends on what kind of job they are in
Difficult to answer as those physically active can see the benefits of early retirement and more time to take part in healthy outdoor physical activities
For me, it is depending on the industry and individual. Working from home has caused some of my colleagues to leave their role to find more active ways of working. Some people enjoy working from home, I on occasions do as it is convenient. I know that there is an option to walk at lunch times, got to the gym after work and eat healthy, but the implementation of these things are where I struggle. Targets and goal tend to work in favour.
Where inactivity leads to ill health this is a direct relationship.
<b>West Midlands</b>
Contributes to functional decline
The more inactive you are, the more likely you will have health issues. Maybe even shortened life expectancy.
I think other factors have a bigger effect, such as having children, or major illness
Being active is healthy and prevents all kind of chronic conditions
many other factors are relevant as well
Might lead to poorer health in later life due to cardiovascular and musculoskeletal diseases.
Assuming physical inactivity is mainly caused by illness, I have to agree and disagree at the same time. Statistically, it is true. But I am sceptical that interventions to reduce physical inactivity will reduce the likelihood of leaving the job market early.
I think it very much depends on the situation - I think the greatest reason for leaving the job market is to provide care for someone because of the inaccessibility of affordable care in our society
increases likelihood on long term health conditions and therefore earlier retirement age
Lack of exercise leads to higher likelihood of poor health, therefore being unable to work for as long.
Leaving the job market early often means claiming health related benefits. Once people get comfortable with this lifestyle, there is little incentive to change.



if you dont use it you lose it
Someone who is physically active is potentially more health conscious, therefore may have a greater chance of sustaining employment to an older age. Potentially, there may be differences across industries, subject to the physical nature of the job. Logic could suggest that regular physical activity would support those in more strenuous roles, however is the physical nature of their role sufficient to do this anyway? Again, I expect it will be the impact of a wider set of health behaviours/ issues than physical activity alone.
Inactivity leads to health problems such as obesity, diabetes, heart disease and stroke. Comorbidities increase with age. Dealing one or more issues make it more likely that people opt to leave employment early or are forced to.
Again this applies to me but I would love to work. The minds willing but body is not able
I think there are a lot of factors that would come into this decision.
maybe more likely to have health problems if you are stationary all your life! back problems, weak muscles and joints for example
Unless you are talking of early retirement but by choice as you are healthy and wish to maximize this opportunity.
<b>Rest of UK</b>
Inactivity may create health impacts, which may lead to people being forced to leave the workplace early.
I believe it does - as stated before it can help with how you feel and mental resilience etc
PA is critical for longevity.
More long-term health conditions are associated with being inactive, again I have witnessed this many times.
Potentially association rather than causation. I think an underlying health condition which may be the primary reason to retire early may impact physical activity behaviours. Equally, someone may retire early because they have a passion for physical activity and want to do more of it before their bodies won't let them (e.g. to sail around the world or something) might chose to retire early.
Not such a strong causal link for this
Many factors are health related to "leaving the job market early" but being physically active your career long, will not be one of them - a serious injury whilst doing activity is the exception, but is an exceptional circumstances.

## Appendix 10

Does your current employer create opportunities to be more physically active or reduce sedentary behaviour? E.g. by having workplace wellness schemes that specifically promote physical activity. Please describe what is offered in the text box below.

<b>East Midlands</b>
walking meetings , activity days
Team days, activity sessions, people have walks together at lunchtimes.
Additional money to salary to be used for physical activity
Standing desks, cycle to work, ability to do exercise during working day, financial wellness contribution
Well-being walks
I run a fitness & rehabilitation study and all staff and volunteers are supported to take part in free activities. We are inherently self selecting in being active already but this needs underpinning constantly as our workforce is older.
Work place wellbeing scheme and access to facilities to be physically active
Cycle to work scheme. Lunchtime walks. Discounted memberships. Flexible working hours.
Cycle Salary Sacrifice Schemes A cycle salary sacrifice scheme allows staff to buy a bicycle and have the cost deducted from their salary whilst avoiding paying tax and national insurance. The City Council has two schemes; The Green Commute Initiative and Halfords Cycle2Work.
<b>West Midlands</b>

Bike scheme Physio Gym membership
discounted (%) gym membership. and cycle to work schemes
Cycle to work schemes, wellness schemes, discounted gym memberships
we have a cycle to work scheme and also a bike rental scheme
Already part of my job, on foot engineer
On-site gym and gym classes
Regular session in the local park Walk and Talk meetings
Flexible working and encouragement to be active regularly
My employers allow us to take time/extend a break/finish early so we can incorporate physical activity into our day. We have now included a Business Mile into our work where we phone a different colleague each week and go out for a walk and chat with them on the phone either about work or non work.
Cycle to work schemes, walking groups, after work sports activities such as indoor soccer, badminton etc
staff badminton, football and table tennis. wellbeing online workshops, telephone counselling, discounted gym membership. wellbeing champions scheme, cycle to work
We hold lots of classes for fitness and wellbeing. Workers are encouraged to take time to join them if they want to.
Gym reductions, 'chair yoga', they encourage walks
Wellbeing walks, activity sessions promoted
Healthy lifestyle grant
There is a health and wellbeing offer available to staff. Includes pool bike scheme, discounts on facilities, promotion of local activities and stair use campaigns. As there is now more working from home, i suspect the uptake has reduced.
Yoga classes, walks outside of your break time, social events
Activity sessions Monthly meeting sessions
Employer encouraged staff to get a free health monitor from the local authority to track steps , heart rate , exercise etc. If been at desk for a period of time boss will suggest a drink, a walk away from the desk or getting something to eat.
My job involves physical activity and offers schemes such as cycle to work and gym support
walking, football, badminton, reduced leisure passes
Car pool schemes walking groups physical activity team / service who promote this important messaging to the workplace health and well being surveys sleep workshops online yoga and Pilates online mindfulness cycle scheme health checks
Lunchtime walks, staff yoga sessions, Uni gym etc.
I don't know for sure as I lead an active lifestyle anyway, but I have just had my bike fixed for free thanks to my employer, so surely that counts :) I also see adverts for fitness classes and other initiatives from my employer.
The ability to go for walks outside of just lunch time to support a better balance. Allowing work from home, so that on days I have physical activity planned I can be closer to home to be able to attend regularly
Cycling, good comms on health improvement
<b>Rest of UK</b>
Cycle to work scheme / walk to work
Lunch time activities, annual conference that includes active activities.
Learning and updates, some discounted gym memberships, other opportunities to be active, promote breaks including walking and getting outside
Cycle to work, encouraged to take walks, breaks.
Workplace wellness, cycle to work schemes are available. I would say these are add-ons to the job though, our employer does not create time/opportunity to be active whilst at work, you do it of your own volition
Lunch time workout classes, access to a gym and track, standing desks.

Stand up desks / showers available / flexible working hours
team building days always involve an activity, people are encouraged to be active, but more could be done, such as a discounted gym membership, wellbeing days etc
Flexible working hours, no strict rules on workwear, cycle to work scheme
I'm quite sure they exist, but they're not promoted as part of day to day work (particularly for remote workers, like me).
Extra 15 minutes at lunch if you choose to do activity
Wellbeing allowance
Free gym membership Access to other online wellness resources
encouraged to be active in our lunchbreaks, or before/after work
Walking breaks, walking meetings
gym membership co-financed by the employer
Bikes that you can borrow whilst on site, cycle to work scheme, standing desks, sometimes have yoga sessions. Previously had a corporate gym membership scheme you could buy into but this is not been renewed because uptake was poor (it was more expensive and inconvenient than others, especially now many people work remotely and do not live near the office and gym associated with it)
Some health advice, facility provision, flexible working to access activity, buy a bike scheme
Online activity sessions, mental health walks etc
lots of services

### Appendix 11

Please respond to and describe if you would welcome interventions that enable physical activity and/or reductions in sedentary behaviour in the workplace and what would you like to see implemented. Please describe why your response is 'no' in the text box below:

<b>East Midlands</b>
<b>West Midlands</b>
Not sure
The job is physically active
My job is physically demanding so would not require extra scheme
forcing people to jump through more hoops will deter people from working
I don't believe its a work places responsibility to encourage an individual to do something they know they should be doing there self. However, if it can be proved that workplaces that do encourage activity create a more productive workforce then obviously workplaces should want to encourage this
This is about personal choice and responsibility. It's a fine line where it may become coercive. Systems already exist in health and safety regulations and guidance which are not always applied. If they were then risk assessments would identify the risks associated with sedentary working and thinks like ergonomics and screen time.
I believe the current offerings are sufficient
<b>Rest of UK</b>
Because it would increase pressure to participate which is difficult with an energy limiting condition
Workplace is for work. I don't like being forced to any physical activity.

### Appendix 12

Please respond to and describe if you would welcome interventions that enable physical activity and / or reductions in sedentary behaviour in the workplace and what would you like to see implemented. Please describe why your response is 'yes' in the text box below:

<b>East Midlands</b>
Team sports or activities. Team building activities on a regular basis
Walking treadmills at standing desks, set periods within working day to be active, gym on site for employers to use.
increased work based interventions will make it easier to build it in to everyday life
Working full time, means that work makes up a big part of my weekly schedule. Creating a culture of active lunchbreaks makes a difference to my weekly activity levels. Particularly with a predominantly sedentary job. I also use a standing desk at home and it's amazing.
helps increase productivity
Being more active helps support my mental health which in turn also helps with productivity at work
Encourage walking meetings
regular opportunities to take part as a team
I have gone from a very active job delivering classes across our district and have since started a new job which is heavily office based. The transition has been a struggle.
Can always do more
Work place encouraging activity - stand up desks , meaningful breaks , health club memberships, flexible working hours enabling employees to pursue physical activities
I think we have a good well-being team, this being said , working from home is often overlooked. I don't believe it's as simple as creating a "home workout" for people to do. I think it would need to be a physical face to face intervention to make real change.
Standing desks, walking groups
The benefits of physical activity are established., The tricky part is to encourage participation. There are many factors that are discouraging and education alone is not enough unless/until the impact of inactivity is felt. Making the activity fun, participative and with a clear value perception is key.
I work from home and most of my time is in front of a screen including Teams calls. I'd welcome more / stronger messaging on interventions for physical interventions
wellness sessions - or time to take part in physical activity
Time and local facilities at low cost made available (by employers) and the front, middle or back end of the day for employees to take part in physical activity
Moving more is important for health, even if it is just making a drink and standing up for a few minutes.
home working has reduced the amount of walking I do as at least I used to walk from the car park to the office every day. Encouraging walking meetings would be good but not always practical to enforce and possibly not acceptable to management. Formation of a yoga club/cycling groups to encourage socialising activities.
<b>West Midlands</b>
Positive mental and physical health benefits
I believe that being sedentary for long periods of time creates health issues mentally as well as physically.
I am chair of thr social committee and tried to get a 'Jump for June' initiative started where colleagues at my work supported each other to get moving in any kind of physical activity, created a group on Strava, marketed it, with prizes. One person signed up. Out of 120.
I'd love if there was a space in the office where I could get up and walk around or stretch without being judged. If I leave the office to be more active, it's frowned upon but if I stay and move about I feel like I'm interrupting people. Something like a rooftop garden would be amazing. Likewise, if there was a scheme to encourage active transport. I prefer to get the train as I have to walk from the station to the office. But the cost of getting the train is going up and up, so I only take the train a few times a week because I can't afford it.
I think it would attract more people to the office and increase productivity
more time to undertake activity outside of working hours. long hours, travelling to and from work etc prevents me having the time to go to the gym or classes.
Breaks in long meetings to take a short walk
I think it will have a positive impact.
Anything that would help the workplace recognise that workload pressures can contribute to sedentary behaviour

Meetings are commonly back to back, doesn't allow for any breaks.
Would be fun to do some PA activities at work to break up the routine
active and co tenuous talks about PA and if possible to have PA champions who may not necessarily be part of the occupational health team
Events promoting activity (e.g. cycle or walk to x)
Respecting core hours so that people can exercise, corporate gym discounts, active socials
I think anything to encourage active lifestyles is a good thing
It would be good for team morale and team building. And be motivating if joining such interventions would be partly allowed in working hours (and counted as work, as they do in Sweden)
My job is rather physical already. What I would like implemented is recovery processes.
Typically a weekly or bi-weekly fitness session that helps people move. Major problem is that a lot of people don't know how to exercise or the work schedule does not permit them time. Incorporating small time frames for the employees can help them exercise and learn a bit about fitness that can change their perception.
I would feel more energetic and less stressed
More use of standing desks and walking meetings - where possible - things like 1-2-1's
Standing meetings Walk and talk meetings held outside
Being active improves my mood and concentration
More opportunities and messages from senior management to take wellbeing breaks such as walks and talking to mental health leads
Building interventions that enable physical activity help me feel refreshed when I sit back down to my laptop which helps with my mental health and productivity.
We have been asked to go back to the office (even though most meetings are online), reducing flexibility for employees that enabled time for walking or physical activity during the day fitted in around work.
I think availability of an onsite or easy access gym would encourage lunchtime workouts. I think a greater availability of treadmill desks would be very welcomed
One of the reasons I left my previous role was due to the amount of screen time (overly reliant on back to back online meetings), too much sitting, only doing 1k steps during the work day, previously I was doing 5k steps easily at work
creating a culture of walking one to ones, recognising thinking time as "work" so not tied to a status on teams
to be across all departments and look at workplace lunchtime activities
It would raise morale, motivation, encourage people to stay active, increase exercise, better health, more productivity and better decision making.
More opportunities to move more across the day
We used to have a staff wellbeing programme but this has stopped
Maybe low impact movement and stance exercises
<b>CYCLE TO WORK SCHEME AND CYCLE STORAGE</b>
I think that having some activity at work is beneficial to the body and mind but there is just not enough time due to workload
Anything to assist in reducing inactivity is welcome
Any workplace strategy to increase physical activity/ reduced SB - needs to be owned and promoted by workplace leaders/ senior management. Otherwise engagement is likely to be with only those who are already active. Requires a mix of fun activities (such as intra and inter workplace challenges) and changes in policy (e.g. lunch away from desks).
Being too stationary and inactive at work can lead to health concerns
Many people struggle to find the time out of work so this would help and could also incorporate team building which would promote a more collaborative, wellbeing focussed working environment
Potential links for reduced gym memberships/ classes
Pre covid we use to have yoga and fitness classes paid for by the company which was great for moral and physicality
Being active feels good and less lazy in the workplace

more active offices - options for standing desks both in hot desk offices and home working, so you can move a bit whilst working.
Health and wellbeing benefits
I need to build activity into my normal day, this would help
more group activities, encouragement for regular activities
Directors would have special event days together. Child supervisors would have get together where we had therapy treatment days for relaxation & motivation
More communications about wellbeing in general, have a group that is proactive about it, have a budget for it
improve health and wellbeing
Yes - very important
I would love a culture where movement breaks and in between work tasks was encouraged. As I said earlier, I struggle with getting headaches when I've worked long days at a screen. I also have limited time outside of work to mindfully exercise, I love it to be more incorporated into my daily life, rather than just outside work hours. I would feel more valued by my employer. I would love the opportunity to stretch in a yoga class, which fitted into my lunch break and was onsite. I would love professional input on how to keep my body and posture well aligned (e.g. physio) with guidance on exercises to keep aches at bay. I would also love if there was an exercise class onsite just after work hours that I could join before I commute home.
A lot of people may have sedentary jobs and it is important for people to stay physically fit
I would, but these do have to fit around each persons timetable, can't always be the seam times for everyone - even considering a set time you (hopefully) can dedicate time to.
Making it easier for employers to build activity into workplaces
I don't really care much for myself as I'm already happy with my fitness routine, but I think it would help others.
I had to think hard about this question. I guess I would engage with interventions if they appealed to me and were 'easy' to sign up to. for example if my team members also showed interest and i could go with people I knew, and if the activity was appealing to me. I wouldn't sign up on my own.
I believe where people are physically able to be active having a employer who is supportive of having an active workforce will help normalize that sport is for everyone and not just the competitive. If you look at workplaces in Japan where they offer Tai Chi and other simple activities in their workforce age group they live longer and healthier lives.
I think physical activity is good for the employer as well as the employee. It helps eliminate boredom at the job.
My job causes me to sit at a desk on a computer for the working day. It's difficult to fit in exercise.
There is always the opportunity to have more offers
We are currently looking at this, but as a small charity it will be something small. E.g. we are trying to get reduced membership from the Council's Leisure Services; the CEO encourages staff to take short walk breaks; and when there is a staff meeting with food, tries to include fruit and salad
<b>Rest of UK</b>
Be great to encourage colleagues to take a break, stretch their legs during their lunch break.
It works well with what we have I think others should promote this
Breaks for being active, encouraged to cycle, walk, run to work. Standing desks etc.
Because it will make me more productive during the times I am working.
<b>ENCOURAGED AND ACCESSIBLE OPPORTUNITIES OT BE ACTIVE.</b>
It's important to be active, it would break the day up and potentially build morale within teams
2 jobs - one very sedentary, would like a staff football or something. other is very active so not too bothered whilst doing it, though is a one-dimension yet still tiring exercise
Flexible working hours
Standing desks at each station. Mandatory movement breaks at set intervals. Contributions to gym memberships
Any intervention that may support people to be more active and less sedentary will be welcomed

I think this would be welcomed by the whole team, any activity between the team would also help build rapport. It would be great to see a scheme that offers discounts to activity i.e. gym memberships.
As I am aware that SB is a risk factor for health independent of PA and the workplace is where a lot of individuals spend in SB
Reduced gym membership Compulsory lunch breaks, encouraged to leave the desk Wellness days
Walking meetings outdoors owing to research on benefits of connecting with nature. Encouraging movement supports wellbeing. Also shows employees that employers value their health and wellbeing. Health checks can also prevent sickness etc.
I would like to see more group activities organised during lunch hours that promote thinking about health and easy steps to start changing our health. To encourage people to support each other in weight loss groups and gentle exercise.
That all employers understand the benefits and create flexible work conditions and actively encourage people to be active when they can
Healthy workforce should increase productivity and decrease absenteeism
I think the biggest wins here would be about reducing rates of driving to work.
More workplace clubs for people to take part in
Counters the perceived permission ... moved from being busy culture
It would be enjoyable and help with morale in the workplace
Our work is mainly sedentary thus it is vital that many different opportunities are provided. Standing meetings, walking meetings
I spend too much time sitting at a screen and options to move around are always very welcome
My workplace does not consider how active I am, I spend the majority of mine in front of a laptop. I would like team challenges/ initiatives
I care about my health, and the quality of my work. I want my employer to also be invested in me, my health and creating a workplace where I can thrive.
Support for daily activities
Physical activity is really important for my own health and wellbeing. Anecdotally, those on our team who are more active tend to not get sick as often as others who are less active. I work in a knowledge intensive business where you bill hours to clients and we can easily spend hours in front of a computer in the same position and it's not comfortable, and because of the billing you feel like you don't have much choice (unless you work early/late) to make up for breaks.
I think encouragement is needed to get people up from their desks regularly. It is too easy to get stuck for hours at one's desk, especially now online meetings are the norm.
Organisations that are culturally active, especially when activity forms part of a group activity are more productive, retain staff better and generally are more vibrant and engaging places to work
West Midlands and other areas have a plethora of Work Placed History that we could learn from - in the 1920's, <a href="https://www.playingpasts.co.uk/articles/sport-leisure-history-generally/industrial-welfare-sport-and-leisure-in-post-first-world-war-social-reconstruction/">https://www.playingpasts.co.uk/articles/sport-leisure-history-generally/industrial-welfare-sport-and-leisure-in-post-first-world-war-social-reconstruction/</a> this was revolutionary and as a work force have to date lived the longest... there is a lot to learn from this. Employers are more concerned with KPI's and Outcomes in short, the Destination. The journey that employees are on is critical to ensure a consistent workforce is in place - this requires a balance of physical, mental and social action - this will increase wellbeing and a happier and more connected workforce, this is a more consistently productive workforce. Even shorter, employers need to revere Consistency over Intensity = physical activity, social connectedness and mental Wellbeing are an invaluable part of "consistency" and Resilience.
I think organisational encouragement is a useful nudge for some - for others it's time they don't have
Building into the day is important. Often I prioritise work over lunch break etc when I am most likely to go for a walk. If there was scheduled time to be active then I would be more likely to do it
recognise that PA is vital to a successful business

### Appendix 13

To what extent do you agree with the statement: "It is my employer's responsibility to encourage me to be physically active?" If you would like to, or feel you need to, then please elaborate on your response in the open text box provided below.

<b>East Midlands</b>
I think it starts with personal responsibility , but employers can play a huge role in supporting individuals make easier positive choices
i do think it is an employers responsibility to encourage a reduction in inactivity and sedentary activity. I also think it's an employers responsibility to ensure people have appropriate breaks and could be active within them.
Agree to some extent but we need to embed the positives of physical activity from the cradle
It is the individual's responsibility. It can be encouraged by the employer but it's the employee that makes the conscious effort to do the activity.
Whilst I believe that the Employer can do enormous amounts to create an active culture, the ultimate buy-in and responsibility must lie with the employee (especially if it is to be sustained).
I spend more time with/for them than anything else in my daily life, my health and well being should be a priority
It is an individuals choice to be physically active, but every part of society can and should play a role to encourage the population to take exercise. These messages need to reinforced and opportunities facilitated by employers give most people spend most of their days and lives at work.
I think they have a role to play, but it isn't their responsibility.
<b>West Midlands</b>
It's up to you to get off your lazy bum.
Most work places would like you to spend every waking hour there. You are even looked on in judgement by colleagues if you leave on time or never work overtime. Physical activity not only keeps you healthy, but releases happy endorphins. If your employees are happy, they're likely to do a better job and want to put more effort in. Your work should encourage you to do exercise, especially if the job is a sedentary one.
Encouragement is nice I, but it's not their responsibility, it's mine
It is the place where I sit larger parts of the day
It's down to the individual
It is down to the individual. However employers should encourage regular breaks away from a computer screen if you are spending a lot of time in front of one.
Everyone is their own person and are ultimately responsible for their own wellbeing provided they are of an age where they are able to provide for themselves
This has to be accompanied with reasonable workloads and not just facilitating PA
needs to be endorsed and supported otherwise PA during worktime would be seen as negative
I think it should be commonplace to facilitate an environment where physical activity possible as an employer - the responsibility to be active lies with the individual.
I think physical activity is part of the life/work balance of all individuals. The employer is responsible for ensuring that life work balance is in check - not for providing actual physical activity interventions
Joint responsibility, however the workplace and create the right conditions
employers can encourage this but it is still down to an individual to actually look after themselves
It is my responsibility, but I would appreciate the opportunities.
Personally feel it is the individual's responsibility but employers can support
Ultimately, I think it its my own responsibility, although employers should certainly do what is in their power to do
its up to me to be active, its my choice, but it would be good to have the option to do so in work time
It is employees responsibility to ensure they present at work fit and physically able to do the job.
Again it is personal responsibility. The employer has a duty of care to keep the employee safe and should concentrate on that and automatically at least in theory risks against sedentary working can be mitigated for.
Not his job
You are responsible for your own well being
The responsibility of the individual, as an adult, to be physically active and make the right choices to engage in MVPA
That solely lands with the individual. However, its important for the employer to highlight benefits



I would like it to be viewed as both the employers and my responsibility. I currently think society places full responsibility on the individual.
Probably should be some encouragement and support from employer. This would likely vary with employers understanding / interest / appreciation of physical activity. Help for those not educated about exercise etc, should be available.
It's an individual's personal choice. It's nice when an employer helps out, but it's not their 'responsibility' to do so.
it is not their responsibility, but i don't mind at all if they encourage it.
It shouldn't solely be reliant on the employer to make you active the employee should want to do it. However by the employer creating an environment where they employee can feel safe to be active they are more likely to do it.
It's each individual to be responsible for their own health and wellbeing when it comes to voluntary physical activity.
Again its a culture thing that needs to be driven by Senior Management
I would phrase it as "Employer's have a responsibility to encourage staff to be physically active" - but other bodies also have a responsibility, as do I
<b>Rest of UK</b>
Nudges from employers I think are a good idea but wouldn't go as far to say the employer has a responsibility.
I think it's their responsibility to encourage and give opportunities.
It is about personal responsibility to an employer can suggest and support
It is my job to encourage me, it's their job to help facilitate.
It is not their responsibility, it is an individuals choice but it is their responsibility to provide the conditions to enable them to be active
i think workplaces should have a responsibility to staff health and wellbeing even when it is incompatible with their profit margins
It is also our own responsibility as individuals, but we work for such a large portion of our life that our employer should be encouraging health and wellbeing including an active lifestyle too.
It doesn't seem like helpful behaviour for people blaming someone else for their inactivity, there needs to be some accountability!
Certainly a shared responsibility.
I feel I need permission to step away from the computer. We have a presenteeism culture
I think employers can encourage and support, but it's not their responsibility. I think it is the government and the individuals responsibility.
Not so much encourage, although I know it used the work in my last answer. It's possibly more about enabling and this can be cultural, for example making it the norm to go out and walk at lunchtime
Firstly its a personal responsibility
This shows an caring employer.
As above, I think it's important to make specs for it too, just saying 'we want you to be active' doesn't get people to change behaviour

#### Appendix 14

To what extent do you agree with the statement: "Employers have a moral and ethical responsibility to ensure their employees are physically active" If you would like to, or feel you need to, then please elaborate on your response in the open text box provided below.

<b>East Midlands</b>
it depends on the job that you are in.
we need employers to play their part , as we need a more proactive environment that is supported by all system partners
Whilst I do believe employers do actually if someone doesn't want to move more then it may be a distraction
If that happened we would have a happy healthy workforce

Again they can encourage but the actual doing comes down to the individual.
This is another difficult one. I think you have a moral and ethical responsibility to TRY and provide all the support and guidance possible to be physically active but from significant experience dealing with sedentary populations it's not always possible to "ensure" against a client wishes.
Not so much to 'ensure' but to provide knowledge and opportunity to be active.
<b>West Midlands</b>
It's up to you
Partly their responsibility
It should be encouraged, not enforced
They cannot "ensure" their employees are active but they should not hinder employees from being so and could do more to encourage it.
Employers have a duty to care about people's mental health. And if they do, physical inactivity is likely addressed at the same time.
They probably are morally responsible that their employees are physically active but I do not believe each person themselves should be relying on external influences for their own physical activity
It should be commonplace that employers create a working environment and culture that encourages physical activity
It becomes intrusive. Employers should provide opportunities for employees to participate in physical activity
see previous answer
It is a personal choice - free will must be respected. It is multi-factorial, factors to consider include, cultural beliefs, current physical health, experiences, ability, learning disabilities and mental health.
It's personal responsibility but also I believe employers have a duty of care too to some extent
I think employers should promote physical activity during work hrs
Should offer opportunity but not be enforced
It is employees responsibility to ensure they present at work fit and physically able to do the job.
The concept is flawed. Why is the employee inactive? Would the employee be inactive if they were not in work? It's too complex for an individual to navigate for themselves off times and presumably for employers too. Their time could be better used making the work environment a better place to work.
Not his job
Within reason depending on the job role and capabilities of the staff
Should be able to provide the incentives / sessions / facilities for those who don't have them.
See above. This is dystopian to me - I don't want my employer involved in my health and wellbeing to that extent. Just thinking about it makes me feel a bit uncomfortable! Support and encourage, sure - 'ensure', no way.
personal responsibility is key here. but i understand some people may take more nudging to engage with physical activity than others and so employers can have a helping hand and implement schemes etc, but it isn't their MORAL or ETHICAL responsibility.
I think it's more up to the individual
Showcase the benefits, make it easy, promote, promote and promote more!
I would word it differently - it's not for them to ensure - but to encourage, enable and support
<b>Rest of UK</b>
Again, responsibility is a strong word but having posters in the lunch room (there are so many posters for quite dull things in any staff kitchen) - so why not make a poster encouraging walking more engaging?
I think it's their responsibility to give opportunities but the employees responsibility to take those opportunities or not
Again though you cannot force people, and there might be other factors
Not sure it is a responsibility of others
I think my employer would say that there is nothing stopping me stepping away from the computer, but there is little encouragement to do so. Managers have made comments about looking on Teams to see who is online

Employers should not create barriers to activity, should not normalise inactivity and should be better at promoting the benefits of activity.
If the company sets out to look after employee's health and wellbeing then yes, physical activity should be covered in it. But honestly, most employers do not prioritise this. I also don't think that the monitoring of employees to ensure they are physically active would go down well with many staff members (unless they are already active)
Yes, but I'd rather say there's a moral and ethical responsibility to try to ensure... as ultimately an employer can't force people.
Employers should make employees aware of the benefits and seek to enable but not insist
Again to increase consistency over intensity is essential for health. Working from home also is increasing sedentary behaviour and employee colleague connections.

## Appendix 15

To what extent do you agree with the statement: "Workplace wellbeing schemes that promote physical activity and reductions in sedentary behaviour reduce physical inactivity" If you would like to, or feel you need to, then please elaborate on your response in the open text box provided below.

<b>East Midlands</b>
Again they can inspire some to become active, but I don't think it's ever consistent or sustainable enough.
If a scheme is provided at least some employees will respond and others may follow by example, and so this is an important tool.
It is about building the right culture. Home working has undone a lot of the good work my employer previously undertook as there is no peer pressure or opportunity for social enforcement
<b>West Midlands</b>
These interventions are usually set up from an employer perspective against employer metrics. So for employees they are often neither relevant or impactful
Wish they did, but from my experience employee uptake is low.
I think it provides a safe space for people to try new activities at little or no cost to the employee. Its well documented that people are more likely to be active when they are doing things they really enjoy.
creates a positive culture but it is still up to individuals to engage on these programmes. its really difficult for a large workplace to put on sessions for inactive people as they are naturally inclined not to exercise anyway, so you may find that workplace sessions pick up people that tend to be active too
I don't really understand the question/statement
It really depends if schemes are owned and promoted by senior leaders. Needs a culture change if changes in physical activity are going to be sustained. Otherwise, they tend to be one off interventions that have a short term impact and only involve those who are already active.
The statement is self fulfilling. Encouraging someone to move makes them move. But it does depend on how these are employed and whether they are effective.
Any employer that promotes well being and looks after the welfare of their staff is a good boss
Whilst there are companies out there that focus on workplace wellbeing, I don't see their effectiveness of them, i.e. I don't see the evidence that people are using them/they are producing the desired results etc
Just because the workplace offers a wellbeing and PA promotion doesn't mean it will reduce physical inactivity, as employees might not engage with the scheme and therefore their behaviours and habits won't change.
I have not experienced a workplace that does this.
If the scheme increases PA and reduced sedentary behaviour then yes, they have reduced inactivity.
Sure, if they work!
i assume that is what the aims of these schemes would be! so i would hope that they would (for the participants, not wider employees)
As many have the support of wider NHS stakeholders
<b>Rest of UK</b>
it's not the scheme it's the person and how they engage with it.

they can but some probably better than others. did a wellness checkup at current place that was interesting but didn't actually offer anything
Lack of evidence to support this on the long term
It needs to be a culture, people will follow what others do.
I think they may do so, if they characterise 'Physical activity' wrongly (e.g. as participation in competitive sport).
Haven't seen it in action
It depends. It has to be the right schemes for the right people. It's context dependent.
Maybe short term, but i doubt it long term for most people
I'd hope so, but I don't have proof of that.
They form part of a culture that normalises activity and being active
Many employers and organisations offer this and that is it - to utilise this, it also has to be an active culture and connection to active colleagues will reinforce these opportunities benefits and take up!
Not sure

### Appendix 16

To what extent do you agree with the statement: "Workplaces that promote and enable physical activity and reductions in sedentary behaviour improve productivity and work performance" If you would like to, or feel you need to, then please elaborate on your response in the open text box provided below.

<b>East Midlands</b>
The enhanced team work, connections and camaraderie helps with everything as well as the benefits of the physical activity.
I would like to think that this is the case
In terms of creating the "can do" mentalities that go alongside activity and mental/ physical wellbeing that results.
<b>West Midlands</b>
Workplaces that do this usually have a good culture of support
Employees may believe that their employer is caring, which promotes mental health.
I think productivity and better work performance is multi faceted and cannot be ascribed to a single entity such as physical activity
Not sure being active has ever made me more productive, however sitting all day in previous role caused me pain and discomfort
People want to prove themselves afterwards, are more positive about work, feel valued and have more energy.
I don't think this is measurable. Productivity and work performance are subjective and it is dependent on whether physical fitness is a factor in those. Working on an assembly line, means presumably a person is staying physically fit to achieve the task to keep the line going. The person may be standing all day and switching between tasks thereby staying mobile. A person in an office sat at a desk for 8 hours might benefit in a minor way if for example there are morning team building exercises or a gym membership. But it's simplistic to suggest that it is the physical act of doing so that brings about any improvements in performance. A person may feel they are being valued more and thereby feel they ought to be working harder for the employer. Beyond that it is difficult to see what way an employer can effect lasting change in behaviour. Child care support or more flexible time off to attend health appointments, pay rises or shorter working weeks might achieve the same effects.
Any company that can do this is likely to have fewer staff turnover
I agree with this statement, but only theoretically at the moment. I don't have the data that supports this, but I believe it would do.
I have not experienced a workplace that does this.
I haven't seen the science on this, but I'd imagine so, if the take-up is good.
wider benefits of this: these employers may have better workplace strategies for employee wellbeing, and take a stronger interest in their employees. therefore employees may like their jobs more and feel more appreciated by their employers and work harder?!

Its the sensible thing to do!
<b>Rest of UK</b>
More evidence needed
Our organisation is very pro being active, we are all motivated to do our work and practise what we preach
i don't have the evidence to agree with that but personally for me it would.
'Enable' seems key here. Promotion (e.g. screensavers) feel like they'd do nothing. Providing shared office bikes, mandating non-car travel for business trips etc. feel like they would work, because they 'Enable'.
I would think this is true
Only if employees are empowered by the opportunities to be active. activity. Or they can choose how and when they opt in.
see previous responses
This shows they care about their staff wellbeing!

### Appendix 17

To what extent do you agree with the statement: "Workplaces that promote and enable physical activity and reductions in sedentary behaviour improve job satisfaction" If you would like to, or feel you need to, then please elaborate on your response in the open text box provided below.

<b>East Midlands</b>
No evidence but I would like to think that this is the case
At face to face meetings if there is a physical element majority of staff enjoy it.
I am not sure that there would be an increase in satisfaction with the JOB, but I do think it increases satisfaction with the EMPLOYER in terms of support and care for employees.
To some people if they don't want to be physically active they may see this as a negative, but hopefully for most it isn't.
<b>West Midlands</b>
Workplaces that do this usually have a good culture of support
Mental wellbeing
Motivators for job satisfaction are multi-faceted
Well-being schemes I feel can enable employees to feel that the company cares and has their interests
i feel given the time to have some physical activity at work would improve my job satisfaction
Look after your staff and they will look after you and your business
I think even if I was not involved, it would show the employer cared and this would make me feel more valued, with improved job satisfaction.
wider benefits of this: these employers may have better workplace strategies for employee wellbeing, and take a stronger interest in their employees. therefore employees may like their jobs more and feel more appreciated by their employers and work harder?!
Happy me = happy employer
<b>Rest of UK</b>
Physical activity improves mental health, this will have an impact on other aspects of life, such as stress relief, ability to manage challenging situations, resilience etc
shows employers considering the wider needs of their employees.
I feel much better about work having exercised.
Would agree but not seen in action
For those who like to be active yes, for those who feel this is forced upon them then perhaps not? Also, if the interventions are generic, they may not be appropriate for all staff, and so may inadvertently ostracise people. Some may also see it as a HR box ticking exercise and so will not engage
It would for me.

see previous responses

Again, they care about wellbeing!

### Appendix 18

To what extent do you agree with the statement: “Workplaces that promote and enable physical activity and reductions in sedentary behaviour improve staff retention” If you would like to, or feel you need to, then please elaborate on your response in the open text box provided below.

<b>East Midlands</b>
Is staff retention always a good thing ??
Impartial
I believe that this is both direct by creating better wellbeing but also indirect by creating more community feel.
<b>West Midlands</b>
Workplaces that do this usually have a good culture of support
It depends on what other programmes and support there is in place. If only a workplace physical (in)activity intervention, certainly not.
Workplace satisfaction is more down to salary and perks and a congenial environment
People leave work places because of other people. Its unlikely in a toxic work environment that people will stay because physical activity is on offer
adds to all around employers commitment to look after their staff and value them
i feel given the time to have some physical activity at work would improve job retention as staff would be happier to have the choice
Is the staff retention problem around health concerns? If the work force is older and they have co-morbidities then yes that may be a factor. It is more likely that the nice perks are not enough to keep a person employed if they are unhappy or better prospects come along or other life changes cause them to leave
As I mentioned in the last question. This is a win win.
Company culture, pay, and the workplace environment more likely to improve staff retention than the workplace promoting PA
If the activity improves mental wellbeing and job satisfaction them employees would likely stay.
As above. I would imagine this would depend on a lot of other factors.
wider benefits of this: these employers may have better workplace strategies for employee wellbeing, and take a stronger interest in their employees. therefore employees may like their jobs more and feel more appreciated by their employers and work harder?!
I think physical activity makes people happier and if a company promotes it and let's people do physical activity during duty hours it makes for a more happy workplace.
Use the culture model again
<b>Rest of UK</b>
Too many other variables - giving a free gym membership won't improve retention if other conditions are poor.
I think retention is more likely linked to feeling valued in the work you do, social connection at work, and feeling supported - which physical activity may come into, but only a minor part I would say.
see previous responses
Physically Active cultures, are more Socially Active Cultures and this builds better team dynamics and understanding - thus, a more vibrant organisation to work for.

### Appendix 19

To what extent do you agree with the statement: “Being physically active and / or participating in sport can lead to job opportunities that can increase personal income” If you would like to, or feel you need to, then please elaborate on your response in the open text box provided below.

<b>East Midlands</b>
I don't know of anyone where this has happened unless your an athlete
Those involved in sport/physical activity often have extremely good communication and social skills but this can also be the case with those who have a strong background in music and the performing arts
I think there is more to a job that being physically active. Depending on the role. It is good to show interests outside of work but this can come in many forms.
Sport related job opportunities are often an outcome of significant participation but this is a minority. The community side of participation increases networks which in turn increases job awareness and opportunity.
physical and mental health is improved by being physically active and playing sport and this connects with social and employability skills. Broadening your social networks through sport surely leads to wider job opportunities and greater chance of increased income
Coaching in addition to main job.
I think these questions are subjective
<b>West Midlands</b>
Depends what job it was
Showing you're team player, may impress the boss.
Bouldering knowledge has lead to a few of my friends becoming instructors
Providing the sports don't take up too much time
Active people generally look healthier and less likely to be off sick, compared with sporty people whilst looking healthy are more prone to injury, so little positive benefit from sport.
Being regularly physically active promotes self discipline which is viewed favourably by employers.
This is about networking - participating in physical activity is one example of networking
Learning transferable skills and networking
i have not had any experience of this
Promote a team ethos which is important in most workplaces. Encourages competitiveness to achieve the best results and strive for progression. Social aspect of sport also provides networking opportunities.
Lots of social capital created and opportunities across different careers open up through people supporting others in sports clubs
If you're partaking in a sport that has a time cost as well as social costs and the actual activity costs. If someone is getting ahead in this way then that is nepotism and utterly corrupt. Only sportspeople should be getting a increase in this way.
Not necessarily as they can impact on your work, due to injury, tiredness or days of playing if professional
Opportunity to meet more people which could lead to opportunities
Depends on the person and the job.
Not sure what the link would be.
Participating in sports might lead to job opportunities, but for the most part networking is more common with white collar jobs than with blue collar jobs.
Team ethics and connections
<b>Rest of UK</b>
Being part of a team, you meet and can network with people
Acquisition of social skills, team working and networking opportunities.
My brother is a professional athlete; hence, sport participation is his primary income
Probably, if you have more social bonds through this.
Helped me in interviews when answering questions
Depending on your field of work maybe. This feels like a question about a boys club where they discuss business during a game of squash (like in the movies). If you work in athletic clothing though, then yes this could because you could be a walking advert for your brand at a sports club and others may buy from you.

Better networking

I have already referenced this... in short, when you know colleagues through "other experiences" you work better together as a team in work.

## Appendix 20

To what extent do you agree with the statement: "Being physically active and / or participating in sport can reduce work related stress and / or negative mood states" If you would like to, or feel you need to, then please elaborate on your response in the open text box provided below.

<b>East Midlands</b>
Sport /physical activity allows the participant to get immersed in something removed from their job which has to be a good thing
Definitely! Sport can be stressful in itself at a higher level but the ability to "switch off" from work to the degree of concentration needed to participate in sport is regularly a game changer for later concentration.
<b>West Midlands</b>
Exercise is so important for mental health
The big stress raisers are financial worries and relationship problems, which spill over into the workplace- being physically active has less impact
Having a work life balance that enables physical activity helps overcome negative mood states and therefore should improve wellbeing and motivation and then productivity at work.
I think part of the therapy that this offers besides increasing feel good hormones is the sense of belonging and alignment with other like minded people
gets out frustrations and tension - feel part of a team and a sense of belonging - makes you forget any other stresses as you concentrate on the game
i have noted this myself. When i was not physically active my mood could drop
Again this depends on the person and the job
Of course! One of the big reasons why I do it :D
<b>Rest of UK</b>
Allows time away from work and thinking about it which is very important.
sometimes it can, but it can also induce tiredness and have a bad effect. especially when done things like 9pm kick off times then can't sleep
I manage my stress with being active and leading a healthy lifestyle, it doesn't eliminate stress, but it helps me cope with it better.
I certainly feel physical activity/sport provides and escape from work stress and low mood.
I don't think that the competitive element has to be there for this.
Evidence is clear, but not everyone is paying attention to it!
Endorphins



**N.B.** The data presented in the following appendices on the slides is copied and pasted directly as the participant responses. Spelling, punctuation and grammatical errors are therefore likely and there have been no amendments by the research team to improve interpretation.

## Appendix 21

Slides to facilitate discussion on productivity.

**Productivity** is a measure of how well a society transforms work and other resources into products and services that improve people's lives. For the purposes of this focus group, when we refer to productivity, we are referring to how productive people are at work to deliver goods and services as well as perform their allocated work and job role.

- **Survey data**

- 85.6% (n=124) agreed or strongly agreed that 'being physically inactive for an extended period reduces productivity at work'
- 5.5% (n=8) neither agreed nor disagreed
- Role of sedentary commutes
- Use exercise to re-focus, reset and reenergise
- Can lose motivation/feel sluggish/under-energised/ low mood if don't do activity
- Depends on length of time/intensity of the activity as to its impact
- If have a lower workload, could do more physical activity
- Feel much better doing activity before I start my work (for body and mind)
- May vary at an individual level but at population level it does benefit
- Remote work can deplete mood and productivity despite physical activity done

## Productivity

- What do we think of these results?
- Do you agree / disagree?
- What is the impact of physical inactivity on productivity in the workplace?
- What is the consensus?

## Appendix 22

Slides to facilitate discussion on absenteeism.

**Absenteeism** is any failure to report for or remain at work as scheduled, regardless of the reason.

- **Survey data**
- 62.1% (n=90) agree or strongly agree that 'being physically inactive increases absenteeism'
- 20% (n=20) neither agreed nor disagreed
- 5.5% (n=8) didn't know
- Due to link with disease, can imagine it is the case
- Might prevent absenteeism in the short term (fight colds, less tired, etc)
- Physical activity does impact on wellbeing which has to impact absenteeism
- In the longer term rather than the short-to-medium term
- Myriad of other reasons at play rather than a leading to b per se
- Seen this in colleagues – least active are ill more and take more time off
- Absenteeism for appointments, operations and illnesses
- The way we work (remote) has a greater impact than physical inactivity
- Depends on the job
- Physical activity can help sustain 'hard work weeks'

## Absenteeism

- What do we think of these results?
- Do you agree / disagree?
- What is the impact of physical inactivity on absenteeism in the workplace?
- What is the consensus?

## Appendix 23

Slides to facilitate discussion on presenteeism.

**Presenteeism** is the act or culture of employees continuing to work, but not fully functioning or performing their duties, because of an illness, injury, exhaustion, or other condition.

- **Survey data**

- 63.4% (n=92) agree or strongly agree that 'being physically inactive increases presenteeism'
- 17.9% (n=26) neither agree nor disagree
- Think it's more complicated than just being inactive
- Cannot concentrate properly without good exercise routine
- Concept of presenteeism is shockingly ableist – and depends on occupation
- Negative impact on energy/mood/headaches
- Taking short breaks can make you feel more focused and present
- Depends on the person

## Presenteeism

- What do we think of these results?
- Do you agree / disagree?
- What is the impact of physical inactivity on presenteeism in the workplace?
- What is the consensus?

## Appendix 24

Slides to facilitate discussion on unemployment.

**Unemployment** refers to a situation where a person actively searches for employment but is unable to find work.

- **Survey data**

- 37.9% (n=55) agree or strongly agree that 'being physically inactive for an extended period increases the likelihood of being unemployed'
- 26.9% (n=39) neither agree nor disagree
- Too many other factors at play and personalities
- Working remotely/online now has changed things
- May be inactive due to illness or injury – neither have stopped them from working
- Depends on employment/occupation
- Not in every case but physical activity usually means people feel good about themselves
- May affect physical functional capacity but not skills per se

## Unemployment

- What do we think of these results?
- Do you agree / disagree?
- What is the impact of physical inactivity on unemployment?
- What is the consensus?

## Appendix 25

Slides to facilitate discussion on leaving the job market early.

**Leaving the job market early** refers to a situation where a person no longer works in an employed role because they chose to retire early or they are unable to work for health reasons.

- Survey data
- 64.2% (n=93) agreed or strongly agreed that 'being physically inactive increases the likelihood of leaving the job market early'
- 20.7% (n=30) neither agreed nor disagreed
- The more inactive you are, the more likely you will have health issues
- The impact of a wider set of health behaviors or issues than physical activity alone/Many other factors are relevant as well
- Skeptical that interventions to reduce physical inactivity will reduce the likelihood of leaving the job market early
- I think the greatest reason for leaving the job market is to provide care for someone because of the inaccessibility of affordable care in our society
- I would love to work. The mind is willing but body is not able
- Many factors are health related to "leaving the job market early" but being physically active your career long, will not be one of them - a serious injury whilst doing activity is the exception, but is an exceptional circumstances

## Leaving the job market early

- What do we think of these results?
- Do you agree / disagree?
- What is the impact of physical inactivity on leaving the job market early?
- What is the consensus?



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