Sheffield Hallam University | Sport Industry Research Centre

# THE SOCIAL VALUE OF GOLF IN THE UK

## FINAL REPORT

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This report has been prepared by the Sport Industry Research Centre (SIRC) at Sheffield Hallam University. The report has been commissioned by but does not necessarily represent the views of the R&A. The views expressed within this report represent those of the authors:

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**About The R&A**

Based in St Andrews, The R&A runs The Open, elite amateur events, international matches and rankings. Together The R&A and the USGA govern the sport of golf worldwide, operating in separate jurisdictions but sharing a commitment to a single code for the Rules of Golf, Rules of Amateur Status and Equipment Standards. The R&A governs worldwide, outside of the United States and Mexico, with the consent of 152 organisations from amateur and professional golf and on behalf of over 30 million golfers in 138 countries. The R&A is committed to working for golf and supports the growth of the sport internationally and the development and management of sustainable golf facilities. For more information about The R&A visit www.RandA.org.

# TABLE OF CONTENTS

# LIST OF TABLES

# EXECUTIVE SUMMARY

## INTRODUCTION

The R&A grant aided the Sport Industry Research Centre (SIRC) at Sheffield Hallam University to conduct a study on the social value of community participation in golf, to measure and value the wider contribution of golf to the UK economy in 2019. The commissioning of this study, together with an updated Satellite Account, positions golf as a leading sport in impact evaluation in the UK.

The aim of this study is to evaluate the social value of golf in the UK. Specifically, the research objectives are to: (1) review and summarise current literature and evidence on the social value of golf; (2) estimate the monetary value of health, subjective wellbeing, social capital and any other relevant social outcomes associated with golf participation and volunteering; and (3) derive a bespoke social value model for golf for the UK, the four Home Nations and the nine English Regions.

## METHODS

The study uses a scoping review method to identify, summarise and synthesise literature on golf participation and social outcomes, published primarily from 2016 onwards. The review includes material from both published academic papers and non-academic 'grey literature', such as research from government sources and consultancy reports.

The estimates for the social value of golf in the UK are for the year 2019 (pre-Covid) and utilise the most recent iteration of the Social Return on Investment (SROI) model for all sport and physical activity in England (Sport England, 2020) as a starting point. The valuation includes 16 social outcomes linked to participation and volunteering that can be divided into four broad themes: physical and mental health; mental wellbeing; individual development; and social and community development. The social value estimates for golf are underpinned by a series of steps and assumptions and the figures are presented at UK level, at Home Nation level and at regional level for England.

## KEY FINDINGS

### *Literature review*

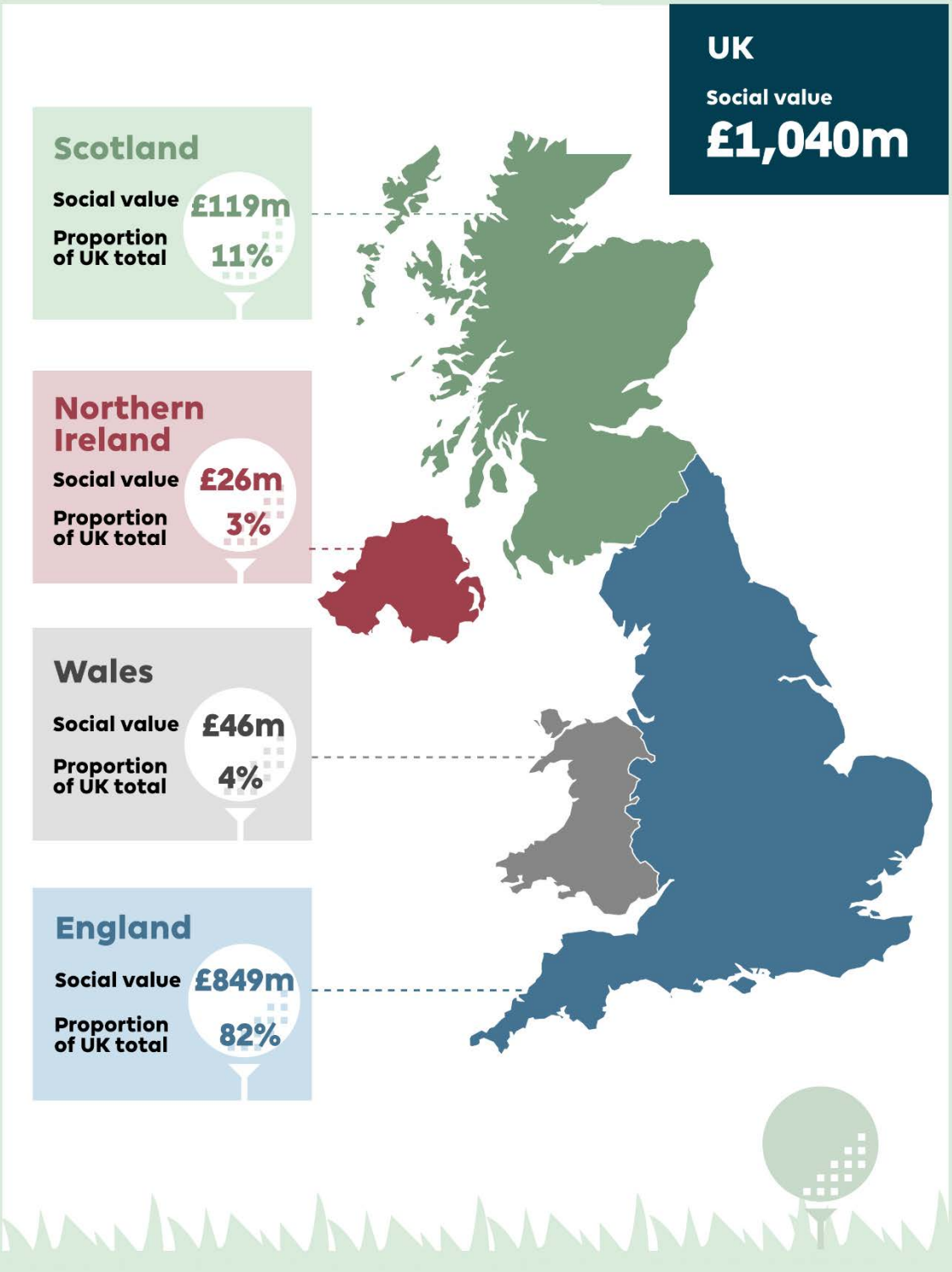
The evidence review revealed that golf contributes to a wide range of social outcomes, including physical health, mental wellbeing, individual development, and other social and community outcomes, albeit with varying volumes and weights of evidence in each area. Our review findings are consistent with and update those of previous golf reviews including SIRC (2016a) and Murray et al. (2016; 2018).

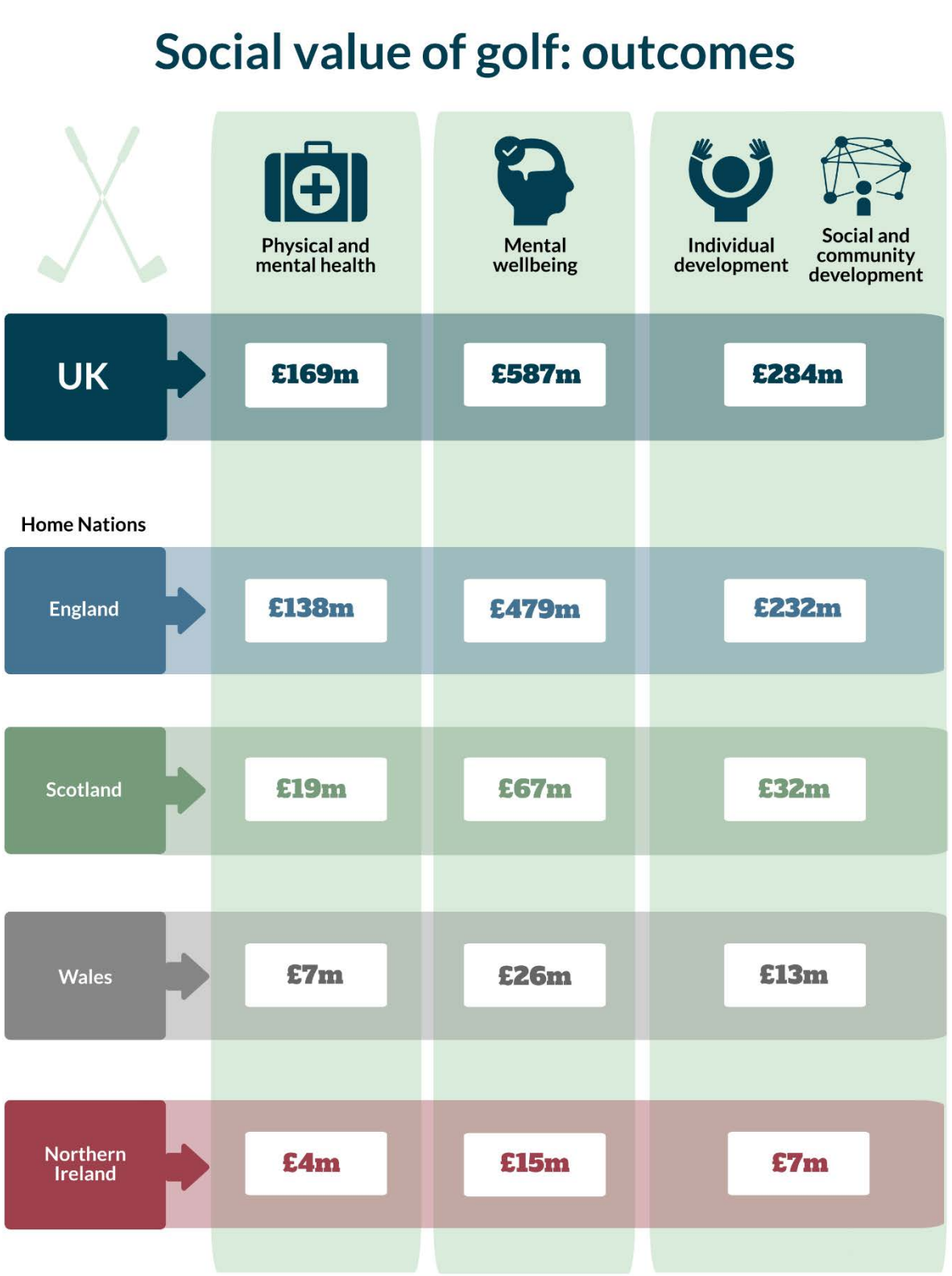

***Social value of golf in the UK***

The overall social value generated by golf in the UK in 2019 was estimated at £1.04bn, as summarised in the following infographic. Around 82% of the aggregate UK figure is generated in England, 11% in Scotland, 4% in Wales and 3% in Northern Ireland. The principal driver of golf's social value is improved subjective wellbeing through participation and volunteering.

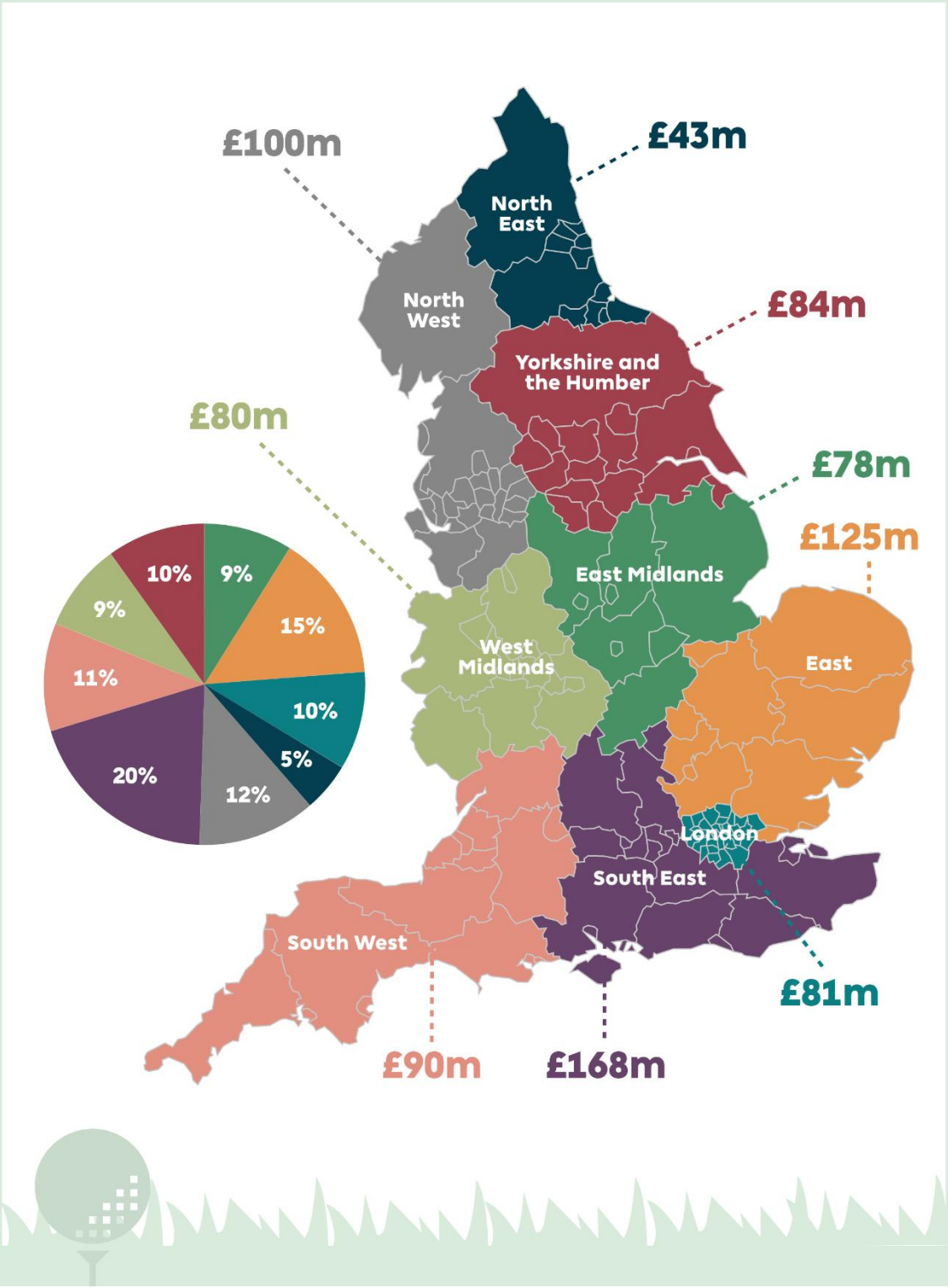
Approximately 35% of golf's social value in England occurs in the South East (£168m) and East (£125m) regions. For England as a whole, golf accounts for 1.1% of the social value generated by all sport and physical activity. This statistic varies from a low of 0.8% in London to a high of 1.5% in the East of England.

# Social value of golf: UK




Social value of golf: outcomes
Physical and mental health
Mental wellbeing
Individual development
Social and community development
UK
£169m
£587m
£284m
Home Nations
England
£138m
£479m
£232m
Scotland
£19m
£67m
£32m
Wales
£7m
£26m
£13m
Northern Ireland
£4m
£15m
£7m

# Social value of golf: English regions



**CONCLUSIONS**

Overall, this research demonstrates that golf creates substantial value for society in the UK, the Home Nations and across the English Regions. Golf is the first sport in the UK to produce a social value model and a Satellite Account, confirming the R&A as a leading International Sports Federation in terms of economic and social impact measurement. We recommend that The R&A utilises this information in two ways. First, to articulate the wider societal impacts of golf and second, to advocate for investment in golf from a wide range of stakeholders. Finally, we suggest that the golf social value model is updated regularly with golf participation data, and fully revised periodically to account for any modifications to national models relating to the social value of sport.

# 1. INTRODUCTION

## 1.1 The project

In recent years, there has been a growth in interest from sports organisations in the UK to quantify the value of specific sports. The wider policy context of this shift is linked to a desire to evidence the contribution of community sport and physical activity to the five outcomes identified in *Sporting Future*, the UK Government strategy for sport in England (HM Government, 2015). Against this backdrop, The R&A grant aided the Sport Industry Research Centre (SIRC) at Sheffield Hallam University to conduct a study on the social value of community participation in golf. The commissioning of this study, together with an updated Satellite Account in 2019 positions golf as a leading sport in impact evaluation. Golf is the first sport in the UK to commission a bespoke Satellite Account and social value study using robust and rigorous methods of appraisal, compliant with measurement approaches used at national level.

## 1.2 Context

Historically, developed nations such as the UK have used traditional economic indicators such as consumer spending, Gross Value Added (GVA) and employment to measure the value of sport to society. In 2016, the Sport Industry Research Centre (SIRC) at Sheffield Hallam University produced a Satellite Account for Golf for the year 2014. The study assessed the economic importance of golf in terms of consumer spending, Gross Value Added (GVA), employment, and turnover.

The Satellite Account for Golf in the UK is an important framework for measuring the economic value, or 'market effects' of golf. However, there is growing evidence that sport and physical activity also generate significant wider social impacts or 'non-market effects', including health benefits, improved subjective wellbeing and enhanced social capital, which are not captured in the Satellite Account. A recent study for Sport England on the economic and social value of community sport and physical activity, found that over 80% of the national value was generated by social rather than economic outcomes (Sport England, 2020).

In 2016, the England Golf Partnership commissioned SIRC to conduct a Social Return on Investment (SROI) study for golf in England (SIRC, 2016b). The research found that golf creates considerable social value to society. A substantial proportion of this sum was generated through improved subjective wellbeing amongst golf participants and volunteers. A significant amount of social value was also generated from improved health outcomes. Similarly, in 2021, Golf NSW produced a report on the community impact of golf in New South Wales, Australia (Golf NSW, 2021). It identified a wide range of impacts beyond the economic contribution, including health, social, environmental and charitable contributions. It is clear

from these reports that economic value only captures part of the overall contribution of golf to society and hence the need for this study.

### 1.3 Research aim and objectives

The aim of this research is to evaluate the social value of golf in the UK. Specifically, the research objectives are to:

- Review and summarise current literature and evidence on the social value of golf;
- Estimate the monetary value of health, subjective wellbeing, social capital and any other relevant social outcomes associated with golf participation and volunteering; and,
- Derive a bespoke social value model for golf for the UK, the four Home Nations and the nine English Regions.

### 1.4 Report structure

The report is structured as follows.

- Section 2 outlines the methods and approach of the literature review and the golf social value model;
- Section 3 presents a summary of the literature review;
- Section 4 presents the social value models for the UK, the four Home Nations and the nine English Regions; and,
- Section 5 presents some concluding comments and recommendations.

# 2 APPROACH AND METHOD

To assess the social value of golf in the UK, we first undertook a desk-based literature review to summarise current evidence on the social impact of golf. We then used the most up to date version of the national Social Return on Investment (SROI) model (Sport England, 2020), together with golf-specific participation and volunteering data, to derive a social value model for golf.

## 2.1 Literature review

The aim of the literature review was to identify and consolidate existing evidence which demonstrates a link between engagement with golf (including participation and volunteering) and social outcomes.

We carried out a scoping review to identify the evidence available, summarise the findings and provide an informed conclusion on completion. Our methodology is consistent with that of a research study commissioned by the World Health Foundation (Murray et al., 2016), which examines the relationship between golf and physical health and mental wellbeing; and our previous review for the England Golf Partnership in 2016 (SIRC, 2016a).

We have included in scope literature focused on the impact of golf on physical health, mental wellbeing, individual development, and social and community development. We include material from both published academic papers and non-academic 'grey literature', such as research from government sources and consultancy reports. The evidence includes studies based on research using both quantitative and qualitative methods. The primary geographical focus of the review was the United Kingdom; however, our review does include some examples of international literature where relevant, and for the purposes of comparison.

Using a range of academic databases, we searched for relevant material from 2016 onwards meeting our agreed search terms. In addition, we conducted targeted searches for unpublished grey literature by scanning a range of different websites including those of UK government, and a variety of golf and sports organisations. All literature found from these searches was then screened by the reading of either abstracts, executive summaries or introductions, and those papers deemed relevant to the review were downloaded and read in full. The review summary is presented in section 3, and the full review in Appendix A.

## 2.2 Social value model

The estimates for the social value of golf in the UK presented in this report are for the year 2019 and utilise the most recent iteration of the national Social Return on Investment (SROI) model for all sport and physical activity in England (Sport England, 2020) as a starting point. This approach was taken to ensure that the outcomes included in the national SROI all-sport model were also captured within the sport-specific social value model for golf. The national

SROI all-sport model has been endorsed by Sport England and includes 16 social outcomes linked to participation and volunteering that can be divided into four broad themes: **physical and mental health**; **mental wellbeing**; **individual development**; and **social and community development**. The full list of outcomes is presented below, and the detailed assumptions are shown in Appendix B.

*Physical and mental health (10 outcomes)*

- Reduced risk of CHD / stroke (participants 16+)
- Reduced risk of breast cancer (female participants 16+)
- Reduced risk of colon cancer (participants 16+)
- Reduced risk of Type 2 diabetes (participants 16+)
- Reduced risk of dementia (participants 16+)
- Reduced risk of depression (participants 16+)
- Reduced risk of hip fracture (participants 65+)
- Reduced risk of back pain (participants 16+)
- Improved good health (participants 16+)
- Increased risk of injury (participants 16+)

*Mental wellbeing (1 outcome)*

- Improved subjective wellbeing (life satisfaction) (participants & volunteers 16+)

*Individual development (2 outcomes)*

- Improved educational attainment (participants aged 11-18)
- Enhanced human capital (average additional salary for graduates)

*Social and community development (3 outcomes)*

- Reduced criminal incidences about young males (aged 10-24)
- Improved social capital to communities (social networks, trust and reciprocity)
- Non-market value for sports organisations utilising volunteers

The steps involved in deriving the social value estimates for golf are outlined below.

1. We recalibrated the national SROI model for England using 2019 data from the Active Lives Survey and adjusted the monetary values for inflation. By undertaking this exercise, we were able to establish a new pre-Covid baseline for the social value of all sport and physical activity in England against which golf's contribution could be measured.

2. From the Active Lives Survey, for adults in England who met the recommended physical activity threshold[1], we calculated the share of minutes that were related to playing golf for the relevant population groups (e.g., men, women, and older adults). For example, if someone achieves 150 minutes of sport and physical activity per week, of which 120 minutes is from playing golf, then golf's share of total activity duration for that individual would be 80%.

3. For each outcome included in the national SROI model, golf's proportion of total activity was multiplied by the corresponding social value for all sport and physical activity in England.[2]

4. Based on steps 1-3, we calculated the social value of golf in **England**. This figure was fine-tuned by incorporating specific evidence relating to the subjective wellbeing value of individual sports like golf (Fujiwara, 2014).

5. We repeated steps 1-4 to derive bespoke estimates for the **nine English Regions**.

6. Due to the absence of comparable physical activity duration data for the other UK Home Nations, a different approach was used to estimate the social value of golf at UK level. The golf social value estimates for England were used to model the corresponding estimates for the **UK** as a whole by using a consistent definition of golf participation across England, Wales, Scotland and Northern Ireland (at least once a month)[3].

[1] For the physical and mental health theme, two physical activity thresholds are used in the national SROI model for England: 'active' i.e. those doing 150+ minutes per week of moderate intensity activity (or 75 minutes of vigorous activity); and, 'fairly active' i.e. those doing 30-149 minutes per week of moderate intensity activity (or 15-74 minutes of vigorous intensity activity). For the other themes, only the 150+ minutes per week activity threshold is used for participation-related outcomes. For volunteering the activity threshold is at least once in the last month.

[2] For any health-related outcomes, the social value calculation includes both 'active' and 'fairly active' adults and the participation definition includes active travel. For all non-health related participation outcomes, the social value calculation relates to 'active' adults only and the participation definition excludes active travel. For volunteering-related outcomes, social value is calculated assuming the same share as participation (excluding active travel) in the absence of golf-specific volunteering data.

[3] A 'value per golf participant' for each outcome was calculated for England which was then applied to the other UK Home Nations.

# 3. LITERATURE REVIEW SUMMARY

The literature review summary in this section and the full review presented in Appendix A synthesise golf-related evidence published from 2016 onwards. The review also incorporates the findings of seminal golf studies which predate this year, providing a context for more recent evidence to be discussed.

The findings of the review are grouped into four key outcome areas; physical health (including both positive and negative health outcomes); mental wellbeing; individual development; and social and community development. For each outcome area we identify what the literature states about the impact of golf, any gaps in knowledge, and we provide some assessment of the overall quality of the literature.

The literature review clearly demonstrates that evidence exists to show that golf contributes to all four of the outcome areas that were analysed: physical health, mental wellbeing, individual development and social and community development. However, reflecting the results of previous reviews in this area (SIRC, 2016a; Murray et al., 2016; 2018), the impact of golf is demonstrated with varying volumes and weights of evidence in each area.

## 3.1 Physical health

The outcome area providing the **greatest amount of evidence for golf is physical health**, and the evidence available in this area is generally stronger and more robust than in the other areas, which are based on smaller numbers of papers and a relatively large number of case studies or small-scale qualitative research projects.

In 2018 the *International Consensus Statement on Golf and Health* was published in the British Journal of Sports Medicine (Murray et al., 2018). Based on a systematic literature review on the health outcomes of golf, as well as three rounds of surveys to ascertain the views of golf industry experts, the statement concludes that golf can provide moderate intensity physical activity and is associated with physical health benefits. In addition, it recommends that policymakers and governing bodies should support the promotion of golf because participation brings wide ranging benefits for physical health and mental wellbeing. Indeed, our review reflects this finding and shows that there is evidence that golf may have an impact upon health-related quality of life; may lower the risk of death amongst older adults; can have a potential preventative role against several chronic diseases; and has benefits such as improved cognition and balance amongst older adults.

There is an acknowledgement in the literature that golf may have **some negative health impacts, including risk of injury**. However, the volume of literature being published focused on such negative impacts has declined in recent years. This may be due to increased awareness of the physical health benefits of golf and a consensus that the positive impacts of golf outweigh any potential risks. Golf was also positioned as an ideal sport for people to

return to physical activity post the Covid-19 pandemic due to it being an outdoor sport with the ability to follow social distancing guidelines (Robinson et al., 2021).

### 3.2 Mental wellbeing

Relative to the volume of papers demonstrating the positive impact of golf on physical health, there are fewer papers describing mental wellbeing benefits. The evidence available is also mixed in quality. The review found several papers which describe golf as having an impact on mental wellbeing, but which are mostly anecdotal, based on perceptions, and do not actually measure the impact on mental health symptoms or conditions. The literature which does exist around golf and mental wellbeing falls into three categories:

Firstly, literature describing golf as being used as a measure to help **improve mood and to prevent certain mental health conditions**, mostly stress, depression or anxiety. These studies are mostly based on qualitative research examining individuals' perceptions and experiences of golf, and in particular, participants reported that golf gave them time away from other stresses in their lives.

Secondly, the review found some literature around the ability of **golf as a form of rehabilitation for people with pre-existing conditions**. There was some evidence of golf being used successfully to help improve the mental health of people suffering mental health problems or substance use, as well as for people with dementia including their carers.

Finally, there were two studies showing **a link between golf and life satisfaction**, which is often used as a measure of subjective wellbeing, including one study (Mirehie et al., 2021) that found a significantly stronger relationship between positive emotions and life satisfaction amongst golfers relative to snowboarders.

### 3.3 Individual development

Our previous review in this area (SIRC, 2016a) found a high number of papers around individual development. However, most of these related to the impact of self-efficacy on golf performance, with little literature specifically exploring the reverse relationship, i.e. self-efficacy as developed as an outcome of participation in golf. There were relatively few papers which examined individual development outcomes as a result of participation. This current search for literature also reflects the previous findings. We found just three papers since 2016 which relate to individual development.

Two of the three papers found relate to the **impacts of golf upon resilience in young people**, and the third relates to **self-efficacy developed through golf**. No papers were found, however, on the impact of golf on educational outcomes for young people, for example in the form of educational attainment, or on golf's impact on issues such as crime and anti-social behaviour, which consequently represent gaps in the existing literature.

### 3.4 Social and community development

The review shows that the evidence base for social and community development is limited. Also, whilst some of the papers refer to cross-sectional research with groups of participants, most papers relating to social and community impacts are based upon qualitative or case study research with relatively small numbers of participants. The evidence that is available in this area, however, demonstrates that **golf has the potential to contribute to the development of communities and friendships**, and is **associated with higher levels of social trust**. Our review identified a gap in the literature on golf volunteering, with just one paper in this area. Nevertheless, this paper demonstrates some evidence that **volunteering in golf may have important social and community development outcomes** and is bound with a sense of belonging and pride in the club (England Golf, 2021).

### 3.5 Demographic groups

The evidence of the impact of golf for some demographic groups is stronger than it is for others. The **literature predominantly focuses on men, older people aged 55 plus, and largely retired people**. As these are the groups that are more likely to play golf, it is not a surprise that there is a larger volume of research on them. In particular, the **evidence on physical health has a focus on the health benefits of golf for older people, particularly from walking**. In contrast, there is a lack of evidence relating to children and young people.

There is also a focus in the literature on golf club members, or on research with people taking part in a short-term golf intervention (usually people who were previously non-golfers). There is in contrast a lack of literature on 'social' or 'casual' golfers, i.e. those who might play regularly, but are not club members, or may not have a registered handicap. It may be that different 'types' of participant benefit from golf participation in different ways. For example, people who are not members of clubs may not receive such great social or community benefits as someone who is a member of a club and socialises in the clubhouse after a round. They will, however, still experience similar benefits in terms of physical health, for example.

### 3.6 Monetary value of social outcomes

There is a **lack of existing research which places a monetary value on the impact of golf**, with the exception of our previous work in this area, to calculate a Social Return on Investment for golf in England (SIRC, 2016b), plus studies in Australia (Australian Golf Industry Council, 2017; Golf NSW, 2021), although the Australian studies only place a monetary value on health and not on the other social outcomes.

# 4. THE SOCIAL VALUE OF GOLF

This section of the report presents the findings of the social value model for golf. The first part presents the findings for the UK. It discusses the physical and mental health value of golf and the cases of ill health prevented, followed by the value generated through mental wellbeing and the other social outcomes. The subsequent sections present the summary findings for the four UK Home Nations and the nine English Regions. A detailed table showing the social values generated across the UK and the Home Nations is presented in Appendix C.

## 4.1 The social value of golf in the UK

### 4.1.1 Physical and Mental Health

Participation in golf is estimated to have prevented some 49,000 cases of physical and mental health conditions in the UK in 2019, which corresponds to £175m in healthcare and wider cost savings. A breakdown of these estimates by type of condition is shown in Table 4.1.

**Table 4.1: Health cases prevented by golf in the UK and associated cost savings**

| Condition | Cases Prevented | Cost Savings (£) |
|---|---|---|
| Coronary heart disease and stroke | 2,675 | 19,367,286 |
| Type 2 diabetes | 15,261 | 62,820,727 |
| Breast cancer | 26 | 1,434,637 |
| Colon cancer | 48 | 2,594,726 |
| Dementia | 1,167 | 44,749,980 |
| Clinical Depression | 5,241 | 1,639,715 |
| MSK (Hip fractures) | 923 | 35,951,045 |
| MSK (Back pain) | 23,566 | 6,473,006 |
| **Overall** | **48,907** | **175,031,122** |

Playing golf also contributes to improved general health of participants leading to reduced GP visits and psychotherapy usage – these benefits were valued at £16.5m at UK level in 2019. Therefore, the cumulative value of the health benefits from golf participation in the UK in 2019 amounted to £191.5m (i.e., £175m plus £16.5m). After adjusting for the estimated annual costs attached to golf-related injuries (£22.5m), the net health benefits of golf in the UK in 2019 amounted to **£169m**.

### 4.1.2 Mental Wellbeing

Participation in individual sports like golf (and in sport and physical activity more generally) is known to improve the subjective wellbeing of participants. The evidence from our research indicates that the value of these wellbeing benefits attributable to golf participation in the UK in 2019 was £409m. Furthermore, golf's share of subjective wellbeing improvements related to voluntary work undertaken to support sport and physical activity in the UK is estimated at

£178m. The total value of the subjective wellbeing benefits generated by engagement with golf in the UK of **£587m** (i.e., £409m plus £178m) is considerably higher than the value attached to the sport's contribution to the physical and mental health of participants.

### 4.1.3 Other Outcomes

Golf's contribution to the individual development of participants and to broader community development in 2019 was estimated at **£284m**. The bulk of this figure is attributable to enhanced social capital linked to playing golf (£186.5m) and the replacement value of golf-related volunteering (£96m).

**Table 4.2: Social value of other outcomes in the UK in 2019**

| Outcome | UK (£) |
|---|---|
| Enhanced social capital | 186,522,650 |
| Non-market value of volunteers | 96,260,152 |
| Improved attainment / increased earnings | 915,878 |
| Crime reduction | 171,008 |
| **Overall** | **283,869,689** |

### 4.1.4 UK Summary

The overall social value generated by golf in the UK in 2019 was estimated at **£1.04bn**, as summarised in Table 4.3. The principal driver of this overall figure is mental wellbeing.

**Table 4.3: Social value of golf in the UK in 2019**

| Outcome | UK (£) |
|---|---|
| Physical and mental health | 168,985,297 |
| Mental wellbeing | 587,034,482 |
| Individual / community development | 283,869,689 |
| **Overall** | **1,039,889,467** |

## 4.2 Social value of golf in the Home Nations

Table 4.4 illustrates how the £1.04bn of social value created by golf at national level is distributed across the four UK Home Nations. Around 82% of the aggregate UK figure is generated in England, 11% in Scotland, 4% in Wales and 3% in Northern Ireland. This distribution is reflective of the relative populations of the UK Home Nations and the uptake of golf in each nation.

**Table 4.4: Social value of golf in the UK Home Nations**

| | Physical and mental health (£) | Mental wellbeing (£) | Individual / community development (£) | Overall (£) |
|---|---|---|---|---|
| England | 138,012,564 | 479,438,954 | 231,840,191 | **849,291,709** |
| Scotland | 19,273,763 | 66,954,721 | 32,377,001 | **118,605,485** |
| Wales | 7,461,815 | 25,921,441 | 12,534,718 | **45,917,973** |
| Northern Ireland | 4,237,156 | 14,719,366 | 7,117,779 | **26,074,301** |
| **UK Total** | **168,985,297** | **587,034,482** | **283,869,689** | **1,039,889,467** |

## 4.3 Social value of golf in the English Regions

Table 4.5 provides a more granular view of the social value of golf at regional level within England. Approximately 35% of golf's social value in England occurs in the South East (£168m) and East (£125m) regions. For England as a whole, golf accounts for **1.1%** of the social value generated by all sport and physical activity. This statistic varies from a low of 0.8% in London to a high of 1.5% in the East of England.

**Table 4.5: Social value of golf in the nine English Regions**

| Region | Social value (£) | Share of England (%) | Share of all sport & physical activity (%) |
|---|---|---|---|
| South East | 168,122,949 | 19.8 | 1.3 |
| East | 124,699,799 | 14.7 | 1.5 |
| North West | 100,478,113 | 11.8 | 1.0 |
| South West | 89,651,603 | 10.6 | 1.1 |
| Yorkshire and the Humber | 84,432,351 | 9.9 | 1.1 |
| London | 81,202,680 | 9.6 | 0.8 |
| West Midlands | 79,553,511 | 9.4 | 1.1 |
| East Midlands | 78,284,412 | 9.2 | 1.2 |
| North East | 42,866,291 | 5.0 | 1.2 |
| **England Total** | **849,291,709** | **100.0** | **1.1** |

# 5. CONCLUSIONS

This study is the first time a social value model for golf in the UK has been produced, which provides comparable data across the UK Home Nations and the English Regions. The methods used to derive the social value of golf are consistent with the national SROI model for sport and physical activity in England, which is recognised nationally and internationally as sector-leading for social impact measurement. The key findings are listed as bullet points below.

- The literature review clearly demonstrates evidence on the value of golf for all four of the outcome areas that were analysed: physical health, mental wellbeing, individual development, and social and community development.

- As found in previous literature reviews of golf, the strongest and most robust evidence is related to health outcomes. According to our calculations, participation in golf is estimated to have prevented some **49,000 cases** of physical and mental health conditions in the UK in 2019.

- Overall, the social value of golf in the UK in 2019 was **£1,04bn.**

- The largest proportion of golf social value in the UK was generated from mental wellbeing **(£587m).**

- Around **82%** of the aggregate UK value of golf is generated in England; 11% in Scotland; 4% in Wales and 3% in Northern Ireland.

- The geographical distribution of social value across the English Regions is not even, with approximately 35% occurring in the South East and East Regions.

- For England as a whole, golf accounts for **1.1%** of the social value generated by all sport and physical activity.

Overall, this report demonstrates that golf creates considerable health, wellbeing, and other benefits for society. Golf is the first sport in the UK for which there is a social value study and Satellite Account. We recommend that The R&A utilises the findings from both studies to articulate and showcase the wider societal benefits of golf, and to advocate for investment where relevant.

In terms of future research recommendations, we suggest the golf social value model is regularly refreshed with updated golf participation data. Moreover, periodically (i.e., every 5 years), we recommend the model is revised to incorporate any modifications to the national SROI model and new golf-specific evidence as it emerges.

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# APPENDIX A: LITERATURE REVIEW

## A.1.1 Aims and methods

The purpose of this literature review was to identify and consolidate existing evidence which demonstrates a link between engagement with golf (including participation and volunteering) and social outcomes. We have included in scope literature focused on the impact of golf on physical health, mental wellbeing, individual development, and social and community development, and we include material from both published papers and unpublished 'grey literature', such as research from government sources, consultancy papers and reports. The evidence includes studies based on research using both quantitative and qualitative methods. The primary geographical focus of the review was the United Kingdom, however our review does include some examples of international literature for the purposes of comparison.

This review builds on our previous knowledge of literature in this area, in particular including the findings of a review which we undertook on behalf of the England Golf Partnership in 2016 (Desk Study and Insight Brief: SIRC, 2016a), in which we identified the evidence available at the time to demonstrate golf's ability to address the five outcome areas for sport set out in the Government strategy *Sporting Future - A New Strategy for an Active Nation* (2015) (namely physical wellbeing, mental wellbeing, individual development, social and community development, and economic development). In addition, the work builds on other work that we were already aware of including the 2018 *International Consensus Statement on Golf and Health*, which was based on the work of Murray et al. (2016) who examined the relationship between golf and physical health and mental wellbeing through a scoping review.

This present review updates these previous studies by summarising their findings and including further relevant literature published since 2016. Using a range of academic databases, we searched for relevant material from 2016 onwards meeting a range of search terms, and in addition we conducted targeted searches for unpublished grey literature by scanning a range of different websites including those of UK government, and a variety of golf and sports organisations. All literature found from these searches was then screened by the reading of either abstracts, executive summaries or introductions, and those papers deemed relevant to the review were downloaded and read in full.

In the following sections we outline the findings of the review, which are grouped into four key outcome areas; physical health (including both positive and negative health outcomes); mental wellbeing; individual development; and social and community development. For each outcome area we identify what the literature demonstrates about the impact of golf, any gaps in knowledge, and we provide some assessment of the overall quality of the literature.

### A.1.2 Physical health

Our previous literature review around the impact of golf (SIRC, 2016a) showed that the largest volume of literature was concentrated on physical health outcomes, in comparison to the other outcome areas, and in addition, the evidence around the impact of golf on physical health was generally of a higher quality than that found in the other outcome areas, based on more rigorous and robust methodologies. This present search for more recent literature also reflects these findings – our searches found that the evidence available for the impact on physical health continues to be the highest in both volume and quality.

Of particular significance in this area, in 2018 the *International Consensus Statement on Golf and Health* was published in the British Journal of Sports Medicine (Murray et al., 2018). The Statement aims to help players, potential players, the golf industry, facilities and decision makers benefit from a better understanding of how to realise potential health benefits related to golf. The statement is based on research by Murray et al. (2016, 2018) which utilised a systematic literature review on the health outcomes of golf, as well as three rounds of surveys to ascertain the views of golf industry experts. The research showed a consensus for the health benefits of golf and describes that golf can provide moderate intensity physical activity and is associated with physical health benefits that include improved cardiovascular, respiratory and metabolic profiles, and improved wellness. The consensus statement described the ways in which individuals and populations can improve their health through playing golf, and how the golf industry / facilities and policymakers can increase opportunities to gain health benefits through golf and minimise any health risks associated with golf.

It appears that, in recent years, there has been further recognition of the health impacts of golf, and particularly since the Covid-19 pandemic. Robinson et al. (2021) point out that golf's contribution to physical and mental health benefits is becoming increasingly recognised. Through a narrative review, the authors showed evidence that golf can provide health-enhancing physical activity, and as golf is an outdoor sport, where social distancing is possible, and if rules are followed, the risk of Covid-19 transmission is likely to be low. The authors argue that policymakers and governing bodies should support the promotion of golf because participation brings wide ranging benefits for physical health and mental wellbeing. When effective risk reduction measures are used, the benefits of playing golf in most circumstances outweigh the risk of transmission of the virus. Thus, golf was positioned as the ideal sport for people to return to physical activity post the pandemic. Other recent evidence in this area can be grouped into three key areas, which are summarised in the following sections; general papers around the health benefits in general, particularly the impact on health-related quality of life; secondly, an impact on chronic diseases, and finally, the impact on older adults particularly in terms of cognition and balance. There are also, however, some papers around potential negative impacts of golf, which are included in a further section.

### Health-related Quality of Life

Some papers describe general health benefits of golf and the impact upon quality of life, in particular from being outdoors, getting fresh air, as well as the health benefits of walking around a golf course. The level of walking involved in participating in a round of golf (when participants walk the course and do not use golf buggies) was described in many of the papers as the aspect of playing which delivered particular health benefits. As found by Kobriger et al. (2006), a round of golf over 18 holes typically leads to around 11,000 steps, which meets the recommended physical activity indicator of 10,000 steps per day. Playing a round of golf is therefore assumed to deliver a health benefit in general physiological terms. There are also further benefits from carrying golf clubs or from pushing golf clubs on a wheeled trolley. Stenner et al. (2016, 2019a) conducted qualitative research with male and female golfers aged 55 plus in Australia, exploring reasons for playing and the perceived benefits of playing golf. In terms of physical health, older people saw golf as a sport which they could continue to participate in successfully as they grew older, as it was seen as less stressful on the body than many other sports. They described a number of health benefits of walking, but golf was described as a type of exercise that was more attractive than going walking, as it was more engaging and less boring, providing opportunity to exercise without it feeling like exercise. Whilst walking around the golf course, they were distracted by the playing of golf and socialising with their playing partners. They anticipated that by participating in golf regularly they would improve their cardiorespiratory health and fitness, due to walking up and down hills, and also golf was seen as having benefits for flexibility and strength as a result of use of the arms, legs and trunk when walking and swinging the golf club, particularly in the shoulders, elbows, hips, knees, and lower back. It should be noted that this research explored the anticipated benefits of participating in golf only and did not measure actual health impacts.

Following on from this previous research, Stenner et al. (2019b) conducted secondary analysis of data from the Australian National Nutrition and Physical Activity Survey to compare selected health outcomes between golfers (n=128) and non-golfers (n=4999). The results showed that golfers were older, more likely to be overweight/obese and more likely to have had high cholesterol or been diagnosed with ischaemic heart disease (IHD). Yet despite this, golfers were more physically active than non-golfers, with golfers on average performing 1500 steps per day more (21%) than non-golfers. Golfers were also more likely to report a higher health-related quality of life which may have been due to golfers being more physically active than non-golfers, because there was no longer a significant difference between the two groups after controlling for physical activity. The authors state, however, that while this points to possible associations between golf and health, as the data was cross-sectional, they cannot comment on causality and, because of the relatively low numbers of golfers in the study compared to non-golfers, they were unable to detect differences in a number of the outcomes of interest. They suggest that randomised controlled trials are required to test more adequately whether golf participation improves health.

### Chronic disease

The American Heart Association (2020) reports that playing golf at least once per month lowers the risk of death amongst older adults. Researchers analysed data from the Cardiovascular Health Study, a population-based observational study of risk factors for heart disease and stroke in adults 65 and older over a ten-year period. Participants had extensive annual clinical exams and clinic visits every six months for the 10-year period, and then once clinic visits ended, patients were contacted by phone to determine any occurrences of heart attack and stroke events. Out of almost 5,900 participants, 384 were identified as regular golfers (playing at least once per month). During follow-up, 8.1% of the golfers had suffered strokes and 9.8% of the golfers had heart attacks. When comparing death rates among golfers and non-golfers, researchers found a significantly lower rate of death among golfers (15.1%) compared to non-golfers (24.6%). It should be noted, however, that the researchers were unable to determine if golfing had a direct impact on lowering the risk of heart attack or stroke and it was reported that subsequent work was needed to identify what other health conditions may benefit from regularly playing golf, as well as whether other demographic factors including gender and race have any impact on the findings. They also did not specify whether the golfers walked or rode in a golf cart.

Community impact studies undertaken in Australia describe golf as having a potential preventative role against several chronic diseases, particularly for older adults (Australian Golf Industry Council, 2017; Golf NSW, 2021). The Australian Golf Industry Council (2017) commissioned research on a national level to explore the impact of golf on economic, social and health outcomes. The results of these impact studies on social outcomes and mental health outcomes will be discussed in subsequent sections of this report. In terms of physical health outcomes, the study shows that the community contribution to physical health which golf provides nationally in Australia in terms of dollars saved is an overall $126,623,707 per annum. According to the Australian Institute of Health and Welfare physical inactivity is the fourth highest risk of disease behind tobacco, obesity and alcohol use. 94% of the burden of disease resulting from physical inactivity is borne by people aged 15 years and above, especially those aged over 45 years of age – therefore physical activity in terms of golf participation plays a significant preventative role in the later stages of life. The health benefit derived from golf participation was calculated via the following methodology:

- Evidencing the negative effects of insufficient physical activity. The 2011 study by the Australian Institute of Health and Welfare attributed 5% of the burden of disease in Australia to physical inactivity. The specific diseases resulting are breast cancer, coronary heart disease, diabetes, bowel cancer and stroke.
- Identifying the total number of Disability-Adjusted Life Years (DALYs) lost due to diseases caused by physical inactivity, and then calculating the equivalent contribution from a per person perspective.

- Understanding the expected life duration based on current age and gender segments, as well as the average duration in years of golf participation.
- Calculating the Value of a Statistical Life Year (VSLY) based upon Department of Finance best practice guidelines. The VSLY used is $187,2407.
- Modelling the actual number of golf participants (across age and gender segments).
- The basic formula for calculating physical health benefits is therefore: Physical Health = No. of Participants x DALYs prevented x VSLY x (1-year of golf Participation/Expected Life Remaining).

The analysis also shows that frequency of golfing is associated with the contribution to health outcomes, with those that are golf members and play regularly (on average 67 times per year) having a greater impact than social players who play on average eight times per year.

More recently, the regional analysis showing the impact of golf for New South Wales, Australia (Golf NSW, 2021), used the same calculation as described above, and calculated that the contribution to physical health which golf provides in New South Wales in terms of dollars saved is an overall $45,694,691.

### Physical health outcomes for older adults

In particular, the evidence around the physical health benefits of golf is dominated by research into the impacts for older adults. Much of the literature describes golf as an accessible sport for people of all ages, but the health benefits of participation in older age are particularly described as significant in the majority of papers, indicating that, being a less strenuous activity relative to some other sports, golf is to be seen as an accessible and appropriate option for older people.

Two studies focused on the impact of golf on cognition in older adults. A trial by Kanwar et al. (2021) examined the impacts of a 10-week golf programme for non-golfer older adults. The participants were 14 healthy male and female non-golfers, 60–80 years, who could walk independently, swing a golf club, and received medical clearance. The programme focused on improving physical and cognitive function, as opposed to golf performance. Participants' walking speeds were measured throughout the course of the programme and the estimated increase in physical activity was 25.5%. Cognitive changes were measured using the California Verbal Learning Test II, and NIH Cognitive Toolbox, and showed estimated increases in CVLT II composite score (11.2%) and immediate recall (12.6%). In an exit survey, participants reported improved physical function, mental and social wellbeing, and all planned to continue playing golf. A study by Shimada et al. (2018) aimed to determine the cognitive benefits of a golf training programme in older adults, through a randomised controlled trial conducted between August 2016 and June 2017 at a general golf course. Participants included 106 Japanese adults aged 65 and older. Participants were randomly assigned to either a 24-week (90–120min sessions per week) golf training group or a health education control group. Post-intervention changes in Mini-mental State Examination (MMSE) and National Centre for

Geriatrics and Gerontology-Functional Assessment Tool scores were regarded as primary outcome measures. Secondary outcome measures included changes in physical performance and Geriatric Depression Scale (GDS) scores. Analysis using linear mixed models revealed that the golf training group exhibited significantly greater improvements in immediate logical memory (p=0.033), delayed logical memory (p=0.009) and composite logical memory (p=0.013) scores than the control group. However, no significant changes in MMSE, word memory, Trail Making Test or Symbol Digital Substitution Test scores were observed. In addition, no significant changes in grip strength, walking speed or GDS were observed. The authors concluded that golf-based exercise interventions may improve logical memory in older adults, but there are no significant changes in other cognitive tests. They recommend that further follow-up investigations are required to determine whether the observed effects are associated with delayed onset of mild cognitive impairment or Alzheimer's disease in older adults.

There is also some evidence of golf having an impact on balance in older adults, with the potential to reduce the risk of falls. Du Bois et al. (2021) investigated the effects of a golf training program on the physical performance and balance of older military Veterans. Twelve older military Veterans participated in a 12-week golf training programme. The programme consisted of complementary exercises that prepared participants for the demands of golf, a dynamic warm-up, golf skill training, and progressive golf play. As the study progressed, complementary exercise time decreased while golf play increased, allowing participants to play nine holes of golf by the final session. Thirty-second chair stand, 8-foot-up-and-go test, rapid step test, and hip abductor muscle performance were assessed at the start and end of the programme. Improvements were made in all areas except for the hip abductor muscle performance which showed no change. It was concluded that the golf training programme improved physical performance and dynamic balance, and the multiple components of the golf training programme reflect the characteristics of an effective multimodal exercise programme for older adults.

A further two studies also examined the impact of golf on balance in older adults, specifically older adults with Parkinson's disease. Older age is associated with an increased risk of falling, and older adults are more likely to be diagnosed with Parkinson's disease. Parkinson's is a neurodegenerative disorder with four Cardinal motor symptoms: rigidity, bradykinesia, postural instability, and tremor. Thus, people with Parkinson's disease have an even greater risk of falling than non-disorder age-matched peers. Cash et al. (2018) analysed a 6-week golf and exercise programme which was developed specifically for individuals with Parkinson's, designed by both physical therapists and golf professionals, consisting of golf instruction and task-specific exercises. Improvements were noted in seven of the eight participants for golf performance (driving distance and club head speed) and quality of life (PD Questionnaire-39) outcome measures. In post-programme questionnaires, participants reported feeling more balanced, stronger, improved in their mental abilities, and more comfortable exercising on their own. Participants also reported feeling more relaxed after completion of the programme.

However, it should be noted that these outcomes were reported anecdotally and participants were not tested for these outcomes – the authors suggest that the measures examining balance, strength, exercise self-efficacy, cognitive changes, and anxiety would be appropriate for future research, and in addition extending the length of the programme and recruiting a larger sample size to examine the clinical and statistical significance of changes would be valuable.

In addition, Bliss and Church (2021) completed a literature review to determine the relationship between golf, Parkinson's disease, and the risk of falls. They describe golf as providing a low-impact all-around workout promoting a range of motion, activation of muscles in the upper and lower body, flexibility, and balance. Swinging a golf club offers a unique combination of high amplitude axial rotation, strengthening postural musculature, coordination, and stabilisation, demonstrating the potential to impact Parkinson's symptoms positively. They conclude that regularly playing golf can lower the risk for falls in older adults with Parkinson's and demonstrates the potential to improve their quality of life.

A focus in the literature on older people aged 55 plus and largely retired people reflects that these are the groups that are more likely to play golf, so it is not a surprise that there is a greater amount of existing research with these groups. In particular, the evidence on physical health shows a focus on the health benefits of golf for older people, particularly from walking. In contrast there is a lack of evidence on the impacts for children and young people, for example, and also Monforte et al. (2021) point out that golf is not widely promoted to and for disabled people, however through a literature review the authors found a small number of empirical studies, research reports and other forms of grey literature which suggest that golf has a variety of health benefits for disabled people but of which further evidence is needed.

### Negative physical health impacts

This present search for literature largely reflects our previous work in this area (SIRC, 2016a) in terms of both the volume of evidence available for each of the outcome areas, and the quality of the evidence available. However, one noticeable difference from our previous literature search is that, in the last review, we found that relative to the papers which described the positive physical health outcomes of participation in golf, there was a much larger number of papers relating to more negative health-related outcomes, with a focus on the risks of injury whilst playing golf. These related to either the occurrence of musculoskeletal injuries in golfers, including lower back injuries, and also specifically to injuries sustained by individuals whilst playing golf but which were caused by the equipment itself including being struck with golf clubs or golf balls either by accident or through misuse of equipment. In our previous review we pointed out, however, that whilst the volume of literature was greater for the negative health outcomes, this did not necessarily mean that the negative outcomes outweighed any positive outcomes, but rather that there had been a

greater academic interest in this area. In addition, the evidence available on negative outcomes was mostly based on case studies with very small sample sizes, discussing isolated cases of injury, for example.

In this present search, however, we have found a much greater volume of papers relating to positive health outcomes, and just three papers with a focus on more negative health impacts. Of these, we found just one paper relating to golf-related injuries, (and which actually shows that whilst there is a risk of injury, the health benefits of golf outweigh the injury risks). The reasons for the relative lack of evidence on negative health outcomes over recent years is unclear, although we could speculate that perhaps there is now more recognition of the benefits of golf, and also that the benefits of golf may outweigh the risks. High profile studies such as Murray et al., (2016, 2018) and the *International Consensus Statement on Golf and Health* (2018), may have helped to promote the potential health benefits of golf, as well as, more recently, the acknowledgement that golf is a relatively safe sport in which to participate as we emerge from the Covid-19 pandemic (Robinson et al., 2021).

Murray et al. (2016) through their systematic review, described that injuries and accidents related to golf comprised the largest group of studies identified by the review and that the incidence of golfing injury is moderate, with back injuries the most frequent injury reported. Accidental head injuries are rare, but when they do occur, they can have serious consequences. However, they point out that golf has a moderate risk activity for injury compared to other sports. In addition, the review found evidence highlighting positive associations between golf and physical health, and mental wellness, and evidence to suggest that golf may contribute to reduced mortality. The existing evidence supports efforts to promote golf as a sport with overall health benefits, and risk reduction strategies are warranted.

We also found one paper on the risks of prolonged sun exposure when playing golf. Matthews et al. (2018) conducted a literature review on the relationship between golf and skin cancer. A total of 11 studies were included in the review and the authors report that golf is associated with relatively more ultraviolet radiation (UVR) exposure than other outdoor activities such as fishing, tennis, swimming, cricket, gardening, 'sun-worshipping' and sailing. Calculated relative risk of non-melanoma skin cancer, based on cumulative UV exposure, is higher in golfers than non-golfers. Mid-morning tee-times or playing golf between 11am-3pm were associated with highest UVR exposures. Golfers can be exposed to potentially harmful levels of UVR during play in winter at some latitudes. Vertex (scalp), shoulders, back, back of neck and posterior arms were exposed to more UVR than the front of the body during play and common golf attire is of limited value in protecting the neck. The authors found that, whilst the studies found in the review indicate that golfers are exposed to potentially harmful levels of UVR during play, the true morbidity / mortality associated with this exposure is not known. They suggest that golf is associated with longevity and both physical and mental health

benefits and playing golf should be encouraged in all age groups, although golfers, the golf industry and policy makers should act to minimise the effects of UVR exposure.

A further paper by Courtney et al. (2021) describes the increased likelihood of golfers to drink alcohol, in turn leading to potential alcohol related illnesses. They describe alcohol as being integrated into the culture of golf in the United States. A cross-sectional study with a sample of golfers in the US examined self-reported alcohol use, golfing behaviour and motives. Most (84%) golfers consumed alcohol, averaging 7.91 servings per week. Golfers with stronger social motives were 60% more likely to consume alcohol. Golfers' alcohol use may be higher than the general adult population in the U.S. and contributes 775 extra kilocalories per week, a surplus that may offset physical activity related energy expenditure and cancer-protective effects. The authors call for alcohol use interventions targeting golfers to facilitate weight loss and reduce cancer risk.

### A.1.3 Mental wellbeing

In this section we refer specifically to mental wellbeing evidence including both 'mental health' as being about certain indications and symptoms that can affect people in the long-term and develop into mental health conditions, and 'subjective wellbeing' as relating to individual's thoughts, feelings, and satisfaction with life. Relative to the volume of papers demonstrating the positive impact of golf on physical health, there are fewer papers describing mental wellbeing benefits. The evidence available is also mixed in quality. The review found several papers which describe golf as having an impact on mental wellbeing, but which are anecdotal, based on perceptions, and do not actually measure the impact on mental health symptoms or conditions. Indeed, the review on the health impacts of golf conducted by Murray et al., as mentioned previously, had similar findings, with the authors stating that the weight of the evidence around mental health and illness was low and that *'physical activity has an overall positive impact on wellness and mental ill health, but robust, controlled studies with objective measures are required in relation to golf'* (2016: 7). In the years since the publication of Murray et al.'s work, it appears that there continues to be a lack of robust research into the relationship between golf and mental wellbeing impacts.

The literature which does exist around golf and mental wellbeing falls into three categories. Firstly, literature describing golf as being used as a measure to help improve mood and to prevent certain mental health conditions, mostly stress, depression or anxiety; secondly, literature around golf being used successfully as a form of rehabilitation for people with pre-existing conditions; and finally, evidence based on measures of life satisfaction, which is a recognised measure of wellbeing used in many wellbeing and wellness surveys.

#### Golf as a preventative measure

In terms of the first category, several studies were found which show golf as enhancing mood and having the resulting impact on preventing stress, anxiety and depression. These studies

are mostly based on qualitative research examining individuals' perceptions and experiences of golf. For example, Stenner et al.'s (2016) small-scale exploratory study of older people who regularly play golf found that participants reported that golf gave them time away from other stresses in their lives and had a positive impact upon mood. Similarly, another small-scale qualitative study conducted by Hisaki (2021) interviewed seven participants around their experiences of golf who described that playing golf had a number of benefits, which included decompression from the stressors of their workplace or personal lives.

The two Australian studies exploring the community impact of golf (Australian Golf Industry Council, 2017; Golf NSW, 2021), as described earlier in relation to physical health, also estimated the contribution of golf to mental health outcomes. The studies show that the community contribution to mental health which golf provides nationally in Australia in terms of dollars saved is an overall $5,043,704 per annum (Australian Golf Industry Council, 2017), and regionally for New South Wales this was $2,356,913 per annum (Golf NSW, 2021). This relates to the preventative effects of golf on anxiety and depression. Calculating the mental health benefits of golf was similar to the method used to calculate physical health, with some adjustments, as follows:

- Evidencing the preventative effects of physical activity on anxiety and depression. Based upon the evidence used by the Australian Government Department of Health to support the Physical Activity and Sedentary Behaviour Guidelines for Adults (18-64 years), the study used the conservative estimated range that physical activity has a 25% preventative impact on anxiety and depression.
- Identifying the total number of Disability-Adjusted Life Years (DALYs) lost due to anxiety and depression, and then calculating the equivalent contribution from a per person (by age and gender) perspective.
- The basic formula for calculating mental health benefits is therefore: Mental Health = No. of Participants x (DALYs from anxiety and depression/preventative effect of physical activity) x VSLY x (1-year of golf Participation / Expected Life Remaining).

As with physical health, the analysis described that the mental health impacts of golf for individuals increased with frequency of participation.

### Golf as a form of rehabilitation

There was some evidence of golf being used to help improve the mental health of people who are suffering mental health and other conditions. Grov and Dahl (2019) undertook a qualitative research study using interviews with 12 participants in a Golf as Therapy group. These were individuals with mental health problems or substance use. The study examined the perceived impact of golf activities on participants' physical and mental health, social contact, and daily activities, as well as their overall evaluation of involvement in the Golf as Therapy group. The participants described a positive influence on health and social wellbeing in addition to positive changes in daily activities. The main theme that arose from the data

was ‘Shaping a New Direction in Life’, elaborated by the categories of improved physical fitness, creation of a social meeting place, improved focus and concentration, practical help and support, and reduced mental symptom burden. Hill et al. (2021) undertook an analysis of a six-week golf programme aimed at people with dementia and their carers. The research identified five central themes: emotion, respite, losing the ‘dementia’ label, friendship / camaraderie, and improving relationships, and it was concluded that golf has a role in enhancing the psychological and social wellbeing of people with early stages of dementia and their carers.

### Life satisfaction

Life satisfaction is believed to be a factor in the more general construct of subjective wellbeing. Our literature search found two studies which employed a measure of life satisfaction in order to make conclusions around the impact of golf. Firstly, collaborative research by England Golf, Mytime Active and the ukactive Research Institute in 2016 (reported in both the England Golf report *The impact of golf participation on health and* wellbeing, 2017, and Sorbie et al., 2021), used a survey to compare the physical activity levels and personal wellbeing of golfers with the wider English population. The survey was undertaken with a sample of golfers participating at 12 local authority golf courses in England, and the results of the Office of National Statistics personal wellbeing life satisfaction question ‘Overall, how satisfied are you with your life nowadays?’ were compared with those of the wider population taken from the 2016 Sport England Active Lives Survey. Results demonstrated that golfers reported significantly different physical activity levels in comparison to the population of England, but despite golfers having relatively lower levels of physical activity, golf participation is associated with psychological wellbeing. Golfers had a significantly higher ($t(57286) = 18$, $p < .001$, $d = .17$) mean score ($M = 7.63$, $SD$ 1.87) than the population of England ($M = 7.04$, $SD = 3.56$). Of golfers who completed the personal wellbeing question, 78% scored 7 or higher, and 18% of golfers scored their personal wellbeing as the maximum response of 10. The authors suggest that the wellbeing of golfers is enhanced by the fact that they play with friends and create and nurture social relations, as well as that golf is played outdoors in a natural green environment, which they suggest further promotes personal wellness. However, it should be noted that the research is a cross-sectional comparison meaning that causality cannot be established due to possible confounders which have not been accounted for, as well as the potential for reverse causality, i.e. those with high levels of life satisfaction may be more likely to participate in golf.

Finally, Mirehie et al. (2021) investigated the relationship between wellbeing generated through participation in active sport tourism and overall life satisfaction. Three different types of active sport tourism (golf, snowboarding, and long-distance running) were compared to explore whether the type of experience impacts the relationship between active sport tourism wellbeing and life satisfaction. Data was collected via an online self-administered questionnaire. Active Sport Tourism Positive Emotions (ASTPE) were examined through three

items that measured joy, content, and positivity on an eleven-point scale, for example, 'To what extent does taking [golf / snowboarding / running] trips make you feel joyful?' Life satisfaction was measured by using the Satisfaction with Life Scale developed by Diener, Emmons, Larsen, and Griffin (1985) (as reported in Diener, 2000). The results showed that the snowboarders rated the positive emotions acquired from active sport tourism significantly lower than golfers and runners. Furthermore, hierarchical multiple regression showed a significantly stronger relationship between positive emotions and life satisfaction for golfers and runners compared to snowboarders.

### A.1.4 Individual development

Many sport programmes and interventions are based on the assumption that sport is an effective medium for personal development, that participation in sport leads to the development of a range of personal and social skills, including, for example, team work, self-discipline, resilience, communication skills, time management, perceived self-efficacy, and self-esteem. Our previous review in this area found a high number of papers around individual development, however most of these related to the impact of self-efficacy on golf performance, with little literature specifically exploring the reverse relationship, i.e. self-efficacy as developed as an outcome of participation in golf. There were relatively few papers which examined individual development outcomes as a result of participation. This current search for literature also reflects this finding. We found three papers which relate to individual development. Two of these three papers relate to the impacts upon resilience in young people, and the third relates to self-efficacy as being developed through golf.

#### Resilience

Schulze (2019) examined the impact of golf on resilience amongst adolescents. Resilience was described as a factor in determining healthy development, including the development of positive emotions and self-esteem in young people. During a period of three months, a control group (n = 25) played soccer and an intervention group (n = 25) were trained in golf. Data measuring resilience was collected at the outset of the intervention and towards the end, using a shortened version of the resilience scale which measures resilience through 11 items as a personality factor, including psychological resistance against long-term stressors and health-endangering ('risky') living conditions (developed by Schumacher et al., 2004). An intergroup comparison revealed significant differences in the development of resilience between the control group and the intervention group, with the intervention group (those playing golf) showing greater improvement in resilience. Therefore, it was argued that golf training has a positive influence on children's resilience development, although the author suggested that follow-up studies should examine the long-term effects of these results to provide a justification for including golf in school sports.

In addition, The Golf Foundation and Yeast Ltd collaborated on a research project to design and deliver a golf-based 10-week life skills programme with the aim to develop both mental

toughness and resilience of junior golfers (Golf Foundation, 2018). The programme was delivered to groups of young people aged between 11 and 16 years at their golf clubs and academies, and incorporated golf training with life skills coaching and reflection. The participants completed a psychometric assessment of mental toughness which measured four key components; control, commitment, challenge and confidence, at the start and end of the programme and the results were then analysed to establish whether there was an impact upon the mental toughness of the participants. Average mental toughness increased in the participants by 20% during the programme. All other scales and subscales of mental toughness also increased but due to the sample size of the study only commitment, control, life control confidence and confidence in abilities showed increases large enough to be significant. The report concludes that the impact shown by the programme is indicative that the Golf Foundation should work on a plan to roll this programme out to the wider golf community in the UK. It should be pointed out, however, that it is unclear which specific aspects of the programme developed mental toughness – i.e. whether it was the participation in golf itself, or whether it was the skills and reflection based coaching, that had the most impact.

### Self-efficacy

Self-efficacy has previously been defined as *'…a person's belief in his / her capacity to organise and execute the required skills to attain a specific desired outcome'* (Bandura, 1997). According to Bandura, the greater an individual's level of self-efficacy, the more likely he or she is to choose a harder task, expend a greater level of effort, and persist longer while performing. Self-efficacy has frequently been regarded as a marker of individual development. The collaborative research by England Golf, Mytime Active and the ukactive Research Institute described in the previous section (England Golf, 2017; Sorbie et al., 2021), used a measure of self-efficacy for playing golf and for participating in physical activity in general using the questions 'How sure are you that you will exercise regularly during the next year?' and 'How sure are you that you will play golf regularly during the next year?'. Golfers scored both their self-efficacy for playing golf, and for general exercise, on a scale of 0 to 10. The vast majority of scores for both measures were positive with over 70% scoring both the likelihood of playing golf and the likelihood of exercising generally with a positive score (7 or above). Negative scores for these questions were extremely rare, with only 4% rating them at 3 or below. These results are used as evidence of the positive impact of golf on individual development, however it should be pointed out that this relates to the likelihood of golfers to persist in both golf and physical activity, and whilst this is positive, the research does not examine self-efficacy as being developed through golf in relation to wider aspects of people's lives (the development of confidence in one's ability at work or in education, for example), nor does the study examine any other measures of individual development.

### A.1.5 Social and community development

In this section we refer to the potential of golf to develop social impacts such as feelings of community and belonging, as well as social capital and social trust. Our previous review (SIRC, 2016a) showed a fairly low number of papers in this area, and those papers that were available were generally low in quality in terms of sample size and rigour of methods. This current search reflects the findings of our previous review and shows that the evidence base for social and community development is still fairly weak. Whilst some of the papers refer to cross-sectional research with groups of participants, the majority of papers relating to social and community impacts are based upon qualitative or case study research with relatively small numbers of participants.

#### Community and friendships

The Australian Golf Industry (2017) community impact study, reported in earlier sections of this literature review, used a range of methods to make an assessment of the social impacts of golf in Australia, including a literature review of sport's social impact, in-depth interviews with golf industry stakeholders, a survey with 1,243 individuals from the Australian golf community, development of case studies, and secondary data analysis from the Australian Bureau of Statistics (ABS), AusPlay and Organisation for Economic Co-Operation and Development (OECD). The results showed many examples of social and community development including that many older golfers note that the bulk of their friendship group belong to their golf club, and golf clubs and courses are often the venue for many social events, thus providing a social hub for the local community. Increasingly, clubs that provide cafes are becoming meeting places, not only for golfers, but many local community members. Many clubs host birthday parties, weddings, corporate functions, other sports functions; and golf industry expertise is now being shared with the local community. For example, some ground staff maintain other local sporting venues. In addition, the secondary data analysis using the ABS factors to measure social capital, showed that on average Australian golfers scores for social capital are eight percentage points higher than Australian sports participants, and 16 percentage points higher than non-sport participants.

Other studies demonstrating the development of communities and friendships includes the work of Stenner et al. (2016; 2019b) which shows that, for older adults, social factors are particularly significant in their reasons for playing golf. Stenner et al.'s survey (2019b) showed the most important reasons for participation were fun, a pleasant playing environment, and competition, with reasons related to health being relatively less important. When examining gender differences in the results, female participants rated fun, a pleasant playing environment, and a feeling that participation made them part of a community as more important reasons for participating than males. Similarly, Hystad and Bergly (2021), through interviews with participants in Norwegian Golf as Therapy golf training sessions aimed at patients in mental health care, found that participants highlighted the social interaction that

occurred at the golf course as the most valuable and motivating part of their enjoyment of golf. Finally, Hill et al. (2021), in their study with participants in a 6-week golf programme aimed at older adults with Dementia, also found friendship / camaraderie and improving relationships to be key themes emerging from participation, and this was associated with the development of overall feelings of wellbeing.

### Social trust

Social trust is regarded as an important marker of social and community development, as trust in others is deemed as the foundation of relationships between individuals and groups. As a result it is often used as a measure of social capital. The survey used in the research by England Golf, Mytime Active and the ukactive Research Institute in 2016 (England Golf, 2017; Sorbie et al., 2021) measured social trust by asking participants 'Generally speaking, would you say that people can be trusted or that you need to be very careful in dealing with people?' This question was scored on an eleven-point Likert scale ranging from '0- Definitely cannot be trusted' to '10- Definitely can be trusted'. The results were benchmarked against the results of the 2016 European Social Survey (ESS 2016). The average score for golfers was 6.56. This is over one point higher than the UK average which is 5.38. It is stated within the ONS literature that a score of 7 or more is considered high. For golfers, 54% of responses fell into this category, compared to 36% for the UK. This suggests that golfers have a higher level of social trust than the general UK population. However, as mentioned previously in relation to data uncovered by this study regarding life satisfaction, causality has not been fully established and there is also the potential for reverse causality here, whereby people with high levels of social trust are more likely to play golf in the first place. The authors also suggest that further research should explore different aspects of social trust as well as other potential social benefits.

### Volunteering

Our previous review of the outcomes of golf showed some evidence that volunteering in golf (for example through working as a volunteer at golf events in the local community / at the local club), had an impact on feelings of self-worth through giving something back, doing something for the community, and gaining feelings of belonging through being part of a group of volunteers, and developing friendships. This present search found just one study referring to volunteering, a report based on PhD research commissioned by England Golf, *'Encouraging participation in golf clubs: a research report on volunteering'* (England Golf, 2021) which explores the experiences of volunteers in golf clubs, including how members became volunteers and what helped sustain their involvement. The study was based on a programme of qualitative research including observations and interviews with golf club volunteers. The research shows that golf clubs are essentially social places in which everyday social interactions shape members' and volunteers' experiences. The research found that there is a common pathway to becoming a golf club volunteer, which involves a journey from feeling uncertain as a new member, through becoming an established member, and culminating in

active participation as a volunteer. Some members make this journey more easily than others, with the formation of social relationships being vital to this process. The research showed that golf club volunteering is bound up with a sense of belonging, involvement and pride in the club. Volunteers like to 'give back' to the club because they have enjoyed membership and the friendships they have formed, and the golf club is a significant part of their lives. The report makes a number of recommendations for the ways in which golf clubs could encourage volunteering, including ways to become more inclusive through encouraging all members to get involved.

### A.1.6 Monetary valuation of social outcomes

Whilst this review shows a range of evidence to suggest that golf does have a positive impact upon physical health, mental wellbeing, individual development, and social and community development, in most of the studies found by this review, there is no monetary value of golf provided for these outcome areas. There were just three studies that explored the monetary value of social outcomes from golf participation.

The Australian Golf Industry Council (2017), commissioned research to explore the impact of golf on economic, social and health outcomes in Australia, and this study attempts to place a monetary value on golf for economic and health (physical health and mental health) outcomes. In terms of physical health outcomes, the study states that the community contribution to physical health which golf provides nationally in Australia in terms of dollars saved is an overall $126,623,707 per annum, based on a calculation of the contribution of golf to the prevention of diseases including breast cancer, coronary heart disease, diabetes, bowel cancer and stroke. The basic formula for calculating physical health benefits was: Physical Health = No. of Participants x DALYs prevented x VSLY x (1-year of golf Participation/Expected Life Remaining). The contribution to mental health in terms of the prevention of anxiety and depression was calculated at an overall $5,043,704 per annum, through the formula: Mental Health = No. of Participants x (DALYs from anxiety and depression/preventative effect of physical activity) x VSLY x (1-year of golf Participation / Expected Life Remaining). The analysis also describes that golf members provide a greater contribution than social players, based on a higher frequency of participation, with those that are golf members and play regularly (on average 67 times per year) having a greater impact than social players who play on average eight times per year. The project also incorporated primary research with golf stakeholders and participants, including an online survey with 1,243 individuals from within the golf community, and depth interviews with 18 golf industry stakeholders. More recently, Golf New South Wales (2021) commissioned research to examine the community impact of golf on a regional level for New South Wales, Australia, which, using a similar methodology to calculate the monetary impact, found that the impact of golf in terms of physical health benefits was $45,694,691 per annum, and for mental health benefits was $2,356,913 per annum. It should be noted that these studies based in Australia only valued health outcomes and, whilst they

do describe other social outcomes from golf, they do not put a monetary value upon the other social outcomes.

SIRC (2016b) carried out a Social Return on Investment study of golf participation in England for the England Golf Partnership. The study, which valued improved health, reduced crime, improved educational attainment, improved subjective wellbeing and improved social capital in the form of volunteering, found that the social value of golf in England in 2015/16 was £1.8bn. The study revealed that for every £1 invested in golf participation, a return of £1.17 was generated. The study noted that the SROI for golf was lower than the SROI for all sport in England, most likely due to the higher investment costs of playing golf. The study reported the gross impact of golf participation rather than the net impact, or market share of golf (i.e. it did not adjust the social value of golf to take into account of the fact that some golf participants also do other sports activities). Nevertheless, it remains the only study of golf that has attempted to measure the social value of golf more holistically, and beyond health outcomes.

### A.1.6 Summary

This literature review quite clearly demonstrates that evidence exists to show that golf contributes to all four of the outcome areas that were analysed; physical health, mental wellbeing, individual development and social and community development. However, reflecting the results of previous reviews in this area (SIRC, 2016a; Murray et al., 2016; 2018), the impact of golf is demonstrated with varying volumes and weights of evidence in each area. In particular there is a lack of research which places a monetary value on the impact of golf, with the exception of our previous work in this area in England (SIRC, 2016b), plus studies in Australia (Australian Golf Industry Council, 2017; Golf New South Wales, 2021), although the Australian studies only place a monetary value on health and not on the other social outcomes.

The outcome area providing the greatest amount of evidence for golf is physical health, and the evidence available in this area can generally be considered to be stronger and more robust than that in the other areas, which are based on smaller numbers of papers and a relatively large number of case studies or small-scale qualitative research projects. The consensus statement (Murray et al., 2018) on golf describes that golf can provide moderate intensity physical activity and is associated with physical health benefits, and that policymakers and governing bodies should support the promotion of golf because participation brings wide ranging benefits for physical health and mental wellbeing. Our review has shown evidence that golf may lower the risk of death amongst older adults, can have a potential preventative role against several chronic diseases, and in particular has benefits in terms of improved cognition and balance for older adults. There is an acknowledgement in the literature that golf may have some negative health impacts, including risk of injury, for example, however the volume of literature being published focused on such negative impacts has declined in

recent years, which may be due to a consensus that the positive impacts of golf outweigh any potential risks.

The literature around golf and mental wellbeing falls into three categories. Firstly, literature describing golf as being used as a measure to help improve mood and to prevent certain mental health conditions, mostly stress, depression or anxiety; secondly, literature around golf being used successfully as a form of rehabilitation for people with pre-existing conditions; and finally, evidence based on measures of life satisfaction, which is often used as a measure of subjective wellbeing.

Whilst the volume of literature on golf's impact upon individual development is particularly lacking in comparison to the other outcome areas, there is some evidence that golf has a positive influence on the development of resilience in young people, through measures of mental toughness. No papers were found, however, on the impact of golf on educational outcomes for young people, for example in the form of educational attainment, or the impact on aspects such as crime or anti-social behaviour, so these areas represent gaps in the existing literature. Finally, the literature on social and community development shows that golf can contribute to the development of communities and friendships, and is associated with higher levels of social trust. Our review identified a gap in the literature on golf volunteering, with just one paper in this area. Nevertheless, this paper demonstrates some evidence that volunteering in golf may have important social and community development outcomes and is bound with a sense of belonging and pride in the club.

The evidence of the impact of golf for some demographic groups is stronger than it is for others. The literature predominantly focuses on men, older people aged 55 plus, and largely retired people. As these are the groups that are more likely to play golf, it is not a surprise that there is a greater amount of existing research with these groups. In particular, the evidence on physical health has a focus on the health benefits of golf for older people, particularly from walking. In contrast, there is a lack of evidence focused on children and young people. There is also a focus in the literature either on golf club members, or on research with people taking part in a short-term golf intervention (usually people who were previously non-golfers). There is in contrast a lack of literature on 'social' or 'casual' golfers, i.e. those who might play regularly, but are not club members, or may not have a registered handicap. It may be that different 'types' of participant benefit from golf participation in different ways. For example, people who are not members of clubs may not receive such great social or community benefits as someone who is a member of a club and socialises in the clubhouse after a round. They will, however, still experience similar benefits in terms of physical health, for example.

## APPENDIX B: KEY ASSUMPTIONS: NATIONAL SROI MODEL FOR ENGLAND

| Theme | Outcome | Relationship/assumption |
|---|---|---|
| **Physical and mental health** | Coronary heart disease (CHD) and stroke | Participation in sport and physical activity at moderate intensity in adults for 150+ mins reduces risk of CHD and stroke in adults by **35%.** |
| | Type 2 diabetes | Participation in sport and physical activity at moderate intensity in adults for 150+ mins reduces risk of Type 2 diabetes by **40%.** |
| | Breast cancer | Participation in sport and physical activity at moderate intensity in adults for 150+ mins reduces risk of breast cancer in active women by **20%.** |
| | Colon cancer | Participation in sport and physical activity at moderate intensity in adults for 150+ mins reduces risk of developing colon cancer by **20%.** |
| | Dementia | Participation in sport and physical activity at moderate intensity in adults for 150+ mins reduces risk of reduces risk of developing dementia by **30%.** |
| | Clinical depression | Participation in sport and physical activity at moderate intensity in adults for 150+ mins reduces risk of clinical depression by **30%.** |
| | Back pain | Participation in sport and physical activity at moderate intensity in adults for 150+ mins reduces risk of back pain by **25%.** |
| | Hip fractures | Participation in sport and physical activity at moderate intensity in adults (65+) for 150+ mins reduces risk of hip fracture by **52%.** |
| | All outcomes | There is a linear dose-response relationship between fairly active participation (30-149 minutes) in sport and physical activity, and a reduced risk of developing the outcomes identified above. |
| | Good health | Sport participants are **14.1%** more likely to (self) report good health than non-participant which results in a) reduced GP visits and b) reduced psychotherapy service usage. |
| | Sports Injury | Participation in sport increases the risk of getting a sports-related injury. |
| **Mental wellbeing** | Subjective wellbeing | Sport participation is found to be associated with improved subjective wellbeing.<br>Volunteering in sport is found to be associated with improved subjective wellbeing and greater life satisfaction. |
| **Individual Development** | Educational attainment | Sport participation leads to a **1% increase** in educational attainments (aged 11-18). |
| | Enhanced human capital | Graduates who participate in sport at university earn an average of **5%** more per year than their non-sporting counterparts. |
| **Social and Community Development** | Criminal incidences | Sport participation leads to a **1% reduction** in criminal incidents for males aged 10-24 years. |
| | Social capital | Sport participation is associated with enhanced social capital through **10%** higher social networks, trust and reciprocity. |
| | Non-market value for sports organisations utilising volunteers | Volunteers create non-market benefits to the organisations they give their time to.<br>Volunteer time is worth at least the equivalent value of average hourly earnings. |

Source: Sport England (2020)

# APPENDIX C: SOCIAL VALUE OF GOLF: UK SUMMARY

| | England | | Scotland | | Wales | | Northern Ireland | | UK Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| **PHYSICAL AND MENTAL HEALTH** | Cases prevented | Value | Cases prevented | Value | Cases prevented | Value | Cases prevented | Value | Cases prevented | Value |
| Coronary heart disease and stroke | 2,185 | £ 15,817,522 | 305 | £ 2,208,952 | 118 | £ 855,193 | 67 | £ 485,617 | 2,675 | £ 19,367,286 |
| Type 2 diabetes | 12,464 | £ 51,306,533 | 1,741 | £ 7,165,072 | 674 | £ 2,773,949 | 383 | £ 1,575,174 | 15,261 | £ 62,820,727 |
| Breast cancer | 21 | £ 1,171,687 | 3 | £ 163,629 | 1 | £ 63,349 | 1 | £ 35,972 | 26 | £ 1,434,637 |
| Colon cancer | 39 | £ 2,119,147 | 5 | £ 295,944 | 2 | £ 114,574 | 1 | £ 65,060 | 48 | £ 2,594,726 |
| Dementia | 953 | £ 36,547,910 | 133 | £ 5,103,997 | 52 | £ 1,976,007 | 29 | £ 1,122,066 | 1,167 | £ 44,749,980 |
| Clinical Depression | 4,280 | £ 1,339,177 | 598 | £ 187,019 | 231 | £ 72,404 | 131 | £ 41,114 | 5,241 | £ 1,639,715 |
| MSK (Hip fractures) | 754 | £ 29,361,702 | 105 | £ 4,100,427 | 41 | £ 1,587,476 | 23 | £ 901,440 | 923 | £ 35,951,045 |
| MSK (Back pain) | 19,247 | £ 5,286,591 | 2,688 | £ 738,284 | 1,041 | £ 285,826 | 591 | £ 162,305 | 23,566 | £ 6,473,006 |
| Good health (GP visits) | | £ 5,427,168 | | £ 757,916 | | £ 293,426 | | £ 166,621 | | £ 6,645,131 |
| Good health (Psychotherapy usage) | | £ 8,043,415 | | £ 1,123,281 | | £ 434,877 | | £ 246,943 | | £ 9,848,515 |
| Sub-total | 39,943 | £ 156,420,854 | 5,578 | £ 21,844,522 | 2,160 | £ 8,457,081 | 1,226 | £ 4,802,313 | 48,907 | £ 191,524,769 |
| Sports injuries | | £ 18,408,290 | | £ 2,570,759 | | £ 995,266 | | £ 565,157 | | £ 22,539,472 |
| Total | | £ 138,012,564 | | £ 19,273,763 | | £ 7,461,815 | | £ 4,237,156 | | £ 168,985,297 |
| | | | | | | | | | | |
| **MENTAL WELLBEING** | | | | | | | | | | |
| Improved life satisfaction (participants) | | £ 334,367,235 | | £ 46,695,131 | | £ 18,077,965 | | £ 10,265,486 | | £ 409,405,817 |
| Improved life satisfaction (volunteers) | | £ 145,071,719 | | £ 20,259,590 | | £ 7,843,476 | | £ 4,453,880 | | £ 177,628,666 |
| Total | | £ 479,438,954 | | £ 66,954,721 | | £ 25,921,441 | | £ 14,719,366 | | £ 587,034,482 |
| | | | | | | | | | | |
| **INDIVIDUAL DEVELOPMENT** | | | | | | | | | | |
| Improved attainment | | £ 10,475 | | £ 1,463 | | £ 566 | | £ 322 | | £ 12,826 |
| Increased earnings | | £ 737,535 | | £ 102,998 | | £ 39,876 | | £ 22,643 | | £ 903,052 |
| Total | | £ 748,010 | | £ 104,461 | | £ 40,442 | | £ 22,965 | | £ 915,878 |
| | | | | | | | | | | |
| **SOCIAL AND COMMUNITY DEVELOPMENT** | | | | | | | | | | |
| Crime reduction | | £ 139,665 | | £ 19,505 | | £ 7,551 | | £ 4,288 | | £ 171,008 |
| Non-market value for organisations utilising sports volunteers | | £ 78,616,960 | | £ 10,979,034 | | £ 4,250,520 | | £ 2,413,637 | | £ 96,260,152 |
| Enhanced social capital (participants) | | £ 152,335,556 | | £ 21,274,001 | | £ 8,236,204 | | £ 4,676,889 | | £ 186,522,650 |
| Total | | £ 231,092,181 | | £ 32,272,539 | | £ 12,494,276 | | £ 7,094,814 | | £ 282,953,810 |
| | | | | | | | | | | |
| **OVERALL** | | **£ 849,291,709** | | **£ 118,605,485** | | **£ 45,917,973** | | **£ 26,074,301** | | **£ 1,039,889,467** |