europe active
MORE PEOPLE | MORE ACTIVE | MORE OFTEN

THiNKactive
EuropeActive's Research Centre

An independent assessment of COVID-19 cases reported in fitness clubs and leisure facilities across Europe: a THiNK Active report

Version 1.1 - 17 December 2020

Jimenez, A., Mayo, X., Lopez-Valenciano, A., Dalton, C., Del Villar, F. Luque, A., Broughton, L., Wade, M., Shakespeare, J., Copeland, R.J.

Universidad Rey Juan Carlos
CENTRO DE ESTUDIOS DEL DEPORTE
Sheffield Hallam University | Advanced Wellbeing Research Centre
UK active RESEARCH INSTITUTE

Supported by:

EXORLIVE how to move! exerp LIFEFITNESS FAMILY OF BRANDS MATRIX myzone TECHNOGYM

Principal Investigators:

Prof. Alfonso Jimenez
THiNK Active Research Centre, AWRC-Sheffield Hallam University, GO fit LAB

Dr. Xian Mayo
Centre for Sport Studies, King Juan Carlos University

Co-investigators:

Prof. Robert J. Copeland
AWRC-Sheffield Hallam University

Dr. Alejandro Lopez-Valenciano
Centre for Sport Studies, King Juan Carlos University, GO fit LAB

Research team:

Dr. Caroline Dalton
AWRC-Sheffield Hallam University

Prof. Fernando Del Villar
Centre for Sport Studies, King Juan Carlos University

Dr. Antonio Luque
Centre for Sport Studies, King Juan Carlos University

ukactive Research Institute:

Lizzie Broughton
Senior Insight Manager (Principal Investigator)

Dr. Matthew Wade
Head of Research (Co-Investigator)

Jack Shakespeare
Director of Children, Young People, Families and Research (Co-Investigator)

Contents

Preface 6

Format 7

Executive Summary 8

Section 1.0 - Introduction 9

1.1 Implications of COVID-19 crisis: health, social and economic consequences . 9
1.2 Importance of physical activity and wellbeing for society: 10
1.3. In the pursuit of answers 13
1.4 The potential risk of exercising within fitness and leisure facilities during the COVID-19 pandemic. 14
1.5. A description of the studies included in this THiNK Active report 15

Section 2.0 – Data on self-reported COVID-19 cases from visits to facilities in mainland Europe – the SafeACTiVE Study. 16

2.1. Study design 16
2.2. Ethical approval 19
2.3. Quality Assurance 19
2.4 SafeACTiVE Study Results 20
2.4.2. Descriptive analysis of SafeACTiVE data collected per country 26

Section 3.0 – Data on COVID-19 cases and customer visits to UK facilities – ukactive Research Institute Study 27

3.1 Data collection methods ukactive study 27
3.2 Data analysis 27
3.3 Data sample 28
3.4 Results from UK data 29

Section 4.0 – Fitness club and leisure facility self-reported cases of COVID-19 across mainland Europe and the UK combined 31

Section 5.0 – Discussion 34
5.1 Creating safe and active environments for all 35
5.2 Continuing to deliver on the vision of ensuring equity of access 35
5.3 The potential role of public health messaging and socioeconomic disadvantage 36
5.3.1 Socioeconomic disadvantage 36
5.4 Social and economic impact of ensuring access to health and fitness clubs during a pandemic 38
5.5 Aerosol transmission 38
5.6 Strengths and limitations 39
Section 6.0 - Conclusions 40
Section 7.0 - References 41
Appendix 1.0 46

Preface

We are very pleased to present the findings of this independent evaluation of the reported cases of COVID-19 in European fitness clubs and leisure facilities, initiated by EuropeActive and THINK Active. The evaluation assesses data from mainland Europe (collected as part of the SafeACTiVE study) and UK data (collected by the ukactive Research Institute). This final SafeACTiVE report is the collective accomplishment of EuropeActive's academic partners, European national fitness associations, club operators, and six industry sponsors; Exerp, ExorLive, Life Fitness, Matrix, Myzone and Technogym. We would like to acknowledge Universidad Rey Juan Carlos, Sheffield Hallam University, Professors Alfonso Jimenez and Robert Copeland and their teams for undertaking the SafeACTiVE research for mainland Europe, and ukactive Research Institute for their generous contribution and assessment of the report's UK data.

As European society is moving through the second wave of COVID-19, ensuring that our sector, and particularly EuropeActive's national fitness association partners, have factual evidence to determine whether our facilities are safe for public use in terms of COVID-19 is absolutely critical. Reliable evidence like SafeACTiVE will help governments and authorities across Europe make informed decisions regarding which COVID-19 measures might, or might not, be appropriate to apply in terms of public access to fitness and exercise facilities As essential providers of physical and mental health and wellbeing in our communities our sector must demonstrate that we can provide safe environments for citizens to stay physically active, and that we do not contribute in any significant way to the further spread of COVID-19.

It is a key priority under EuropeActive's Horizon 2025 Manifesto to ensure that our sector is underpinned by robust, reliable evidence. For that reason we have established THiNK Active, our new research centre, which will lead EuropeActive's research and innovation agenda for our sector. THiNK Active will work closely with our academic partners and Europe's national fitness associations to deliver coordinated, efficient and impactful research, which will underpin our sector's future position as essential providers of health and wellbeing in European society

This is an extraordinarily demanding and challenging time for us all. The negative effects of the pandemic, restrictions and lockdowns can be clearly seen across our economy and our communities. At EuropeActive we are passionate about Active Citizenship - including our sector's important role and responsibility in Europe's recovery from COVID-19. Not only do we know from credible scientific studies that human beings think more efficiently when we are physically active, but our sector's products and services, effectively making European citizens physically active, are essential to reverse the negative effects of physical inactivity caused by the pandemic as well as unhealthy lifestyles in general.

The data in this report demonstrates that our sector's fitness and exercise facilities are exceptionally safe when it comes to COVID-19. In other words, our sector is both able and ready during the pandemic, during the post-COVID19 recovery and beyond, to ensure safe exercise environments providing essential health and wellbeing to tens of millions across the continent on a daily basis.

David Stalker,
President, EuropeActive

Andreas Paulsen
Executive Director, EuropeActive

Format

Format of the THiNK Active report on the risk of transmission of COVID-19 in fitness clubs and leisure facilities across Europe

This is a large report, with a substantial volume of data presented. Therefore, it is important to provide clarity on which data is being presented in the different sections.

In section 2.0, we present attendance data from facilities across mainland Europe. This data was collected as part of the 'SafeACTiVE study' developed and delivered by the Centre for Sport Studies at King Juan Carlos University and the Advanced Wellbeing Research Centre at Sheffield Hallam University. The sample presented includes close to 60 million visits from 13 countries. This data was collected from 4th May to 25th October 2020.

In section 3.0, we present data from the United Kingdom (UK). This data was collected by the ukactive Research Institute. This data represents 55 million visits collected from of 24th of July to 25th October 2020.

In section 4.0, we present outcomes from the combined dataset (mainland Europe and UK) of 115 million visits.

Disclaimer

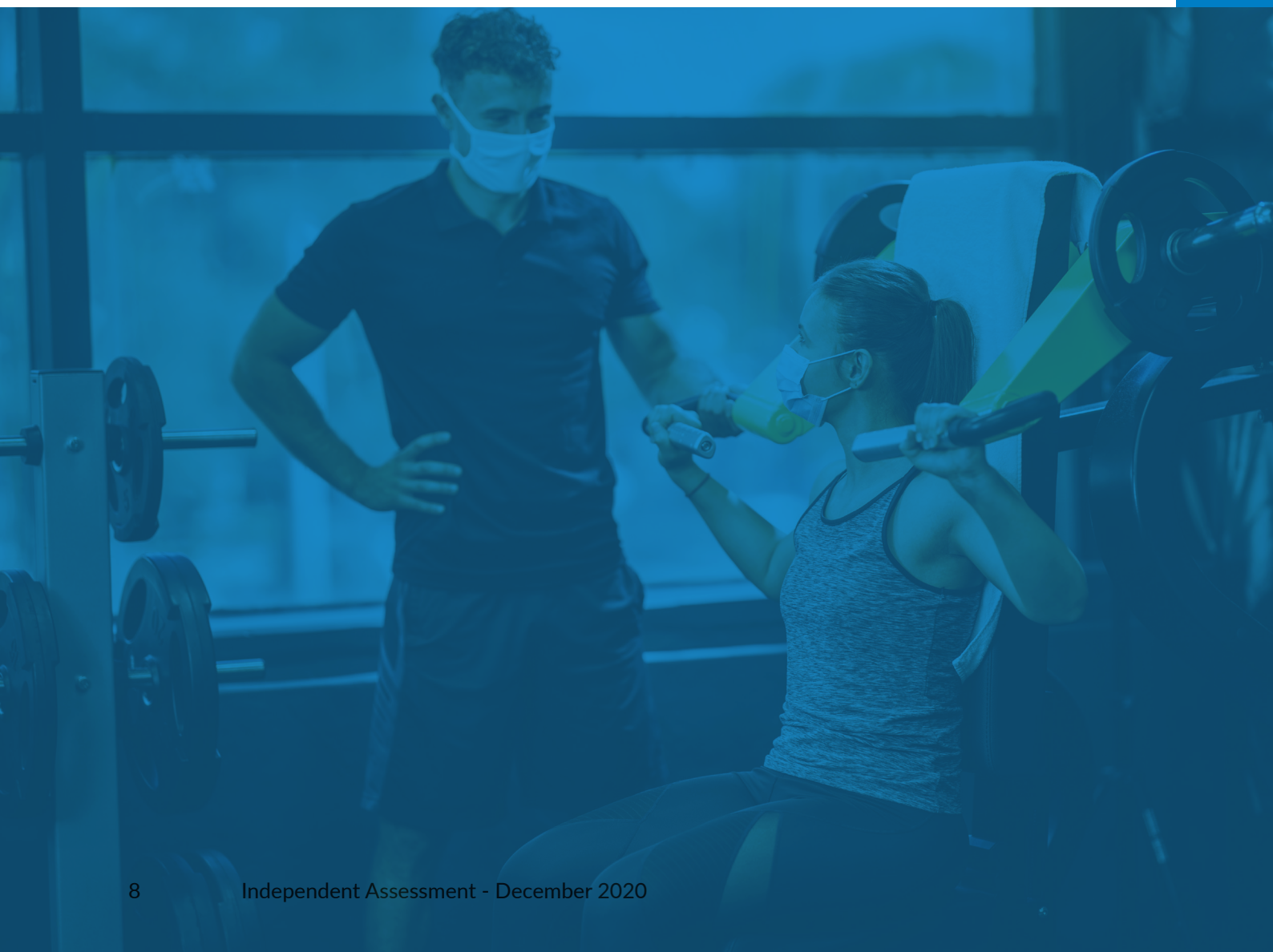
The statistical information contained in this report is representative of the individuals and organisations responding to the survey. All reasonable efforts were taken by the research teams to ensure data comparability within the scope and limitations of the reporting processes described herein. The data contained in this report, however, is not necessarily based on third-party audited data. The statistical validity of any given number varies depending upon sample sizes and degree of consistency among responses for any data point.

THiNK Active, ukactive Research Institute, the Centre for Sport Studies at King Juan Carlos University and the Advanced Wellbeing Research Centre at Sheffield Hallam University, therefore make no representations or warranties with respect to the results of this study and shall not be liable to clients or anyone else for any information inaccuracies, or errors or omissions in content, regardless of the cause of such inaccuracy, error or omission. In no event THiNK Active, ukactive Research Institute, the Centre for Sport Studies at King Juan Carlos University and the Advanced Wellbeing Research Centre at Sheffield Hallam University shall be liable for any consequential damages.

Executive Summary

This THiNK Active report sets out to understand the extent that gyms, fitness clubs and leisure centres - during the COVID-19 pandemic - provide individuals with a safe environment in which to be physically active. This comprehensive report using data from across the health and fitness sector in Europe explored COVID-19 cases in comparison with number of visits over a 6-month period. We found the self-reported incidence rate of positive COVID-19 cases was 1.12 cases per 100,000 visits for the combined SafeACTiVE and ukactive data sets. This was taken from a total sample of 115 million visits across 14 countries. The data – albeit self-reported - suggests that fitness clubs and leisure centres (where industry standard mitigation is in place) provide safe public spaces in which to exercise, with low self-reported cases of COVID-19.

A pool of research and evaluation teams from the Centre for Sport Studies at King Juan Carlos University (Spain), the Advanced Wellbeing Research Centre at Sheffield Hallam University (UK) and ukactive Research Institute worked together on this first report from THiNK Active, EuropeActive´s Research Centre. They employed robust data collection methods and their findings are consistent with findings from public health sources.



Section 1.0 - Introduction

1.1 Implications of COVID-19 crisis: health, social and economic consequences

On 31st December 2019, the Wuhan Municipal Health Commission reported a cluster of pneumonia cases of unknown aetiology, with a common source of exposure at Wuhan's 'South China Seafood City' market. Further investigations identified a novel coronavirus as the causative agent of the respiratory symptoms for these cases. The outbreak rapidly evolved, affecting other parts of China and spreading to countries worldwide. On 30th January 2020, WHO declared that the outbreak of coronavirus disease (COVID-19) constituted a Public Health Emergency of International Concern (PHEIC), accepting the Committee's advice and issuing temporary recommendations under the International Health Regulations (IHR). On 11th March 2020, the Director General of WHO declared the COVID-19 outbreak a pandemic (ECDC, 2020).

According to data published (as of 2nd December 2020) by the European Centre for Disease Prevention and Control (ECDC)[1], the number of cases globally has reached 63,821,835, with the number of deaths recorded as 1,482,541. In the EU/EEA and the United Kingdom (UK), the combined number of cases has reached 18,410,639, and the number of deaths 419,777.

The world is experiencing an extraordinary challenge due to COVID-19. Now in its second wave, the crisis continues to impact acute health and care services across Europe. Yet, whilst it is hard to predict when the pandemic will subside and communities return to normal, the majority of European countries must focus on tackling the wider and longer-term social and economic impacts caused by COVID-19. The economic impact alone is expected to be harder than the financial crisis of 2008 (World Bank, 2020[2]) but importantly here, the cost to the health and wellbeing of the population, and particularly those from poorer communities is likely to be catastrophic. ***One thing, is clear; COVID-19 has shone a light on the fact that inequalities in health, wellbeing and economic status across our communities have made people more vulnerable to this disease and that this inequality is no longer acceptable (Jimenez, Mayo, Copeland, 2020)[3].***

1 European Centre for Disease Prevention and Control, Communicable disease threats report, 8-14 November 2020, week 46 (https://www.ecdc.europa.eu/sites/default/files/documents/communicable-disease-threats-report-14-nov-2020-public_0.pdf)

2 World Bank. 2020. Global Economic Prospects, June 2020. Washington, DC: World Bank. DOI: 10.1596/978-1-4648-1553-9

3 Jimenez, A., Mayo, X., Copeland, R.J. (2020) "The Economic and Social Impact of promoting active living after the COVID-19 crisis. The role, value and impact of a proactive and responsible health and fitness industry" https://www.europeactive.eu/sites/europeactive.eu/files/covid19/Economic-Social-Impact_050620.pdf

1.2 Importance of physical activity and wellbeing for society:

In a previous EuropeActive report (Jimenez, Mayo, & Copeland, 2020) we highlighted the connection of the COVID-19 pandemic with the existing physical inactivity pandemic, discussing the effects and potential increase in non-communicable disease that can be reasonably anticipated due to lockdown-related inactivity.

Regular physical activity (PA) - in line with recently updated guidance (Bull et al., World Health Organization-WHO, 2020)[4] - helps prevent and treat noncommunicable diseases (NCDs) including; heart disease, stroke, diabetes and some cancers. It can prevent hypertension, overweight and obesity and improves mental health, quality of life and wellbeing (Bull et al., World Health Organization-WHO, 2020). Societies that are more active generate additional returns including: reduced use of fossil fuels, cleaner air and safer, less congested roads (WHO, 2018)[5]. These outcomes are interconnected with achieving the shared goals, political priorities and ambitions of the Sustainable Development Agenda 2030.

Not meeting guidelines for PA on the other hand (i.e. physical inactivity), is a global risk factor for disease and mortality. What is more, increased time spent sedentary (i.e. sitting time), independent of leisure time PA, has also been identified as a significant predictor of adverse health outcomes (Patterson et al., 2018[6]; Young et al., 2016[7]). Each additional hour of sitting time is estimated to increase annual healthcare costs in older adults by $126 (Rosenberg et al, 2015[8]). It is unsurprising that the Global Action Plan (WHO, 2013[9]) positioned physical inactivity as one of the critical noncommunicable disease risk factors and set a target for all countries to reduce prevalence (relative to their baseline) by 10% by 2025.

As highlighted in a recent editorial piece by van der Ploeg and Bull (2020)[10], the 2020 WHO new global guidelines reaffirm the message of Professor Jeremy Morris more than 25 years ago (Morris, 1994)[11], that investment in physical activity continues to be a "best buy for public health". The WHO PA guidelines reaffirm the importance of movement within everyday life, substantiating the list of benefits that result from active societies (van der Ploeg and Bull, 2020). For example, estimates suggest that between 3.9 million (Strain et al., 2020)[12] and 5.3

---

4 Bull FC, et al. (2020) World Health Organization-WHO Guidelines on physical activity and sedentary behaviour. Br J Sports Med 2020;54:1451–1462. doi:10.1136/bjsports-2020-102955

5 World Health Organization (2018). Global Action Plan on Physical Activity (GAPPA), 2018-2030: https://www.who.int/ncds/prevention/physicalactivity/global-action-plan-2018-2030/en/

6 Patterson R, McNamara E, Tainio M, et al. Sedentary behaviour and risk of all-cause, cardiovascular and cancer mortality, and incident type 2 diabetes: a systematic re- view and dose response meta-analysis. Eur J Epidemiol 2018;33(9):811-829.

7 Young DR, Hivert MF, Alhassan S, et al. Sedentary behavior and cardiovascular mor- bidity and mortality: a science advisory from the American Heart Association. Circulation 2016;134(13):e262-e279.

8 Rosenberg D, Cook A, Gell N, Lozano P, Grothaus L, Arterburn D. Relationships be- tween sitting time and health indicators, costs, and utilization in older adults. Prev Med Rep 2015;2:247-249.

9 World Health Organization (2013). Global action plan for the prevention and control of noncommunicable diseases 2013-2020. Geneva, 2013.

10 van der Ploeg, H.P., Bull, F.C. Invest in physical activity to protect and promote health: the 2020 WHO guidelines on physical activity and sedentary behaviour. Int J Behav Nutr Phys Act 17, 145 (2020). https://doi.org/10.1186/s12966-020-01051-

11 Morris JN. Exercise in the prevention of coronary heart disease: today's best buy in public health. Med Sci Sports Exerc. 1994;26:807–14.

12 Strain T, Brage S, Sharp SJ, Richards J, Tainio M, Ding D, Benichou J, Kelly P. Use of the prevented fraction for the population to determine deaths averted by existing prevalence of physical activity: a descriptive study. Lancet Glob Health.

million (Lee at al., 2012)[13] deaths can be prevented annually through a physically active lifestyle. Insufficient PA lowers mechanical load, metabolic rate, and energy expenditure resulting in a decline in cardiorespiratory fitness and an energy surplus. This leads to disease manifestations, with associated economic burden on tomorrow's society (Malm et al., 2019)[14]. Although the precise impact of COVID-19 on physical activity is not fully known (Guan et al., 2020)[15], Jakobsson and colleagues (Jakobsson et al., 2020)[16] highlight that; encouraging or mandating that people should remain within their homes and discontinue daily life activities is likely to increase sedentary behavior, decrease general PA, and lead to negative health consequences at a population level. ***For some, particularly those with long-term conditions (Chow et al., 2020)[17], COVID-19 and the conditions it has created, present a perfect storm where inactivity and sedentary behaviors are exacerbated, worsening the impact of future pandemics*** (Hall et al., 2020[18]).

As Hall and colleagues (Hall et al., 2020) and numerous others (Pratt et al., 2019[19]; Kohl et al., 2012[20]; Ozemeck et al., 2019[21]) remind us, the world has been living with the pandemic of inactivity for a number of years – not only during COVID-19. According to the WHO, 31% of individuals 15 years or older are currently physically inactive. Despite overwhelming evidence of a physical inactivity pandemic (Kohl et al., 2012)21, and attempts globally to increase PA across nations (WHO, 2020), population-level physical inactivity remains unacceptably high (Guthold et al., 2018[22]; Du et al, 2019[23]). At the current trajectory, the 2025 global PA goal of reducing inactivity by 10% will not be met (Guthold et al., 2018). The COVID-19 pandemic epidemiology highlights that age and inequalities in health, wellbeing and economic status make people more vulnerable. The disease can be particularly severe for those that are older, of excess weight

---

2020;8:e920–30.

13 Lee IM, Shiroma EJ, Lobelo F, Puska P, Blair SN, Katzmarzyk PT. Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. Lancet. 2012;380:219–29.

14 Malm, C., Jakobson, J., Isaksson, A. Physical Activity and Sports—Real Health Benefits: A Review with Insight into the Public Health of Sweden. Sports 2019, 7, 127; doi:10.3390/sports7050127

15 Guan, H., Okely, A. D., Aguilar-Farias, N., del Pozo Cruz, B., Draper, C. E., El Hamdouchi, A., Florindo, A. A., Jáuregui, A., Katzmarzyk, P. T., Kontsevaya, A., Löf, M., Park, W., Reilly, J. J., Sharma, D., Tremblay, M. S., & Veldman, S. L. C. (2020). Promoting healthy movement behaviours among children during the COVID-19 pandemic. The Lancet Child and Adolescent Health, 4(6). https://doi.org/10.1016/S2352-4642(20)30131-0

16 Jakobsson J, Malm C, Furberg M, Ekelund U and Svensson M (2020) Physical Activity During the Coronavirus (COVID-19) Pandemic: Prevention of a Decline in Metabolic and Immunological Functions. Front. Sports Act. Living 2:57. doi: 10.3389/fspor.2020.00057

17 For example, individuals with COVID-19 are much more likely to be hospitalized and have poorer health outcomes if underlying medical conditions are present (Chow N, Fleming-Dutra K, Gierke R, et al. Preliminary estimates of the prevalence of selected underlying health conditions among patients with Coronavirus disease 2019 — United States, February 12–March 28, 2020. MMWR Morbidity and mortality weekly report. 2020;69(13)).

18 Hall, G., D.R. Laddu, S.A. Phillips, et al. (2020), A tale of two pandemics: How will COVID-19 and global trends in physical inactivity and sedentary be..., Progress in Cardiovascular Diseases, https://doi.org/10.1016/j.pcad.2020.04.005

19 Pratt M, Ramirez Varela A, Salvo D, Kohl III HW, Ding D. Attacking the pandemic of physical inactivity: what is holding us back? British Journal of Sports Medicine. 2019:bjsports-2019-101392.

20 Kohl, HW, Craig CL, Lambert EV, et al. The pandemic of physical inactivity: global action for public health. The Lancet 2012;380(9838):294-305.

21 Ozemek C, Lavie CJ, Rognmo O. Global physical activity levels - need for intervention. Prog Cardiovasc Dis 2019;62(2):102-107.

22 Guthold R, Stevens GA, Riley LM, Bull FC. Worldwide trends in insufficient physical activity from 2001 to 2016: a pooled analysis of 358 population-based surveys with 1·9 million participants. Lancet Glob Heal. 2018;6:e1077–86.

23 Du Y, Liu B, Sun Y, Snetselaar LG, Wallace RB, Bao W. Trends in adherence to the physical activity guidelines for Americans for aerobic activity and time spent on sedentary behavior among US adults, 2007 to 2016. JAMA Netw Open 2019;2(7), e197597.

Our role as a proactive and responsible industry (Jimenez, Mayo, Copeland, 2020) is to communicate the benefits of PA effectively, and to create the conditions that make activity easy, attractive, social and safe.

This is so that individuals can engage in and benefit from the protective effects of regular physical activity from communicable and non-communicable disease, as well as the wider social returns that come from an active society (Sport England, 2020).

and with comorbidities and people of ethnic minority backgrounds. The conditions created by the pandemic are severe and yet they have served to raise the ***importance of physical activity and wellbeing for society. Now is the time to translate this elevated profile into tangible social, behavioural and environmental change.*** All countries need to strengthen their efforts in the prevention and management of chronic disease by investing in population-based promotion of physical activity (van der Ploeg and Bull, 2020).

1.3. In the pursuit of answers

Research centres comprising academics from different disciplines[24], the private and public sector as well as multiple professional groups across the world, continue to pursue an understanding of how the virus affects the body and what can be done to mitigate its spread. Significant investment has also been made in seeking an effective COVID-19 vaccine in an attempt to return to normal. Whilst more than 75,058 research papers have been published in 2020 (PubMed database references including the term "COVID-19")[25], less than 2% of them (n= 860) relate to the potential role and/or impact that physical activity might have on addressing the consequences of the pandemic (PubMed database references including the terms "COVID-19 and exercise")[26]. This is somewhat surprising given the extensive evidence linking an active society (involving informal physical activity, regular exercise and/or sports participation) and reinforced immune function across the lifespan, including viral defense (Neiman, Wentz, 2019)[27]. Greater emphasis should be placed on tackling the wider physical and mental health consequences of the virus and this is where the health and fitness sector must play a central part.

Our role as a proactive and responsible industry (Jimenez, Mayo, Copeland, 2020) is to communicate the benefits of PA effectively, and to create the conditions that make activity easy, attractive, social and safe. This is so that individuals can engage in and benefit from the protective effects of regular physical activity from communicable and non-communicable disease, as well as the wider social returns that come from an active society (Sport England, 2020)[28].

24 Advanced Wellbeing Research Centre, Sheffield Hallam University https://www.shu.ac.uk/research/specialisms/advanced-wellbeing-research-centre/ricovr
25 https://pubmed.ncbi.nlm.nih.gov/?term=covid+19&size=200
26 https://pubmed.ncbi.nlm.nih.gov/?term=covid+19+and+exercise&size=200
27 Nieman, D.C., Wentz, L.M. The compelling link between physical activity and the body's defense system. J Sport Health Sci, 8 (2019), pp. 201-217.
28 Sport England, Measuring Impact, 2020. https://www.sportengland.org/how-we-can-help/measuring-impact?section=social_and_economic_value_of_community_sport

1.4 The potential risk of exercising within fitness and leisure facilities during the COVID-19 pandemic.

The health and fitness sector plays a key role in promoting the health and wellbeing of communities. Importantly here, EuropeActive's national fitness association partners must therefore demonstrate with robust evidence that facilities are safe for public use in terms of COVID-19 risk. In May 2020, EuropeActive, alongside the International Health Racquet and Sports Clubs Association (IHRSA) and the World Federation of the Sporting Goods Industry (WFSGI), developed guidance on the ***key considerations on the health and safety aspects of the operation of sports, fitness, aquatics, thermal facilities/clubs in the context of COVID-19***[29]. This document, together with an accompanying COVID-19 Risk Assessment Tool and Mitigation Checklist, aimed to support club/facility operators to make evidence-based decisions on the risks associated with reopening facilities. Furthermore, to help identify and address specific and additional risks pertaining to exercising in a leisure facility during the pandemic. EuropeActive also developed a ***practical guide to re-opening and operating a fitness facility in a pandemic***, delivered as an online learning programme. The guide covered best practice to help fitness club owners and operational staff develop procedures for safe operation and re-opening with all due consideration of the complexity created by the COVID-19 pandemic restrictions and limitations (EuropeActive, 2020)[30]. This guidance represents an industry standard.

A recent randomized control trial, involving 3,764 participants, developed by the University of Oslo (Helsingen et al., 2020)[31], showed no virus transmission or increase in COVID-19 related risk to opening of training facilities ***providing good hygiene and distancing measures were observed***. This initial trial highlighted that facility-based activity can be undertaken safely, with limited risk of COVID-19 transmission, by adopting appropriate mitigation strategies (such as those outlined by EuropeActive). The prevention of further spread of COVID-19 has to be our primary objective and yet enabling people to continue to be active will help mitigate to some extent, the negative effects of COVID-19 on health and wellbeing. Therefore, further studies are required to explore the number of cases reported by fitness and leisure facilities – given their importance in maintaining an individual's health and wellbeing.

With this in mind, this THiNK Active report set out to understand to what extent gyms, fitness clubs and leisure centres - during the COVID-19 pandemic - provide individuals with a safe environment in which to be physically active.

---

29 IHRSA, EuropeActive, WFSGI, et al. (2020) Key considerations for sports, fitness, aquatics, thermal facilities/clubs in the context of COVID-19.
https://cdn2.hubspot.net/hubfs/167081/Advocacy/Letter%20PDFs/Key%20Considerations%20for%20Sports%20Fitness%20Aquatics%20Ancillary%20Facilities%20Clubs%20in%20the%20Context%20of%20COVID-19_May_2020.pdf
30 EuropeActive (2020). A practical guide to re-opening and operating a fitness facility (e-learning programme). https://www.europeactive.eu/covid19-guidance
31 The TRAiN Study Group. Randomized Re-Opening of Training Facilities during the COVID-19 pandemic. https://www.medrxiv.org/content/10.1101/2020.06.24.20138768v2.full.pdf

1.5. A description of the studies included in this THiNK Active report

To our knowledge, this THiNK Active report is the first to present data on COVID-19 self-reported cases in comparison with number of visits in fitness facilities and leisure centres across Europe. The aim of the report was to understand to what extent the sector provides individuals with a safe environment in which to be physically active. It is hoped that data here will contribute to government policy and public perception regarding the risk presented by the fitness and leisure sector in terms of COVID-19.

The report includes data from two studies, drawing from independent databases:

1. *In section 2.0, we present data from the SafeACTiVE Study. This study explored attendance data across mainland Europe, including 59,9 million visits from 13 countries. This data was collected in the broad open period of operations from 4th May to 25th October (week #19 to week #43 of 2020) directly by academics from Universidad Rey Juan Carlos and Sheffield Hallam University's Advanced Wellbeing Research Centre.*

2. *In section 3.0, we present data from a study conducted by the ukactive research institute. This study explored UK data, including more than 55,3 million visits collected in the open period of operations from of 24th July to 25th October (week #30 to week #43 of 2020).*

To provide a view of the number of self-reported cases of COVID-19 across mainland Europe and the UK, section 4.0, presents outcomes from a combined dataset (mainland Europe and UK). Taken collectively, the total sample (mainland Europe and UK data) comprises 4,360 fitness clubs and leisure centres from 14 different European countries. A total of 115,3 visits in the broad open period of operations from 4th May to 25th October 2020 (week #19 to week #43 of 2020) were recorded. This sample represents 6.8% of the total number of fitness clubs and leisure centres across Europe (63,644 centres - EuropeActive, Deloitte, 2020)[32].

32 *EuropeActive, Deloitte. 2020 European Health & Fitness Market Report, Brussels, 2020.*

Section 2.0 – Data on self-reported COVID-19 cases from visits to facilities in mainland Europe – the SafeACTiVE Study.

The description of the methods included in Section 2.0 pertains to the collection of data from mainland Europe only. This is termed the SafeACTiVE Study and was a discrete piece of research.

2.1. Study design

The SafeACTiVE Study adopted a repeated cross-sectional survey design. The survey was informed by a rapid review of published evidence on COVID-19 transmission and via extensive interaction with sector stakeholders prior to the study commencing. The questionnaire was then built as a digital data collection platform using Google forms solution[33].

Participating organisations were asked to provide information on; total visits on a week-by-week basis, and by using data provided by their access/membership systems, confirmed COVID-19 cases in their members and staff on a weekly basis. The location, type of facility, size of facility, staffing, population groups served and COVID-19 safety and protection measures in place were also recorded. To provide reliable information to policy makers and the public, we only considered official data of positive COVID-19 cases that was available on health authorities public data repositories (i.e. the European Centre for Disease Prevention and Control (ECDC)[34] https://www.ecdc.europa.eu/en/publications-data/COVID-19-testing). Whilst a direct comparison cannot be drawn between these two data sets as they use different methodologies, it is useful to present the officially reported rate (per 100,000 population) alongside the facility specific rate (per 100,000 visits) to monitor the change in each over the weeks and to identify if the pattern of cases within facilities across countries in Europe is similar to the overall pattern across the continent. In that regard, exploring 'population groups served' intended to help contextualize the overall impact of COVID-19 infection rates in fitness facilities and leisure centres.

---

33 Google forms solution. https://www.google.com/intl/en-GB/forms/about/

34 ECDC is an EU agency aimed at strengthening Europe's defences against infectious diseases. The core functions cover a wide spectrum of activities: surveillance, epidemic intelligence, response, scientific advice, microbiology, preparedness, public health training, international relations, health communication, and the scientific journal Eurosurveillance. (https://www.ecdc.europa.eu/en/about-ecdc)

The number of weekly cases per used to estimate weekly test positivity per country is based on data collected by ECDC Epidemic Intelligence. The information sources are Ministries of Health or National Public Health Institutes (websites, twitter official accounts or Facebook official accounts), and the obtained data is systematically cross checked with data from WHO. More information is available at https://www.ecdc.europa.eu/en/COVID-19/data-collection

The main source of total tests per country per week is aggregate data submitted by Member States to TESSy or obtained directly from Member States via surveys. However, when not available, ECDC compiles data from public online sources. These data have been automatically or manually retrieved ('web-scraped') daily from national/official public online sources from EU/EEA countries and the UK. It should be noted that there are several limitations to this type of data. Scraped data are not available for all variables and/or countries due to content variability on national websites. Additionally, the data collection process requires constant adaptation to avoid to interrupted time series (i.e. due to modification of website pages, types of data).

SafeACTiVE Code of Ethics Declaration:

"The reporting of data should be done with honesty and integrity, and every effort should be made to report data in the scientifically most accurate method (Marco and Larkin, 2000).

The SAFEActive study research team will only be able to provide conclusions that are supported by accurate data.

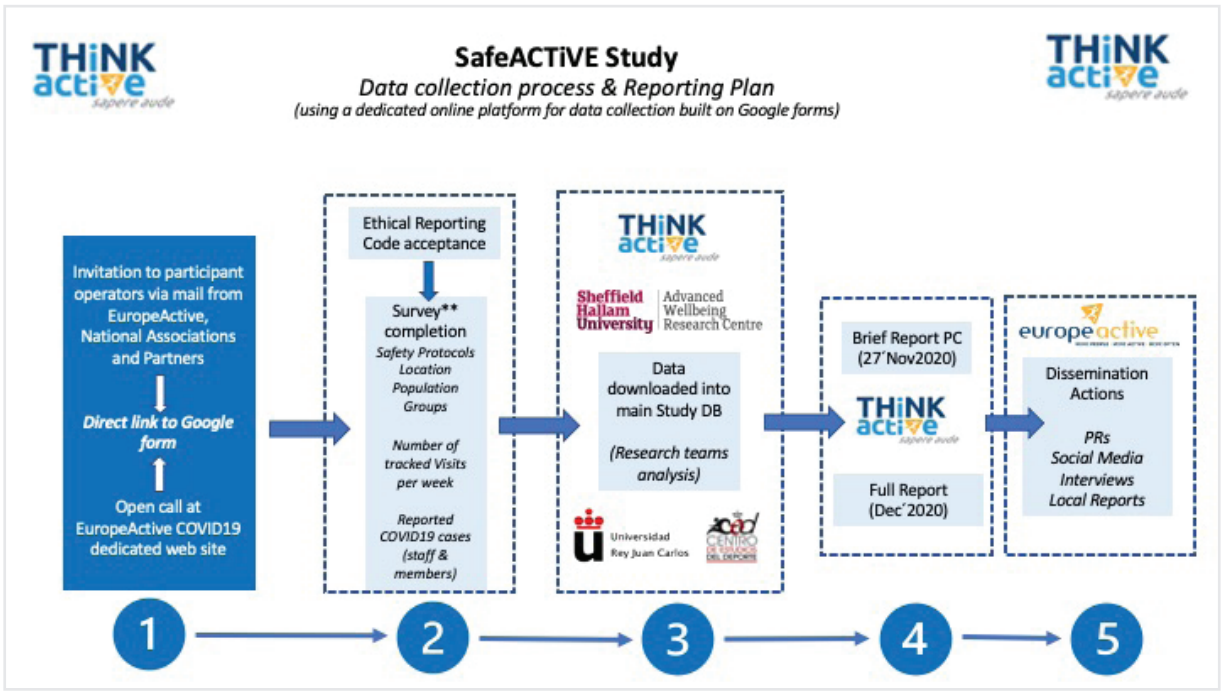
The participant should make every effort to preserve the integrity and security of the reported data provided for this study".

The study survey was designed to take no more than 15 minutes to complete, once the participating site had collected weekly data from its access control system. Participant organisations´ privacy was fully protected with confidentiality maintained and not linked to operator´s identity. Survey responses and email addresses were stored separately with access to this information controlled and limited only to the research team. Sponsors and supporting organizations did not have access to any data. Fitness clubs and leisure centre operators were invited to take part via email with a direct access link to the SafeACTiVE Study survey platform to report data. As part of the informed consent process, participant operators had to accept and sign the following Code of Ethics Declaration:

"The reporting of data should be done with honesty and integrity, and every effort should be made to report data in the scientifically most accurate method (Marco and Larkin, 2000)[35]. The SAFEActive study research team will only be able to provide conclusions that are supported by accurate data. The participant should make every effort to preserve the integrity and security of the reported data provided for this study"."

Figure 1.0 presents a summary of the data collection process and reporting plan for the study.

Figure 1.0: Summary of data collection process and reporting plan



For additional information on the data collection process please visit the SafeACTiVE Study survey platform:

https://docs.google.com/forms/d/e/1FAIpQLSeBDsGUDTX3WVxYx9o6xuyQQtXiSwKnIsz0dMwqiX3Fn71JIg/viewform

35 Marco CA, Larkin GL. Research ethics: ethical issues of data reporting and the quest for authenticity. Acad Emerg Med. 2000;7(6):691-694. doi:10.1111/j.1553-2712.2000.tb02049.x

2.2. Ethical approval

The study protocol received ethical approval from the Research Ethics Committee of King Juan Carlos University. As part of the informed consent approval for the study, participant organisations were informed that non-identifiable survey data might be shared with other researchers as part of future studies. Participation was voluntary and any participating organisation could withdraw any point in time.

2.3. Quality Assurance

The Quality Assurance model followed the guidelines and recommendations defined by WHO for surveys (WHO, 2002)[36], adapting the recommended procedures to the nature of this research and the digital tool designed for the SafeACTiVE study.

In advance of substantive analysis of the SafeACTiVE Study data, there were a number of systematic checks of data quality (named as survey metrics) providing summary indicators of data quality.

The components of survey metrics included:

- *Completeness, which includes response rate (and incomplete questionnaires or item non-response).*
- *Reliability, which indicates replicability of results using the same measurement instrument on the same respondent at different times. This analysis used the data from the test/re-test protocol undertaken in 15% of the whole sample.*
- *Comparison with external validators, that is to say, comparison with other similar survey results, as well as private and public sector data.*

The research team at King Juan Carlos University (responsible for data collection and data analysis) reviewed quality of data collected and any potential missing information from participant organisations on a daily basis. A complete support and follow up process was established for participant organisations to address data reporting issues. An independent researcher (i.e. not part of the study team) at King Juan Carlos University completed an aleatory quality assurance check of data collected (at least 15%) to confirm accuracy of data, completeness and reliability.

36 World Health Survey: Quality Assurance and Guidelines: Procedures for Quality Assurance Implementation by Country Survey Teams and Quality Assurance Advise. Geneva: WHO, 2002.

2.4 SafeACTiVE Study Results

2.4.1. Descriptive analysis of SafeACTiVE data collected

Across mainland Europe, a total of 2,362 fitness clubs and leisures centres, operated by 112 organisations, in 13 different European countries participated in the SafeACTiVE study. The sample reported a total of 59,999,476 visits in the open period of operations from 4th May to 25th October (week #19 to week #43 of 2020).

NB: It is important to note that each participant operator had the option to report data from the week in which they reopened facilities after the lockdown set in their country of operation. At the same time, each operator uploaded data on the reporting platform in the defined sections with information that applied to their own particular situation. This means that the summatory value of some of the following tables could be slightly different to the overall sample size. So, information included in each table is reflecting the numbers supplied by participating operators.

Finally, it is important to draw the reader's attention to the fact that the information available from some countries is very limited (coming from reported data from a very small number of operators or clubs) and results therefore need to be treated with caution.

a) Total data collected at SafeACTiVE Study:

As summarized in table 1.0, a total of 59,999,476 visits to fitness clubs and leisure centres from 25 weeks (from week 19 to week 43) are showing a rate of positive reported COVID-19 cases of 0.85/100,000 visits (coming from 311 reported cases by members and 196 reported cases by staff).

Table 1.0: Total sample data collected at SafeACTiVE survey

VISITS	Reported COVID-19 cases in members	Reported COVID-19 cases in staff	Rate positive cases/100.000 visits
59,999,476	311	196	0.85

Table 2.0 is presenting a summary of the comparative analysis of number of visits per week (and reported positive cases at fitness clubs, including rate per 100,000 visits) with EU published pandemic data (total number of population affected and rate per 100,000 individuals) from the 13 countries participating in the study.

Table 2.0: Total data collected per week in the sample of participant operators from SafeACTiVE survey in 13 countries (including weekly COVID-19 cases, infection rate per 100,000 population, visits to fitness clubs, reported cases at fitness clubs and reported rate per 100,000 visits)

	COVID-19 CASES in the 13 EU countries	Rate/100,000 population	VISITS	Reported fitness club cases	Rate/100,000 visits
Week 19	39,013	12,38	14,475	0	0,00
Week 20	25,315	8,03	119,496	0	0,00
Week 21	22,775	7,23	144,358	0	0,00
Week 22	25,801	8,19	183,274	2	1,09
Week 23	20,697	6,57	423,156	0	0,00
Week 24	23,161	7,35	553,719	5	0,90
Week 25	23,907	7,59	726,438	6	0,83
Week 26	23,968	7,61	1,312,633	6	0,46
Week 27	207,31	6,58	2,086,065	4	0,19
Week 28	19,440	6,17	2,676,000	9	0,34
Week 29	23,430	7,44	2,760,415	9	0,33
Week 30	34,535	10,96	3,290,976	5	0,15
Week 31	44,127	14,00	3,624,209	12	0,33
Week 32	61,755	19,60	3,533,981	16	0,45
Week 33	75,290	23,89	3,542,133	20	0,56
Week 34	95,618	30,34	3,438,345	30	0,87
Week 35	117,246	37,21	3,428,311	29	0,85
Week 36	136,955	43,46	3,392,762	33	0,97
Week 37	167,779	53,24	3,822,199	41	1,07
Week 38	205,965	65,36	3,920,556	41	1,05
Week 39	240,668	76,37	3,711,262	41	1,10
Week 40	257,965	81,86	3,781,999	31	0,82
Week 41	353,830	112,28	3,269,823	62	1,90
Week 42	507,299	160,98	3,272,192	59	1,80
Week 43	541,520	171,84	2,970,699	46	1,55

Figure 2.0 shows the evolution of COVID-19 cases per week considering positive cases (per 100,000 population) in the 13 countries of our study sample, and the reported positive cases at fitness clubs per 100,000 visits

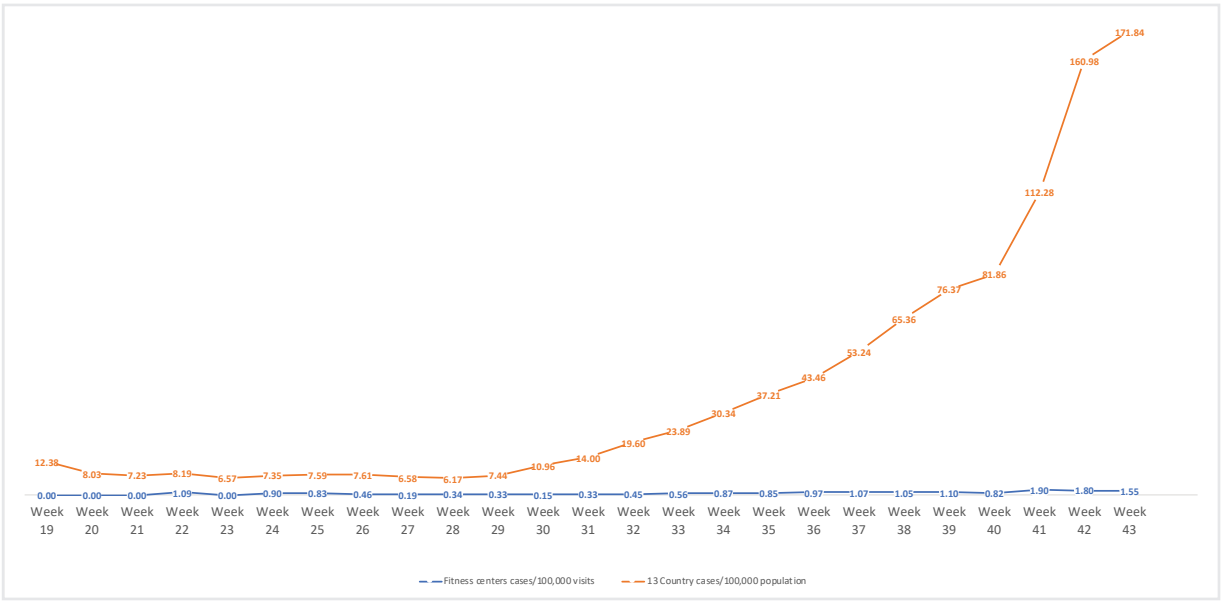


Figure 2.0: Evolution of COVID-19 cases per week considering positive cases (per 100,000 population) in the 13 countries of SafeACTiVE Study sample, and reported positive cases at fitness clubs (per 100,000 visits)

b) Data collected and results considering type of facility

An analysis of results considering the type of facility is included at table 3.0. The identification of different types of facilities is based on the definition of the health and fitness ecosystem developed by EuropeActive in partnership with Deloitte (2020).

Table 3.0: Total data collected per type of facility in the sample of participant operators (including total visits to different types of facilities, reported cases at each one and reported rate per 100,000 visits)

Type of facility	Number of visits	Member cases	Staff cases	Cases/100,000 visits
Boutique fitness studio (n=4)	68,625	7	0	10.2
Budget fitness club (named low-cost club as well) (n=27)	44,169,861	88	113	0.5
Community leisure centre (including indoor and outdoor facilities) (n=1)	140,981	0	0	0.0
Mid-market fitness club (n=50)	12,054,848	126	68	1.6
Premium fitness club (n=21)	3,541,584	85	15	2.8
PT/Specialized Studio (n=2)	8,557	0	0	0.0

Figure 3.0 presents the rate per 100,000 visits per type of facility. The type of facility and the number of operators (between brackets) are shown in the key.

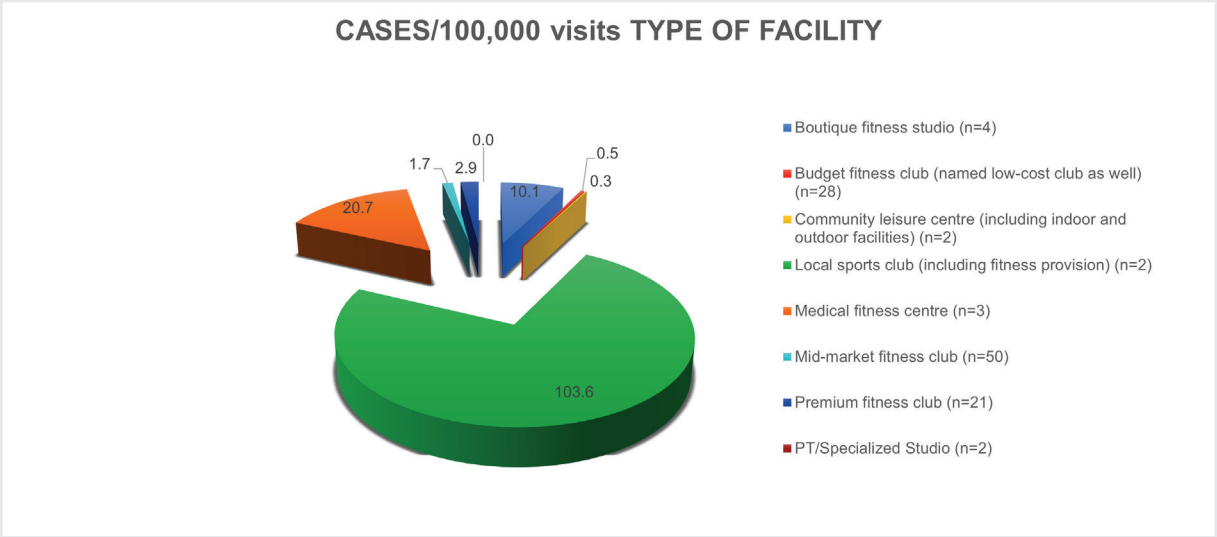


Figure 3.0: Distribution of positive COVID-19 reported cases in the different types of facilities.

c) Data collected and results considering size of facility

An analysis of results considering the size of facility is included in table 4.0. The identification of different sizes of facilities is based again on the definition of the health and fitness ecosystem developed by EuropeActive in partnership with Deloitte (2020).

Table 4.0: Total data collected per size of facility in the sample of participant operators from 13 countries (including total visits to of facilities of different sizes, reported cases at each one and reported rate per 100,000 visits)

Size of facility	Number of visits	Member cases	Staff cases	Cases/100,000 visits
Under 500m2 (n=17)	129,937	10	2	9.2
500 to 1,000m2 (n=25)	553,799	16	2	3.3
1,000 to 2,000m2 (n=41)	40,342,213	127	141	0.7
2,000 to 5,000m2 (n=19)	16,687,607	120	29	0.9
More than 5,000m2 (n=9)	2,069,020	38	22	2.9

d) Data collected and results considering population groups served at the participant fitness clubs and leisure centres

We asked participant operators to specify the population group they served at their facilities, aiming to explore the potential implications regarding safety and protective measures in place for populations at higher risk. In this case, each participant could choose from a scroll the different age groups that they were serving at their club/centre.

Table 5.0 shows the results obtained in the total sample considering age groups reported.

Table 5.0: Total data collected per reported population groups served by participant operators (including total visits in each case, reported cases and reported rate per 100,000 visits)

Age group	Number of visits	Member cases	Staff cases	Cases/ 100,000 visits
Adults 18 to 65 years-old (n=22)	35,324,809	52	92	0.4
Adults: 18 to 65 years-old Ageing: more than 66 years-old (n=12)	489,345	4	1	1.0
Only Ageing: more than 66 years-old (n=2)	5,465	0	0	0.0
Multigenerational (Children: 3 to 14 years-old, Adults: 18 to 65 years-old, Ageing: more than 66 years-old) (n=3)	358,021	2	3	1.4
Multigenerational Children: 3 to 14 years-old, Youth: 15 to 17 years-old, Adults: 18 to 65 years-old, Ageing: more than 66 years-old (n=32)	2,578,765	77	25	4.0
Multigenerational Youth: 15 to 17 years-old, Adults: 18 to 65 years-old (n=6)	22,910	3	1	17.5
Multigenerational Youth: 15 to 17 years-old, Adults: 18 to 65 years-old, Ageing: more than 66 years-old (n=33)	21,210,161	173	74	1.2

e) Data collected and results considering the impact of safety and protective measures in place at the participant fitness clubs and leisure centres

A total of 51 individual safety and protective measures were identified in the survey allowing participant operators to reflect their existing COVID-19 protocols. The measures included were those integrated in EuropeActive guidelines for the reopening and operation of fitness facilities, plus some additional actions implemented by leading organisations (identified and discussed at the interaction sessions with key stakeholders in the four weeks before the launch of the study).

Table 6.0 presents the results obtained when we analysed the impact of safety and protective measures in place. For that, and trying to simplify the exercise, we split the sample of operators reporting in detail their safety and protective measures into two groups. One group included those operators meeting (or exceeding) at least 75% of the proposed measures (at least 39 measures), and the second group those that had not reached this threshold of 75%.

Table 6.0: Total data collected by participant operators considering compliance with less or more than 75% of the safety and protective measures in place (including total visits in each case, reported cases and reported rate per 100,000 visits)

% Compliance	Number of visits	Member cases	Staff cases	Cases/100,000 visits
-75% (n=62)	42,683,935	155	123	0.65
+75% (n=36)	14,041,182	43	29	0.51

It is important to note, that 90.3% of the participant organisations were reporting detailed information regarding specific safety and protective measures following EuropeActive guidelines and national health authorities' requirements. Organisations meeting or exceeding this threshold of 75% of compliance were contributing to a ratio of positive cases almost 22% lower than the ratio identified in those not meeting this 75%.

f) Data collected and results considering the profile of operators (based on the volume of reported visits and/or the number of centres managed)

Table 7.0 presents detailed information based on the profile of operators (big or small). We included in the profile of "big operators" those participating in the study and reporting more than 1 million visits and/or data from more than 10 clubs/centres. We included within the "small operators" profile participating organisations reporting less than 1 million visits and/or less than 10 clubs/centres.

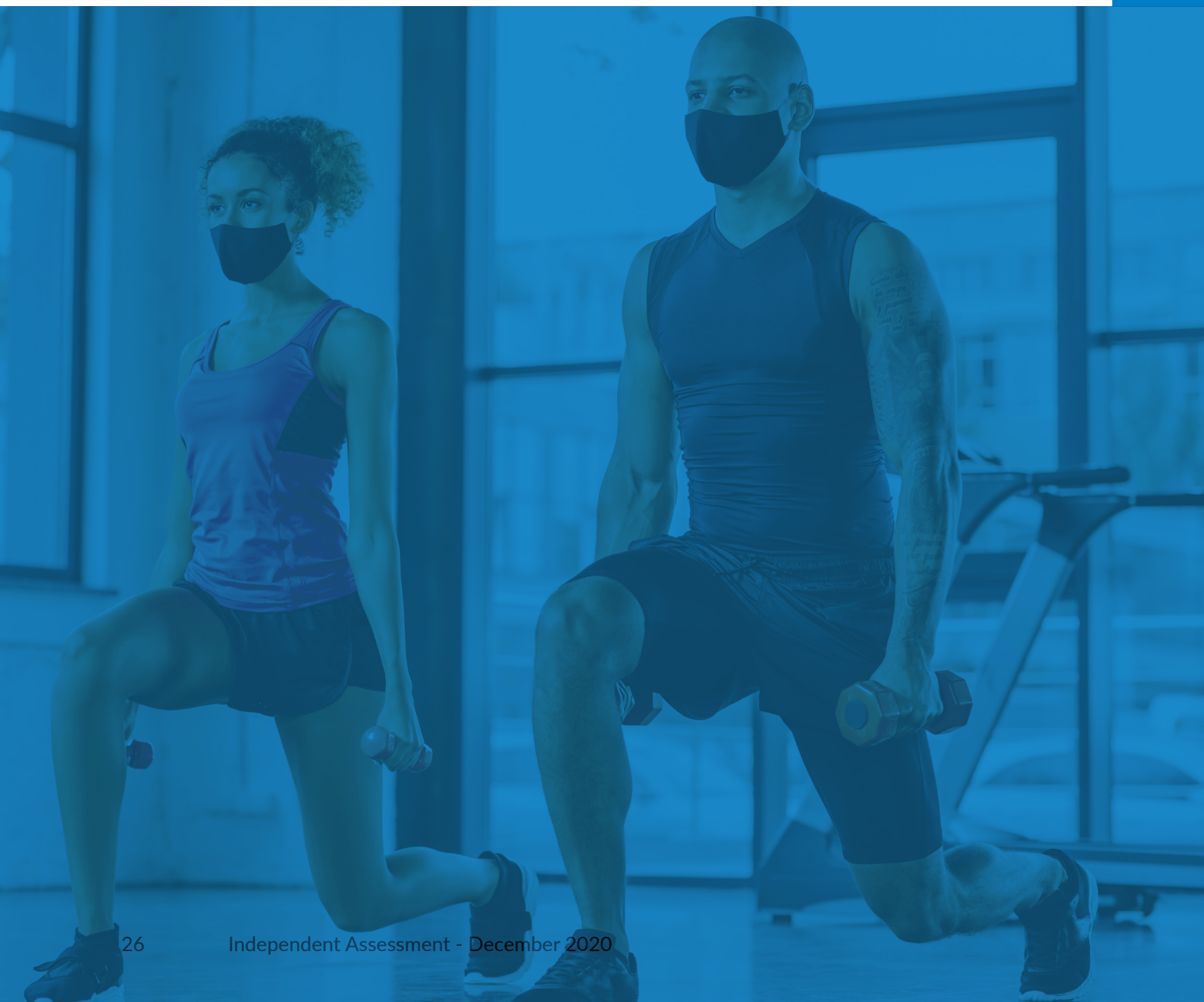
Table 7.0: Total data collected by participant operators considering their profile (big or small operators) (including total visits in each case, reported cases and reported rate per 100,000 visits)

Operator´s profile	Number of visits	Member cases	Staff cases	Cases/100,000 visits
Big Operators (n=23)	56,421,000	211	169	0.67
Small Operators (n=87)	3,578,476	100	27	3.55

2.4.2. Descriptive analysis of SafeACTiVE data collected per country

As part of the SafeACTiVE study, we collected data from 13 different European countries. **Appendix 1.0** presents facility reported infection rates per 100,000 people for each country in relation to the national weekly available data reported by the European Centre for Disease Prevention and Control (ECDC). We provide detailed information about the number of fitness clubs and leisure centre operators reporting data, total number of visits in a specific timeframe, total COVID-19 positive cases in the country in the period of reporting, total reported positive cases in members and staff in the participating facilities, and weekly ratio of infection per 100,000 people compared to ratio of reported cases per 100,000 visits.

NB: It is important to draw the reader's attention again to the fact that the information available from some countries is very limited (coming from reported data from a very small number of operators or clubs) and results therefore need to be treated with caution.



Section 3.0 – Data on COVID-19 cases and customer visits to UK facilities – ukactive Research Institute Study

The description of the methods included in Section 3.0 pertains to the collection of data from UK only. The information presented in this section of the report is part of an ongoing data collection and analysis project conducted by the ukactive Research Institute. Data is provided with permission of ukactive Research Institute solely for the purposes of this THiNK Active report.

The ukactive study, from which this data was extracted, aims to provide an anonymised and aggregated reporting mechanism to allow analysis and discussion of sector wide data on COVID-19 cases. The ability to demonstrate the low prevalence of COVID-19 cases within UK fitness and leisure facilities on a weekly basis has allowed ukactive to support the fitness and leisure sector in validating the safety of facilities and the effectiveness of the operating procedures that are in place.

3.1 Data collection methods ukactive study

Data collection commenced in late July 2020, after fitness and leisure facilities in England and Northern Ireland had been permitted to reopen (under certain restrictions). All ukactive operator members were invited to submit metrics through a standardised template on a weekly basis. The metrics included usage (visits by members and non-members) and confirmed COVID-19 cases at their facilities (as notified by NHS Test and Trace or the local authority). The number of visits from Environmental Health Officers was also collected. All data was collected on a regional basis to allow for specific geographical analysis when required. Where necessary, additional metrics were added into the data collection procedure, to include 'high risk' areas and/or to gather additional information on group exercise classes.

3.2 Data analysis

Data was submitted to ukactive on a weekly basis, with submissions aggregated to produce weekly figures on sector wide COVID-19 cases and the case rate per 100,000 visits. The case rate was based on a user making one visit to a facility whilst infected with COVID-19. For contextualisation of the data, the corresponding weekly UK wide COVID-19 rate was calculated using the government published figures on cases by date reported. Whilst a direct comparison cannot be drawn between these two data sets as they use different methodologies, it is useful to present the national rate (per 100,000 population) alongside the facility specific rate (per 100,000 visits) to monitor the change in each over the weeks and to identify if the pattern of cases within facilities across regions is similar to the overall pattern across the UK.

3.3 Data sample

The data presented in this report covers:

- *Over 55 million visits to facilities from the weekend of 25th July 2020 (week 30) to 25th October 2020 (week 43).*
- *Over 2,000 sites in total with a maximum of 1,998 in any single week.*
- *A mixture of facility types including gyms, leisure centres and boutiques.*
- *A mixture of operating models including private multi-site chains, public leisure trusts and independent operators and studios.*
- *This represents approximately 28% of the fitness and leisure sector facilities in the UK (total UK sites from Deloitte EHFM 2020).*

The number of sites submitting started at 1,087 in the first week of the project and has risen to 1,998 as momentum has grown and the power of building a sizeable sector wide data set has been realised. From the end of August, the weekly data set has included over 4 million visits, increasing to over 5 million from the end of September.

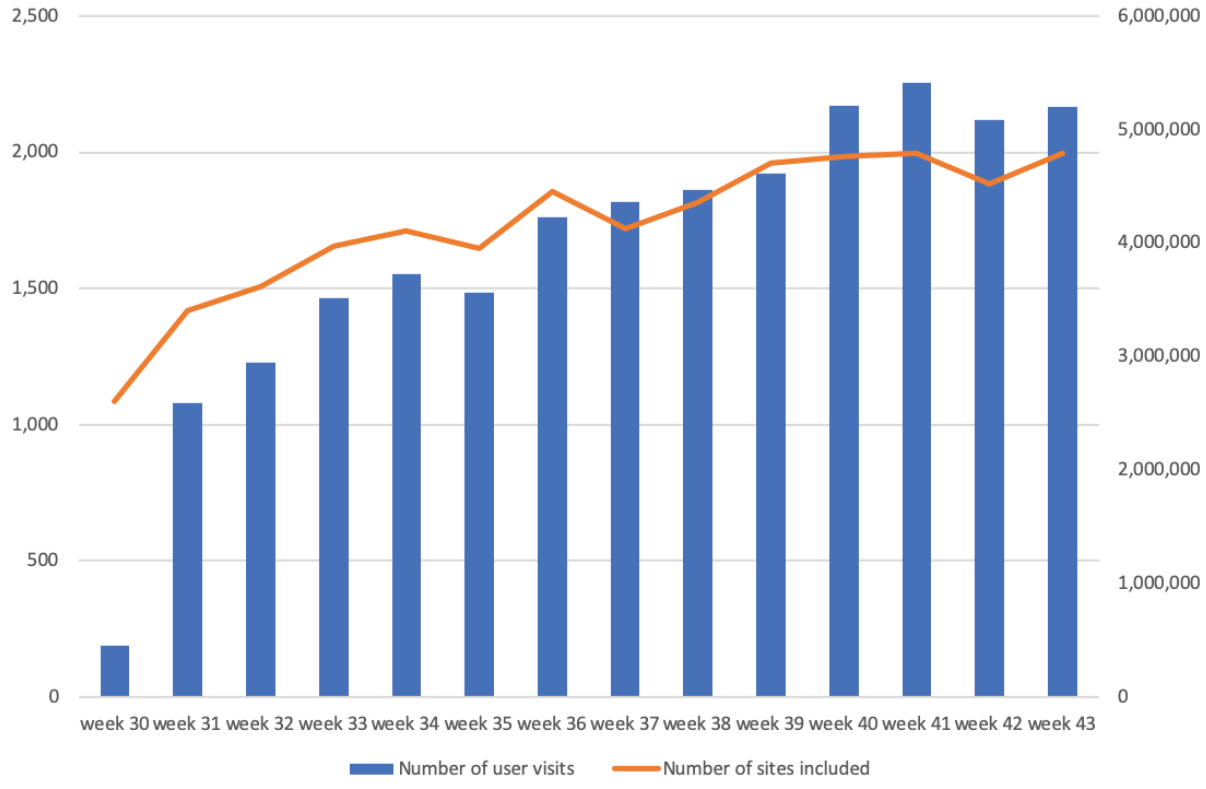


Figure 4.0 – Growth of ukactive COVID-19 database since July 2020

3.4 Results from UK data

Figure 5.0 illustrates the COVID-19 case rate per 100,000 visits for fitness and leisure facilities on a weekly basis since late July. This is based on cases reported by customers only. The case rate is based on a user making one visit to a facility whilst infected with COVID-19. It also shows the case rate for the overall UK population over the same time period. As can be seen, the case rate for the UK population has risen consistently over the time period with a steep acceleration in growth from September onwards.

The UK population case rate has risen from 13.1 cases per 100,000 population in week 31 (w/c 27th July), to 394.9 cases per 100,000 population in week 43 (w/c 19th October). In the same time span, the case rate for COVID-19 cases in fitness and leisure facility users rose from 0.1 cases per 100,000 visits (w/c 27th July) to 3.7 cases per 100,000 visits (w/c 19th October). The increase in the case rate amongst facility users is perhaps understandable as the incidence of COVID-19 in the general population rises. This data demonstrates that whilst the COVID-19 case rate in fitness and leisure facility users has increased in small increments each week, the rate for facility users remains extremely low week on week.

In total from the end of July to the end of October there have been 781 COVID-19 cases from gym users who have visited facilities over this fourteen-week period against a backdrop of 735,398 UK wide cases in the same time.

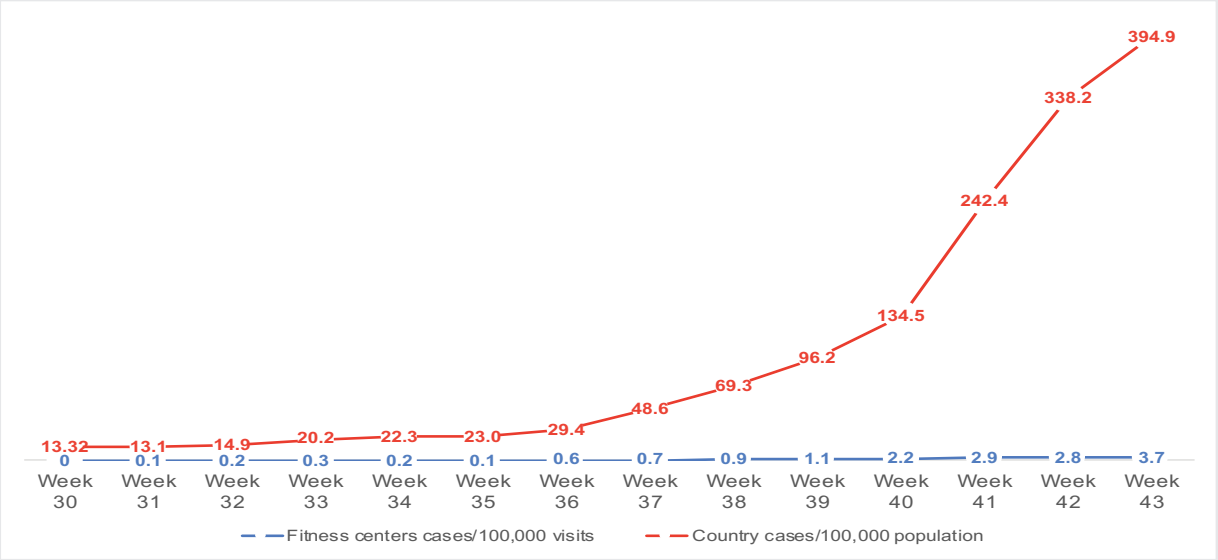


Figure 5.0: COVID case rate per 100,000 visits for fitness and leisure facilities on a weekly basis.

NB The overall UK population case rate shown here is different to that previously reported by ukactive as different data sources have been used which count cases using different methodologies.

The table 8.0 below shows the overall visits, COVID-19 cases, and case rate per 100,000 visits across the fourteen weeks of reported data.

VISITS	Reported COVID-19 cases in members	Rate positive cases/100.000 visits (members only)
55,385,260	781	1.41

Section 4.0 – Fitness club and leisure facility self-reported cases of COVID-19 across mainland Europe and the UK combined

To provide a view of self-reported cases of COVID-19 across mainland Europe and the UK, section 4.0, presents outcomes from a combined dataset (mainland Europe and UK). We obtained data from fitness clubs and leisure centres operators based in the following 14 countries: Belgium, Czech Republic, Denmark, France, Germany, Luxembourg, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Taken collectively, the total sample (mainland Europe and UK data) comprises 4,360 fitness clubs and leisure centres with a total of 115,384,737 visits recorded in the broad open period of operations from 4th May to 25th October (week #19 to week #43 of 2020). This sample represents 6.8% of the total number of fitness clubs and leisure centres across Europe (63,644 centres - EuropeActive, Deloitte, 2020).

As summarized in table 9.0, a total of 115,384,737 visits to fitness clubs and leisure centres from 25 weeks (from week 19 to week 43) are showing a rate of positive reported COVID-19 cases of 1.12/100,000 visits (coming from 1,092 reported cases by members and 196 reported cases by staff).

Table 9.0: Total sample data collected (including data from SafeACTiVE survey platform and ukactive database)

VISITS	Reported COVID-19 cases in members	Reported COVID-19 cases in staff	Rate positive cases/100.000 visits
115,384,737	1,092	196	1.12

Table 10.0 presents a summary of the comparative analysis of number of visits per week (and reported positive cases at fitness clubs, including rate per 100,000 visits) with EU published pandemic data (total numbers of population affected and rate per 100,000 individuals) from the 14 countries participating in the study.

Table 10.0: Total data collected per week in the sample of participant operators from 14 countries (including weekly COVID-19 cases, infection rate per 100,000 population, visits to fitness clubs, reported cases at fitness clubs and reported rate per 100,000 visits)

WEEK	COVID-19 CASES in the 14 countries	Rate/100.000 population	VISITS	Reported fitness club cases	Rate/100.000 visits
Week 19	62,952	16.49	14,475	0	0.00
Week 20	45,250	11.85	119,496	0	0.00
Week 21	39,687	10.40	144,358	0	0.00
Week 22	37,110	9.72	183,274	2	1.09
Week 23	29,545	7.74	423,156	0	0.00
Week 24	30,208	7.91	553,719	5	0.90
Week 25	30,790	8.06	726,438	6	0.83
Week 26	29,246	7.66	1,312,633	6	0.46
Week 27	25,005	6.55	2,086,065	4	0.19
Week 28	23,670	6.20	2,676,000	9	0.34
Week 29	27,689	7.25	2,760,415	9	0.33
Week 30	39,156	10.26	3,743,204	5	0.13
Week 31	48,249	12.64	6,219,875	14	0.23
Week 32	67,566	17.70	6,480,890	21	0.32
Week 33	82,971	21.73	7,062,321	32	0.45
Week 34	102,775	26.92	7,169,537	39	0.54
Week 35	125,397	32.85	6,991,564	34	0.49
Week 36	148,367	38.86	7,618,476	57	0.75
Week 37	188,789	49.45	8,182,940	70	0.86
Week 38	231,149	60.55	8,388,724	81	0.97
Week 39	279,587	73.23	8,326,739	91	1.09
Week 40	308,705	80.86	8,992,300	147	1.63
Week 41	464,657	121.71	8,684,993	218	2.51
Week 42	621,883	162.89	8,355,158	199	2.38
Week 43	690,102	180.76	8,167,987	239	2.93

Figure 6.0 shows the evolution of COVID-19 cases per week considering positive cases (per 100,000 population) in the 14 countries of our study sample, and the reported positive cases at fitness clubs per 100,000 visits.

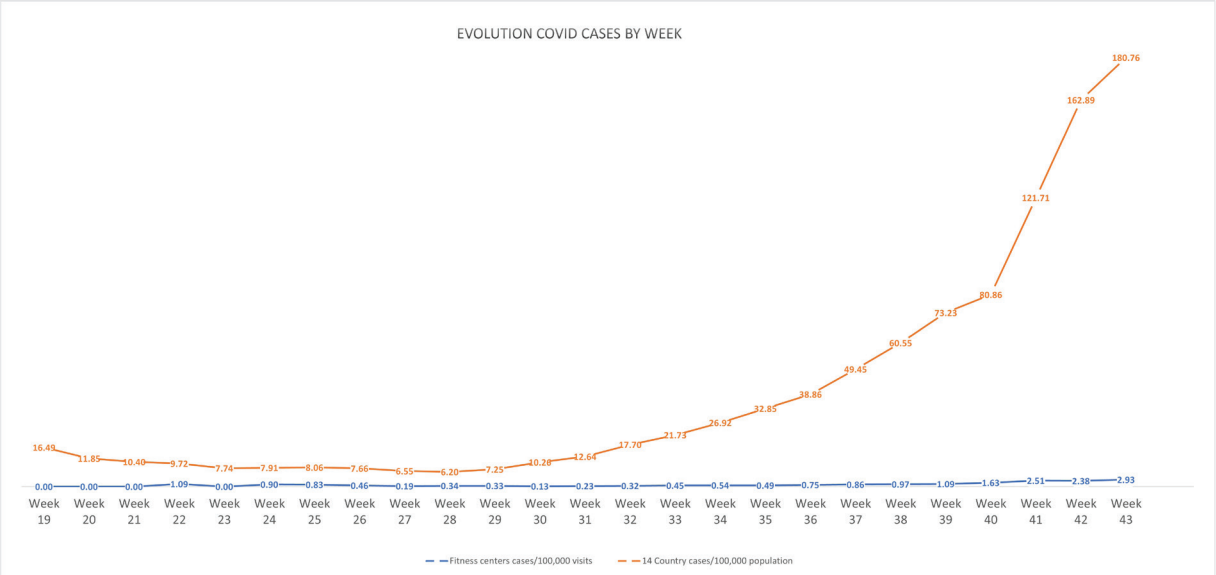


Figure 6.0: Evolution of COVID-19 cases per week considering positive cases (per 100,000 population) in the 14 countries of the study sample, and reported positive cases at fitness clubs (per 100,000 visits)

Section 5.0 – Discussion

This THiNK Active report set out to understand the extent that gyms, fitness clubs and leisure centres - during the COVID-19 pandemic - provide individuals with a safe environment in which to be physically active. This comprehensive report using data from across the health and fitness sector in Europe, explored COVID-19 cases in comparison with the number of visits over a 6-month period. We found the reported incidence rate of positive COVID-19 cases was 1.12 cases per 100,000 visits for the combined SafeACTiVE and ukactive data sets. This was taken from a total sample of 115,3 million visits across 14 countries. This data – albeit self-reported - suggests that fitness clubs and leisure centres (where industry standard mitigation is in place) provide safe public spaces in which to exercise, with very low self-reported cases of COVID-19. What is more, where organisations in the SafeACTiVE Study met or exceeded a 75% compliance rate with industry standards (EuropeActive, 2020), the ratio of positive cases to visits was 22% lower than in those not meeting this threshold.

Data reported in this report is extremely encouraging although perhaps unsurprising, given that previous studies (i.e. ClubIntel Report[37], published 10th October 2020) have shown that European operators report the highest adoption rates (80% to 90%) for health and safety practices in relation to COVID-19 compared to other parts of the world. The ClubIntel Report used an online survey from 556 fitness operators representing more than 7,300 clubs, gyms and fitness studios from across the globe. The report identified that safety practices recommended by health authorities to reduce the risk of COVID-19 exposure were commonly adopted across Europe. Similar results were reported by Fitness Australia in mid-June 2020 from more than 6.26 million check-ins across 423 New South Wales gyms, with no recorded transmission identified[38]. The Fitness Australia data was validated by electronic swipes, used by all members for access, which also provided sophisticated contact tracing should it be required. From the United States, IHRSA and MXM[39] closely examined and compared member check-in data (number of gym visits) between 1st May through to 6th August 2020 from a number of fitness facilities across the country with self-reported infection rates. After nearly 50 million check-ins over that three-month period, the study found that a nominal 0.0023 percent tested positive for COVID-19.

Whilst there is by no means 100% compliance to industry standards, our report adds additional insight into the positive practices to mitigate COVID-19 risk that are currently being implemented across European operators in this sample. Findings here support wider insight on the COVID-19 transmission risk presented by fitness clubs and leisure centres. Data collected by Public Health England using the NHS Test & Trace app suggests that of the 128,808 people who had reported they had tested positive between 9th November and 15th November, only 1.1% had visited a gym before their diagnosis (compared to 18.3% in those who have visited a supermarket)[40]. Similar results, with only 0.28% from 8.488 COVID-19 outbreaks identified

37 ClubIntel. The Fitness Industry's Awakening Post-COVID-19 Facility Closures Report. ClubIntel, October 2020. https://www.club-intel.com/download-whitepaper/?redirectUrl=https://www.club-intel.com/wp-content/uploads/The-Fitness-Industrys-Re-Awakening-Post-COVID-19-Closures.pdf

38 https://www.leisureopportunities.co.uk/news/Check-ins-gyms-New-South-Wales-NSW-Australia-COVID-19-Fitness-Australia-hotspot-Barrie-Elvish/346084

39 https://www.prnewswire.com/news-releases/national-study-confirms-its-safe-to-work-out-at-the-gym-current-data-shows-no-evidence-of-covid-19-spread-in-gyms-301122664.html

40 SkyNews, 19th November 2020. COVID-19: Supermarkets most common places visited before positive test - latest data. PHE collated the data using the NHS Test and Trace app for people who tested positive between 9 and 15 November.

since the reopening of activities after the lockdown were related to the broader area of sports activities, have been reported by the Spanish National Government (Ministry of Health, National Emergency & Alerts Coordination Centre, Report #230, 15th October 2020)[41] underlining the key messages of this report that fitness clubs and leisure centres (where industry standard mitigation is in place) can provide safe environments for people to exercise during the pandemic.

Points to consider

Whilst the data presented herein suggests that fitness clubs and leisure centres can provide safe environments for people to exercise during the pandemic, with low rates of self-reported cases per 100,000 visits across our sample, there are a number of potential explanations for these results that are worthy of brief exploration.

5.1 Creating safe and active environments for all

It is essential to acknowledge the significant efforts that have been made by operators across Europe to create and re-shape the physical environments of their facilities to ensure that they are safe for members of the public during COVID-19. Adherence to the protocols outlined in the EuropeActive guidance for the reopening of fitness facilities (EuropeActive, 2020) will no doubt have contributed to the low numbers of cases we have reported here. Operators have met (or exceed) the existing national guidelines established by their relevant health authorities, implementing up to 51 individual measures designed to protect members and staff during exercise. The sector is to be commended on its efforts in this regard.

5.2 Continuing to deliver on the vision of ensuring equity of access

Keeping people active is essential during the pandemic, especially in light of data suggesting that regular physical activity has a positive impact on immune function and in helping to protect our body from viral infections (Nieman, 2020; Nieman, Wentz, 2019; Jimenez, Mayo, Copeland, 2020[42]). The bigger picture, however, is that COVID-19 has shone a light on the inequalities that exist across our communities and countries and despite the data presented here that fitness clubs and leisure centres are safe for users, we must not take our eye of the greater goal of reducing inequalities and making our facilities and programmes accessible to all. In this regard, it is important to remember the 'inverse prevention law' (Lorenc et al., 2013)[43], which suggests that those in greatest need of benefiting from health enhancing interventions are least likely to receive them. As stated by Lorenc and colleagues (2013), even where interventions

https://news.sky.com/story/COVID-19-supermarkets-most-common-exposure-setting-for-catching-coronavirus-in-england-latest-data-shows-12136418

41 Spanish Ministry of Health, National Emergency & Alerts Coordination Centre. Report Update COVID-19 #230, Incidence and outbreaks report at 15th October 2020. https://www.mscbs.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov/documentos/Actualizacion_230_COVID-19.pdf

42 Jimenez, A., Mayo, X., Copeland, R.J. (2020) "The positive impact of physical activity and exercise on immune function; The critical prevention and recovery tool to fight a second wave of COVID-19". EuropeActive THiNK Active, Brussels. DOI: 10.13140/RG.2.2.20083.96800;

43 Lorenc T, Petticrew M, Welch V, et al. What types of interventions generate inequalities? Evidence from systematic reviews. J Epidemiol Community Health 2013;67:190-193.

are successful at improving health across the population, we must be mindful of their potential to exacerbate health inequalities. The risk of this is particularly high, where intervention is of greater benefit to advantaged (lower-risk) groups than to disadvantaged (higher-risk) groups (Lorenc et al., 2013). We suggest therefore, that governments across Europe, and the health and fitness sector should double their efforts to increase access to activity for all, as we learn to live with COVID-19.

5.3 The potential role of public health messaging and socioeconomic disadvantage

Observed rates for Covid-19 across our sample were low but the data reported by operators whose facilities provided access for 15-17-year-old (see table 5.0) reported higher rates of Covid-19/100,000. This correlates with the population prevalence data by age (Office of National Statistics, UK, 2020)[44], and may reflect that this age group and those slightly older are reported to be less likely to follow social distancing guidelines compared to the general population (Coroiu et al., 2020)[45]. These findings could be explained through a lens of public health messaging. In the UK for example, the public health messages about transmission risk have been confused, particularly with respect to younger age groups. Government messaging in the UK has consistently implied that people in these age groups are not at risk of serious illness or have a lower risk of infection (Davies et al., 2020)[46]. The issue of course is that they can pass it to older family members and others that they come into contact with, and this will help to seed the infection deeper into the wider community, which may suffer more serious consequences of the infection. The key point is that it is hard to comply with health messaging when the reasons for asking people to follow particular restrictions are not clearly set out, and therefore are so confused.

5.3.1 Socioeconomic disadvantage

We report substantially lower rates of Covid-19 in fitness clubs and leisure centres than in the wider population. Some might argue that our results simply reflect the socioeconomic gradient that is emerging for COVID-19, whereby those who typically use fitness clubs on a regular basis tend to come from higher socio-economic communities, hence lower rates (Covid-19 infection rates are disproportionately higher in lower socioeconomic groups (Hawkins, Charles, Mehaffy, 2020[47]; Public Health England, 2020[48])). Furthermore, that the safety and protective

44 Office of the National Statistics UK. Coronavirus (COVID-19) Infection Survey, UK: 4 December 2020. https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/coronaviruscovid19infectionsurveypilot/4december2020

45 Coroiu A, Moran C, Campbell T, Geller AC (2020) Barriers and facilitators of adherence to social distancing recommendations during COVID-19 among a large international sample of adults. PLoS ONE 15(10): e0239795. https://doi.org/10.1371/journal.pone.0239795

46 Davies, N.G., Klepac, P., Liu, Y. et al. Age-dependent effects in the transmission and control of COVID-19 epidemics. Nat Med 26, 1205–1211 (2020). https://doi.org/10.1038/s41591-020-0962-9

47 Hawkins, R.B. Charles, E.J., Mehaffey, J.H. Socio-economic status and COVID-19–related cases and fatalities. Public Health. Volume 189, 2020, Pages 129-134. https://doi.org/10.1016/j.puhe.2020.09.016

48 Public Health England. Disparities in the risk and outcomes of COVID-19. Public Health England., London, August 2020. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908434/Disparities_in_the_risk_and_outcomes_of_COVID_August_2020_update.pdf

anti-COVID-19 protocols and guidance that are in place at fitness clubs and leisure centres in our sample, mean those who attend are further exposed to positive and relevant public health messages on a regular basis. Perhaps reinforcing their commitment to follow current health advice and limit the spread of the virus in some kind of virtuous cycle. Indeed, physical activity, amongst a number of other healthful behaviours, has been frequently shown to be directly related to socioeconomic status (Craike et al., 2018,[49]; Brouard et al, 2020[50]; Jansen et al., 2018[51]). Whilst social gradient might help explain our results, it is essential that we do not approach this through the lens of individual responsibility, stigmatising and blaming people for their apparent 'lifestyle decisions', making the false assertion that people from lower socioeconomic groups somehow have higher rate of Covid-19 infection (and lower physical activity) by choice. It's much easier to make good choices when you have plenty of options, social support, a re-enforcing environment (see previous point about the gym environment) and resources to do so. Instead, the conversation has to be focused on creating the conditions across our communities, and the health and fitness sector, that make it easy for everyone to enjoy better health and wellbeing through physical activity. Indeed, people's health – and physical activity behaviour for that matter - is a consequence of the economic constraints under which they live, that are created by the way that society is constructed and exacerbated by structural inequalities (Rutter, Marshall, Briggs, 2020)[52].

In a recent article with NESTA, Sir Michael Marmot suggested that "if people in the bottom 10 per cent of household income were to follow Public Health England's healthy eating advice, they would spend 74 per cent of their income on food. Should we blame those people for not eating healthily?" (Marmot, 2020)[53]. Covid-19 has shone a light on this and created a set of conditions that mean people from disadvantaged communities are much more likely to be in occupations that require a physical presence and/or are insecure in employment terms. This means a pressure to turn up for work when unwell, as they will not be paid if they don't. People in these circumstances perhaps cannot afford to self-isolate leading to higher rates of transmission in communities they live and work. This creates a stark contrast when set against our data and strengthens the call to address tackling the social, behavioural, economic and environmental inequalities within society that underpin health and activity. The solutions to these causes do not lie in the individual choices of those in the most economically disadvantaged parts of our society.

---

49 Craike, M., Wiesner, G., Hilland, T.A. et al. Interventions to improve physical activity among socioeconomically disadvantaged groups: an umbrella review. Int J Behav Nutr Phys Act 15, 43 (2018). https://doi.org/10.1186/s12966-018-0676-2

50 Brouard, S., Vasilopoulos, P., & Becher, M. (2020). Sociodemographic and Psychological Correlates of Compliance with the COVID-19 Public Health Measures in France. Canadian Journal of Political Science, 53(2), 253-258. doi:10.1017/S0008423920000335

51 Jansen, T., Rademakers, J., Waverijn, G. et al. The role of health literacy in explaining the association between educational attainment and the use of out-of-hours primary care services in chronically ill people: a survey study. BMC Health Serv Res 18, 394 (2018). https://doi.org/10.1186/s12913-018-3197-4

52 Rutter, H., Marshall, L., Briggs, A. Obesity: tackling the causes of the causes. BMJ Opinion, July 2020. https://blogs.bmj.com/bmj/2020/07/30/obesity-tackling-the-causes-of-the-causes/

53 Marmot, M. We don´t want normal, we want better. Health by Design, NESTA, 2020. https://www.nesta.org.uk/feature/health-design/we-dont-want-normal-we-want-better/

5.4 Social and economic impact of ensuring access to health and fitness clubs during a pandemic

The latest data suggests that COVID-19 will have a marked and negative impact on service provision by fitness operators in the short (2020) and medium-term (2021) (EuropeActive, Deloitte, 2020[54]). Indeed, the expected average membership reduction in Europe is estimated to be between 9.9% and 13.9%. This equates to a loss of approximately 6.5 and 9 million memberships in the European Union alone. This reduction in people engaging in healthier, more active lifestyles will perpetuate the burden of disease caused physical inactivity, with the direct and indirect healthcare costs attributable to this reduction estimated at €25,868 million/year in the WHO European region (Ding et al., 2016)[55]. As a consequence of this capacity loss of the fitness industry engaging Europeans in an active behavior, we consider that the health costs related to physical inactivity derived from COVID-19 would increase to around 3,925 million Euro/year.

5.5 Aerosol transmission

The European Centre for Disease Prevention and Control report focusing on heating, ventilation and air-conditioning systems in the context of COVID-19[56], highlights that poor ventilation in confined indoor spaces is associated with increased transmission of respiratory tract infections such as influenza, tuberculosis and rhinovirus infection (Knibbs et al., 2011)[57]. Similarly, the risk of SARS-CoV-2 transmission - including from pre-symptomatic COVID-19 cases - is particularly high in crowded, confined indoor spaces (Lu et al., 2020[58]; Rothe at al., 2020[59]; WHO, 2020[60]) such as workplaces (offices, factories), churches, restaurants, shopping centres, gyms, cruise ships and vehicles (Leclerc, et al., 2020)[61]. There are also indications that transmission can be linked to specific activities, such as gatherings at parties and singing, either in a choir (Hamner et al., 2020)[62] or during religious services- the mechanism being the increased production of respiratory aerosols created through loud speech and/or singing.

---

54 EuropeActive, Deloitte. Quo Vadis? Impact of COVID-19 on the European fitness and physical activity sector, Brussels, 2020.

55 Ding D, Lawson KD, Kolbe-Alexander TL, Finkelstein EA, Katzmarzyk PT, van Mechelen W, Pratt M; Lancet Physical Activity Series 2 Executive Committee. The economic burden of physical inactivity: a global analysis of major non-communicable diseases. Lancet. 2016 Sep 24;388(10051):1311-24. doi: 10.1016/S0140-6736(16)30383-X. Epub 2016 Jul 28. PMID: 27475266.

56 European Centre for Disease Prevention and Control. Heating, ventilation and air-conditioning systems in the context of COVID-19. 10 November 2020. Stockholm: ECDC; 2020.

57 Knibbs LD, Morawska L, Bell SC, Grzybowski P. Room ventilation and the risk of airborne infection transmission in 3 health care settings within a large teaching hospital. Am J Infect Control. 2011 Dec;39(10):866-72.

58 Lu J, Gu J, Li K, Xu C, Su W, Lai Z, et al. COVID-19 Outbreak Associated with Air Conditioning in Restaurant, Guangzhou, China, 2020. Emerg Infect Dis. 2020 Apr 2;26(7).

59 Rothe C, Schunk M, Sothmann P, Bretzel G, Froeschl G, Wallrauch C, et al. Transmission of 2019-nCoV Infection from an Asymptomatic Contact in Germany. N Engl J Med. 2020 Mar 5;382(10):970-1.

60 World Health Organization (WHO). Natural Ventilation for Infection Control in Health-Care Settings [internet]. [updated 4 May 2020]. Available from: https://apps.who.int/iris/bitstream/handle/10665/44167/9789241547857_eng.pdf?sequence=1

61 Leclerc QJ, Fuller NM, Knight LE, Funk S, Knight GM. What settings have been linked to SARS- CoV-2 transmission clusters? Wellcome Open Research. 2020;5(83).

62 Hamner L, Dubbel P, Capron I, Ross A, Jordan A, Lee J, et al. High SARS-CoV-2 Attack Rate Following Exposure at a Choir Practice — Skagit County, Washington, March 2020. Morbidity and Mortality Weekly Report. Surveillance Summaries; 2020. p. 606-10.

A recent study by Chang and colleagues published in Nature (Chang et al., 2020)[63], presented an innovative method for modelling transmission risk in large populations (i.e. US Cities) that combined simple infectious-disease models with human-mobility data obtained from mobile-phone records. The authors looked at broad patterns of human interaction at non-residential locations of interest, for example in venues such as shops, restaurants and places for worship. Chang and colleagues then used these data as parameters in their model to predict the numbers of new cases detected in entire cities each day. Based on US data from 10 big cities (collected from 8th March to 9th May 2020), Chang´s model predicts that in the absence of effective mitigation, infections in venues such as restaurants, gyms and religious establishments have a disproportionally large role in driving up infection rates. What is more, that higher risk of infection is most likely among disadvantaged racial and socioeconomic groups, re-enforcing the inequalities of COVID-19 risk.

It is essential that studies such as Chang, continue to highlight the importance of managing transmission risk across our communities. Encouragingly, our data, based on self-reported cases from across 14 European countries, suggests that the implementation of rigorous strategies to protect the public from COVID-19 transmission – such as those set out in the EuropeActive guidance for the reopening of fitness facilities (EuropeActive, 2020) - do have the potential to mitigate cases. It is therefore the responsibility of the fitness and leisure industry to continue to hold itself to account in delivering safe environments in which people can be active and, find ways to improve access for disadvantaged racial and socioeconomic groups to drive down inequalities.

5.6 Strengths and limitations

This report should be viewed in the light of a number of strengths and limitations. This is the first report to attempt to explore reported cases per number of visits in fitness clubs and leisure centres during COVID-19. The size of sample drawn from the two studies included herein represents a substantial volume of data, with 115 million visits recorded over a 6-month period. The reach of the report is also broad, covering 14 countries and yet the sample only represents 6.8% of the total number of fitness clubs and leisure centres across the continent. We therefore make no strong claims about its representativeness. It is essential to recognise that the data provided was self-reported and it is in the interests of providers to demonstrate their ability to provide safe environments. Our findings should be considered in light of the inherent biases that exist with this form of data. That said, we employed robust data collection methods and our findings are consistent with findings from public health sources and so this should add some confidence in our outcomes. The majority of operators who provided data here were from large organisations whose facilities were over 1000m2 in size. This means that implementing social distancing measures were likely to have been made easier logistically compared to smaller venues. Furthermore, larger operators might have the resources to implement extensive safety measures – such as those set out in the EuropeActive guidance for the reopening of fitness facilities (EuropeActive, 2020) - compared to independents, although we do not have data to substantiate this. What is clear, is that across the industry providers sampled here, there have been significant attempts to implement best practice in reducing COVID-19 cases in venues.

63 Chang, S., Pierson, E., Koh, P.W. et al. Mobility network models of COVID-19 explain inequities and inform reopening. Nature (2020). https://doi.org/10.1038/s41586-020-2923-3

Section 6.0 - Conclusions

We completed an independent evaluation of the number of reported cases of COVID-19 in fitness clubs and leisure facilities across Europe, combining mainland Europe data (collected as part of the SafeACTiVE study) and UK data (collected by the ukactive Research Institute).

We employed robust data collection methods and our findings are consistent with findings from public health sources.

The size of sample drawn from the two studies included in this report represents a substantial volume of data (115 million visits) recorded over a 6-month period. The report is including data from 14 countries, although the sample of participant operators (4,360 organisations) only represents 6.8% of the total number of fitness clubs and leisure centres across the continent. We therefore make no strong claims about the representativeness of our results.

A total of 115,384,737 visits to fitness clubs and leisure centres from 25 weeks (from week 19 to week 43) showed a rate of positive reported COVID-19 cases of 1.12/100,000 visits (coming from 1,092 reported cases by members and 196 reported cases by staff).

We identified significant attempts to implement best practice in reducing COVID-19 cases in venues following industry guidelines.

Our data shows a stable flat trend on reported cases at fitness clubs/leisure centres independently of the evolution of the pandemic across each of the 14 countries included in our sample (considering the collective pandemic situation in these countries or the particular situation in each of them). This flat trend is especially relevant when the second wave of infections arrived across the whole of Europe (see figure 5.0 for reference).

Section 7.0 - References

Brouard, S., Vasilopoulos, P., & Becher, M. (2020). Sociodemographic and Psychological Correlates of Compliance with the COVID-19 Public Health Measures in France. Canadian Journal of Political Science, 53(2), 253-258. doi:10.1017/S0008423920000335

Bull FC, et al. (2020) World Health Organization-WHO Guidelines on physical activity and sedentary behaviour. Br J Sports Med 2020;54:1451–1462. doi:10.1136/bjsports-2020-102955

Chang, S., Pierson, E., Koh, P.W. et al. Mobility network models of COVID-19 explain inequities and inform re-opening. Nature (2020). https://doi.org/10.1038/s41586-020-2923-3

Chow N, Fleming-Dutra K, Gierke R, et al. Preliminary estimates of the prevalence of selected underlying health conditions among patients with Coronavirus disease 2019 — United States, February 12–March 28, 2020. MMWR Morbidity and mortality weekly report. 2020;69(13).

ClubIntel. The Fitness Industry's Awakening Post-COVID-19 Facility Closures Report. ClubIntel, October 2020. https://www.club-intel.com/download-whitepaper/?redirectUrl=https://www.club-intel.com/wp-content/uploads/The-Fitness-Industrys-Re-Awakening-Post-COVID-19-Closures.pdf

Coroiu A, Moran C, Campbell T, Geller AC (2020) Barriers and facilitators of adherence to social distancing recommendations during COVID-19 among a large international sample of adults. PLoS ONE 15(10): e0239795. https://doi.org/10.1371/journal.pone.0239795

Craike, M., Wiesner, G., Hilland, T.A. et al. Interventions to improve physical activity among socioeconomically disadvantaged groups: an umbrella review. Int J Behav Nutr Phys Act 15, 43 (2018). https://doi.org/10.1186/s12966-018-0676-2

Davies, N.G., Klepac, P., Liu, Y. et al. Age-dependent effects in the transmission and control of COVID-19 epidemics. Nat Med 26, 1205–1211 (2020). https://doi.org/10.1038/s41591-020-0962-9

Ding D, Lawson KD, Kolbe-Alexander TL, Finkelstein EA, Katzmarzyk PT, van Mechelen W, Pratt M; Lancet Physical Activity Series 2 Executive Committee. The economic burden of physical inactivity: a global analysis of major non-communicable diseases. Lancet. 2016 Sep 24;388(10051):1311-24. doi: 10.1016/S0140-6736(16)30383-X. Epub 2016 Jul 28. PMID: 27475266.

Du Y, Liu B, Sun Y, Snetselaar LG, Wallace RB, Bao W. Trends in adherence to the physical activity guidelines for Americans for aerobic activity and time spent on sedentary behavior among US adults, 2007 to 2016. JAMA Netw Open 2019;2(7), e197597.

European Centre for Disease Prevention and Control, Communicable disease threats report, 8-14 November 2020, week 46 (https://www.ecdc.europa.eu/sites/default/files/documents/communicable-disease-threats-report-14-nov-2020-public_0.pdf

European Centre for Disease Prevention and Control. Heating, ventilation and air-conditioning systems in the context of COVID-19. 10 November 2020. Stockholm: ECDC; 2020.

EuropeActive (2020). A practical guide to re-opening and operating a fitness facility (e-learning programme). https://www.europeactive.eu/covid19-guidance

EuropeActive & Deloitte. EuropeActive European Health & Fitness Industry Market Report 2020. EuropeActive, Brussels, 2020.

EuropeActive (2020). A practical guide to re-opening and operating a fitness facility (e-learning programme). https://www.europeactive.eu/covid19-guidance

EuropeActive, Deloitte. Quo Vadis? Impact of COVID-19 on the European fitness and physical activity sector, Brussels, 2020.

GBD 2017 Disease and Injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. The Lancet, 392 (2018), pp. 1789-1858.

Guthold R, Stevens GA, Riley LM, Bull FC. Worldwide trends in insufficient physical activity from 2001 to 2016: a pooled analysis of 358 population-based surveys with 1·9 million participants. Lancet Glob Heal. 2018;6:e1077–86.

Hall, G., D.R. Laddu, S.A. Phillips, et al. (2020), A tale of two pandemics: How will COVID-19 and global trends in physical inactivity and sedentary be..., Progress in Cardiovascular Diseases, https://doi.org/10.1016/j.pcad.2020.04.005

Hamner L, Dubbel P, Capron I, Ross A, Jordan A, Lee J, et al. High SARS-CoV-2 Attack Rate Following Exposure at a Choir Practice — Skagit County, Washington, March 2020. Morbidity and Mortality Weekly Report. Surveillance Summaries; 2020. p. 606-10.

Hawkins, R.B. Charles, E.J., Mehaffey, J.H. Socio-economic status and COVID-19–related cases and fatalities. Public Health. Volume 189, 2020, Pages 129-134. https://doi.org/10.1016/j.puhe.2020.09.016

IHRSA, EuropeActive, WFSGI, et al. (2020) Key considerations for sports, fitness, aquatics, thermal facilities/clubs in the context of COVID-19. https://cdn2.hubspot.net/hubfs/167081/Advocacy/Letter%20PDFs/Key%20Considerations%20for%20Sports%20Fitness%20Aquatics%20Ancillary%20Facilities%20Clubs%20in%20the%20Context%20of%20COVID-19_May_2020.pdf

Jakobsson J, Malm C, Furberg M, Ekelund U and Svensson M (2020) Physical Activity During the Coronavirus (COVID-19) Pandemic: Prevention of a Decline in Metabolic and Immunological Functions. Front. Sports Act. Living 2:57. doi: 10.3389/fspor.2020.00057

Jansen, T., Rademakers, J., Waverijn, G. et al. The role of health literacy in explaining the association between educational attainment and the use of out-of-hours primary care services in chronically ill people: a survey study. BMC Health Serv Res 18, 394 (2018). https://doi.org/10.1186/s12913-018-3197-4

Jimenez, A., Mayo, X., Copeland, R.J. (2020) "The Economic and Social Impact of promoting active living after the COVID-19 crisis. The role, value and impact of a proactive and responsible health and fitness industry" . https://www.europeactive.eu/sites/europeactive.eu/files/covid19/Economic-Social-Impact_050620.pdf

Jimenez, A., Mayo, X., Copeland, R.J. (2020) "The positive impact of physical activity and exercise on immune function; The critical prevention and recovery tool to fight a second wave of COVID-19". EuropeActive THiNK Active, Brussels. DOI: 10.13140/RG.2.2.20083.96800;

Kickbusch I, Pelikan JM, Apfel F, Tsouros AD: Health literacy: the solid facts. Copenhagen: The World Health Organization, Regional Office for Europe, 2013.

Knibbs LD, Morawska L, Bell SC, Grzybowski P. Room ventilation and the risk of airborne infection transmission in 3 health care settings within a large teaching hospital. Am J Infect Control. 2011 Dec;39(10):866-72.

Kohl, HW, Craig CL, Lambert EV, et al. The pandemic of physical inactivity: global action for public health. The Lancet 2012;380(9838):294-305.

Leclerc QJ, Fuller NM, Knight LE, Funk S, Knight GM. What settings have been linked to SARS- CoV-2 transmission clusters? Wellcome Open Research. 2020;5(83).

Lee IM, Shiroma EJ, Lobelo F, Puska P, Blair SN, Katzmarzyk PT. Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. Lancet. 2012;380:219–29.

Lorenc T, Petticrew M, Welch V, et al. What types of interventions generate inequalities? Evidence from systematic reviews. J Epidemiol Community Health 2013;67:190-193.

Lu J, Gu J, Li K, Xu C, Su W, Lai Z, et al. COVID-19 Outbreak Associated with Air Conditioning in Restaurant, Guangzhou, China, 2020. Emerg Infect Dis. 2020 Apr 2;26(7).

Malm, C., Jackobson, J., Isaksson, A. Physical Activity and Sports—Real Health Benefits: A Review with Insight into the Public Health of Sweden. Sports 2019, 7, 127; doi:10.3390/sports7050127

Marco CA, Larkin GL. Research ethics: ethical issues of data reporting and the quest for authenticity. Acad Emerg Med. 2000;7(6):691-694. doi:10.1111/j.1553-2712.2000.tb02049.x

Marmot, M. We don´t want normal, we want better. Health by Design, NESTA, 2020. https://www.nesta.org.uk/feature/health-design/we-dont-want-normal-we-want-better/

Morris JN. Exercise in the prevention of coronary heart disease: today's best buy in public health. Med Sci Sports Exerc. 1994;26:807–14.

Nieman DC. Coronavirus disease-2019: A tocsin to our aging, unfit, corpulent, and immunodeficient society. J Sport Health Sci, 2020; 9:293-301.

Nieman, D.C., Wentz, L.M. The compelling link between physical activity and the body's defense system. J Sport Health Sci, 8 (2019), pp. 201-217.

Office of the National Statistics UK. Coronavirus (COVID-19) Infection Survey, UK: 4 December 2020. https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/coronaviruscovid19infectionsurveypilot/4december2020

Ozemek C, Lavie CJ, Rognmo O. Global physical activity levels - need for intervention. Prog Cardiovasc Dis 2019;62(2):102-107.

Patterson R, McNamara E, Tainio M, et al. Sedentary behaviour and risk of all-cause, cardiovascular and cancer mortality, and incident type 2 diabetes: a systematic re- view and dose response meta-analysis. Eur J Epidemiol 2018;33(9):811-829.

Pratt M, Ramirez Varela A, Salvo D, Kohl III HW, Ding D. Attacking the pandemic of physical inactivity: what is holding us back? British Journal of Sports Medicine. 2019:bjsports-2019-101392.

Public Health England. Disparities in the risk and outcomes of COVID-19. Public Health England., London, August 2020. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908434/Disparities_in_the_risk_and_outcomes_of_COVID_August_2020_update.pdf

Richardson S, JS Hirsch, M Narasimhan, JM Crawford, T McGinn, KW Davidson, et al. Presenting characteristics, comorbidities, and outcomes among 5700 patients hospitalized with COVID-19 in the New York City area. JAMA, 323 (2020), pp. 2052-2059

Rothe C, Schunk M, Sothmann P, Bretzel G, Froeschl G, Wallrauch C, et al. Transmission of 2019-nCoV Infection from an Asymptomatic Contact in Germany. N Engl J Med. 2020 Mar 5;382(10):970-1.

Rosenberg D, Cook A, Gell N, Lozano P, Grothaus L, Arterburn D. Relationships between sitting time and health indicators, costs, and utilization in older adults. Prev Med Rep 2015;2:247-249.

Rutter, H., Marshall, L., Briggs, A. Obesity: tackling the causes of the causes. BMJ Opinion, July 2020. https://blogs.bmj.com/bmj/2020/07/30/obesity-tackling-the-causes-of-the-causes/

SkyNews, 19th November 2020. COVID-19: Supermarkets most common places visited before positive test - latest data. PHE collated the data using the NHS Test and Trace app for people who tested positive between 9 and 15 November. https://news.sky.com/story/COVID-19-supermarkets-most-common-exposure-setting-for-catching-coronavirus-in-england-latest-data-shows-12136418

Spanish Ministry of Health, National Emergency & Alerts Coordination Centre. Report Update COVID-19 #230, Incidence and outbreaks report at 15th October 2020. https://www.mscbs.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov/documentos/Actualizacion_230_COVID-19.pdf

Strain T, Brage S, Sharp SJ, Richards J, Tainio M, Ding D, Benichou J, Kelly P. Use of the prevented fraction for the population to determine deaths averted by existing prevalence of physical activity: a descriptive study. Lancet Glob Health. 2020;8:e920–30.

Sun, Y., Q Wang, G Yang, C Lin, Y Zhang, P Yang. Weight and prognosis for influenza A (H1N1) infection during the pandemic period between 2009 and 2011: a systematic review of observational studies with meta-analysis. Infect Dis (Lond), 48 (2016), pp. 813-822

The TRAiN Study Group. Randomized Re-Opening of Training Facilities during the COVID-19 pandemic. https:// www.medrxiv.org/content/10.1101/2020.06.24.20138768v2.full.pdf

ukactive & DataHub. COVID-19 Impact Report. The Fitness and Leisure Sector´s path to recovery. ukactive, London, 2020.

van der Ploeg, H.P., Bull, F.C. Invest in physical activity to protect and promote health: the 2020 WHO guidelines on physical activity and sedentary behaviour. Int J Behav Nutr Phys Act 17, 145 (2020). https://doi.org/10.1186/s12966-020-01051-

Webster, R.K., S.K. Brooks, L.E. Smith, L. Woodland, S. Wessely, J. Rubin. How to improve adherence with quarantine: rapid review of the evidence Publ. Health (2020), 10.1016/j.puhe.2020.03.007

World Bank. 2020. Global Economic Prospects, June 2020. Washington, DC: World Bank. DOI: 10.1596/978-1-4648-1553-9.

World Health Organization. Coronavirus disease (COVID-19) Pandemic. https:// www.who.int/emergencies/diseases/novel-coronavirus-2019. 2020. Accessed 7/30/2020.

World Health Organization. Global Action Plan on Physical Activity (GAPPA): https://www.who.int/ncds/prevention/physicalactivity/global-action-plan-2018-2030/en/

World Health Organization (WHO). Natural Ventilation for Infection Control in Health-Care Settings [internet]. [updated 4 May 2020]. Available from: https://apps.who.int/iris/bitstream/handle/10665/44167/9789241547857_eng.pdf?sequence =1

World Health Organization (2018). Global Action Plan on Physical Activity (GAPPA), 2018-2030: https://www.who.int/ncds/prevention/physicalactivity/global-action-plan-2018-2030/en/

World Health Organization (2013). Global action plan for the prevention and control of noncommunicable diseases 2013-2020. Geneva, 2013.

World Health Survey: Quality Assurance and Guidelines: Procedures for Quality Assurance Implementation by Country Survey Teams and Quality Assurance Advise. Geneva: WHO, 2002.

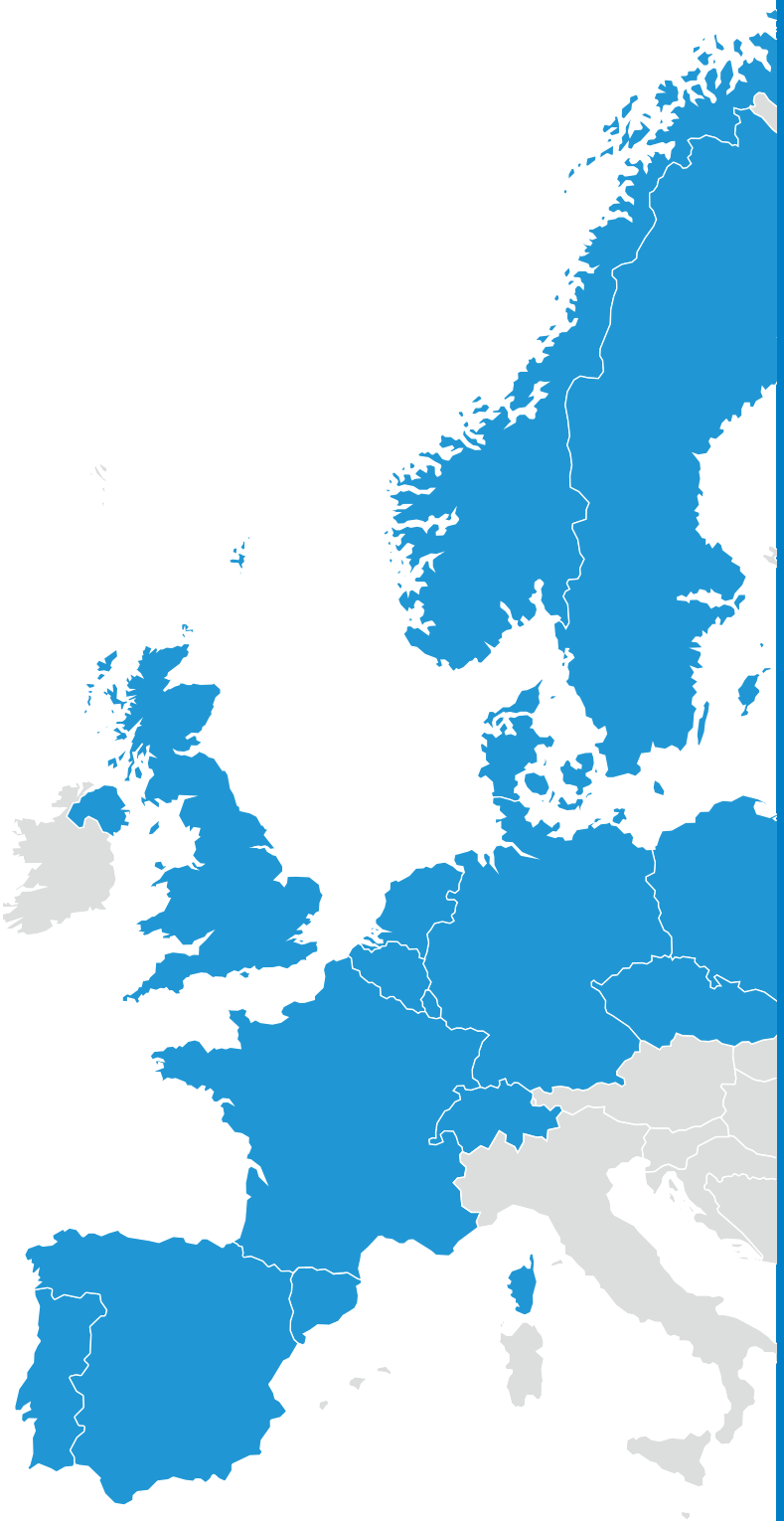
Wu C, X Chen, Y Cai, J Xia, X Zhou, S Xu, et al. Risk factors associated with acute respiratory distress syndrome and death in patients with Coronavirus Disease 2019 pneumonia in Wuhan, China. JAMA Intern Med, 180 (2020), pp. 1-11

Young DR, Hivert MF, Alhassan S, et al. Sedentary behavior and cardiovascular morbidity and mortality: a science advisory from the American Heart Association. Circulation 2016;134(13):e262-e279.

Appendix 1.0

The individual country information is presented in alphabetic order in the following pages.

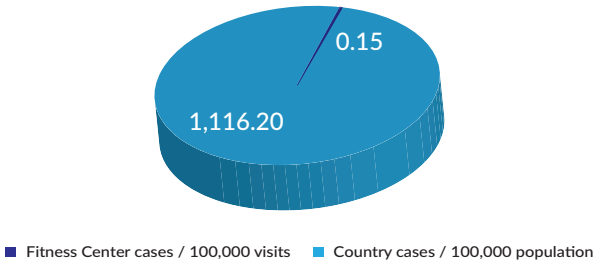
1. BELGIUM
2. CZECH REPUBLIC
3. DENMARK
4. FRANCE
5. GERMANY
6. LUXEMBOURG
7. NETHERLANDS
8. NORWAY
9. POLAND
10. PORTUGAL
11. SPAIN
12. SWEDEN
13. SWITZERLAND
14. UNITED KINGDOM
    see section 3



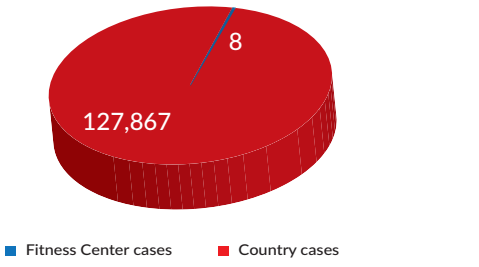
3. BELGIUM

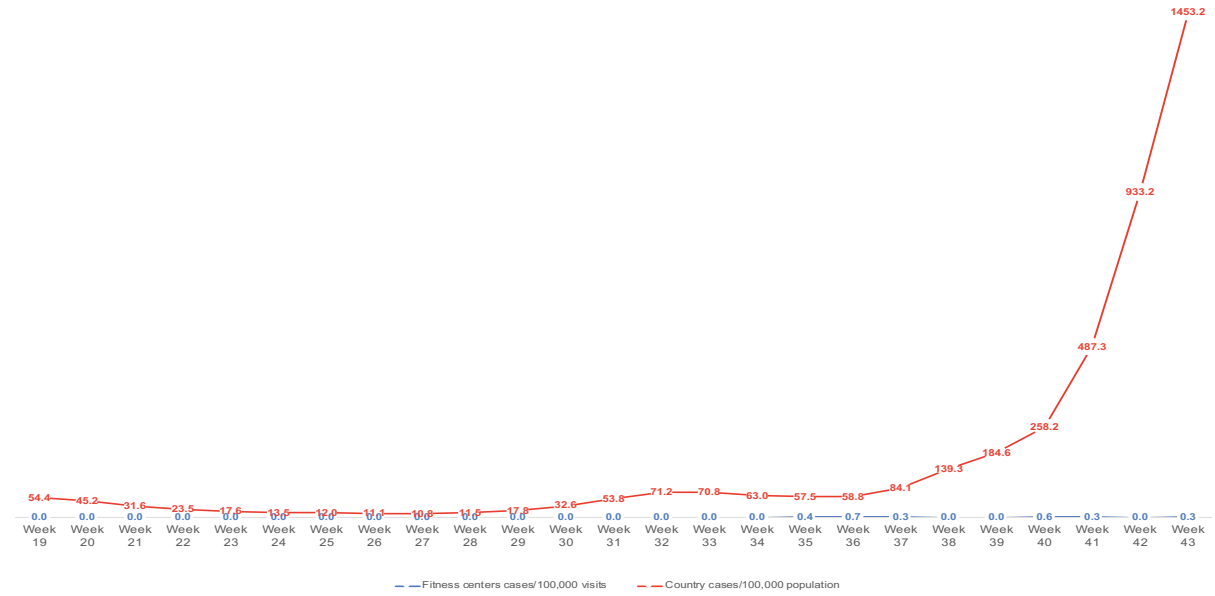
FITNESS CENTRE OPERATORS: BELGIUM (N=1)
TOTAL FITNESS CENTRE VISITS: 5.263.594
STAFF REPORTED COVID CASES: 4
MEMBER REPORTED COVID CASES: 4

COVID CASES /100,000
BELGIUM



COVID CASES from 4 May to 25 October
BELGIUM

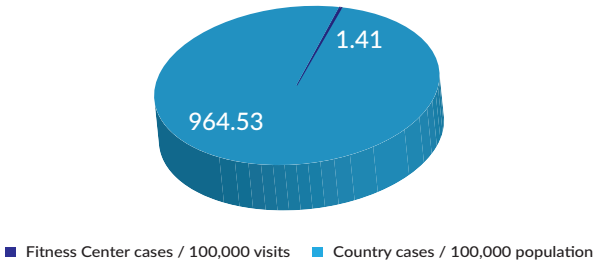




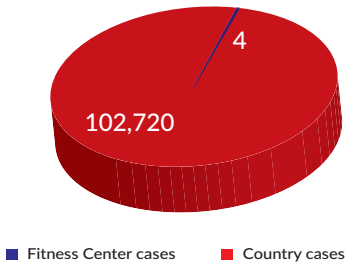
2. CZECH REPUBLIC

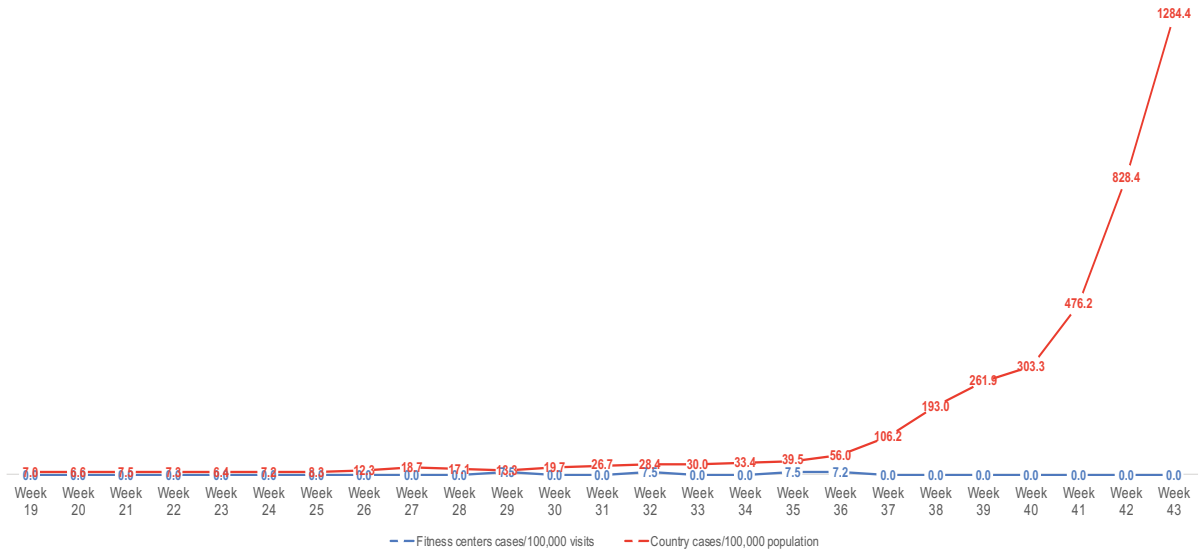
FITNESS CENTRE OPERATORS: CZECH REPUBLIC (N=6)
TOTAL FITNESS CENTRE VISITS: 283.539
STAFF REPORTED COVID CASES: 3
MEMBER REPORTED COVID CASES: 1

COVID CASES /100,000
CZECH REPUBLIC



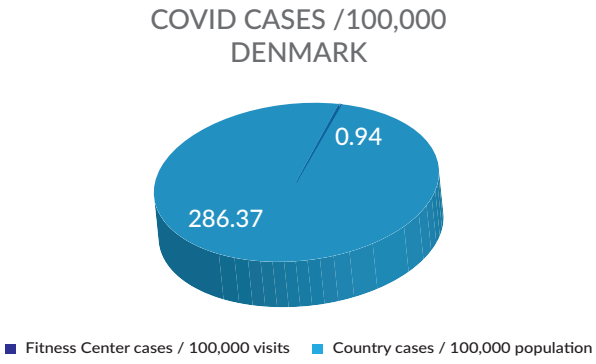
COVID CASES from 4 May to 25 October
CZECH REPUBLIC

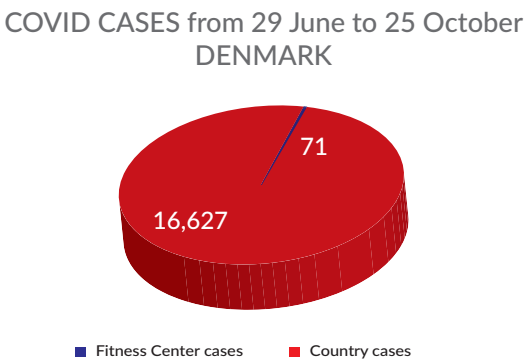


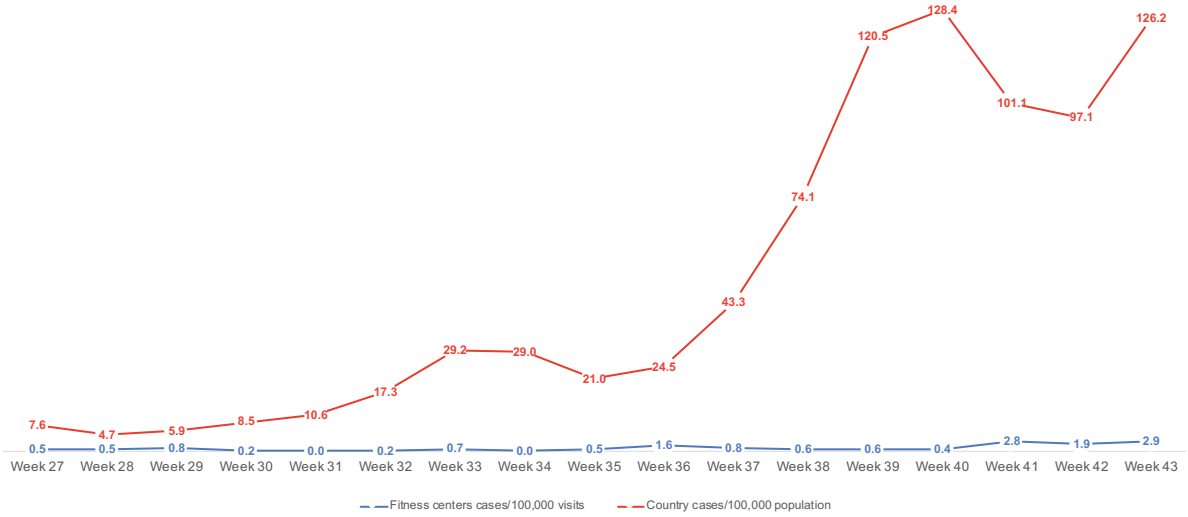


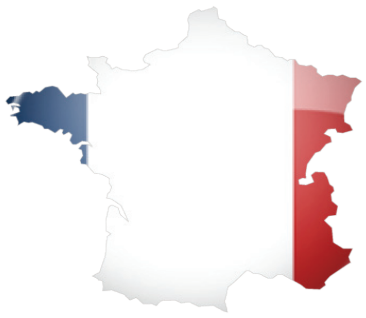
3. DENMARK

FITNESS CENTRE OPERATORS: DENMARK (N=2)
TOTAL FITNESS CENTRE VISITS: 7.584.395
STAFF REPORTED COVID CASES: 20
MEMBER REPORTED COVID CASES: 51





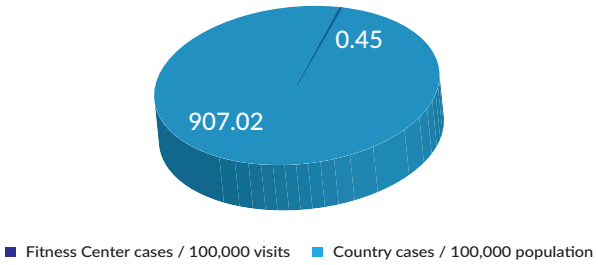




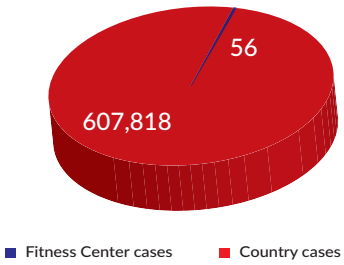
4. FRANCE

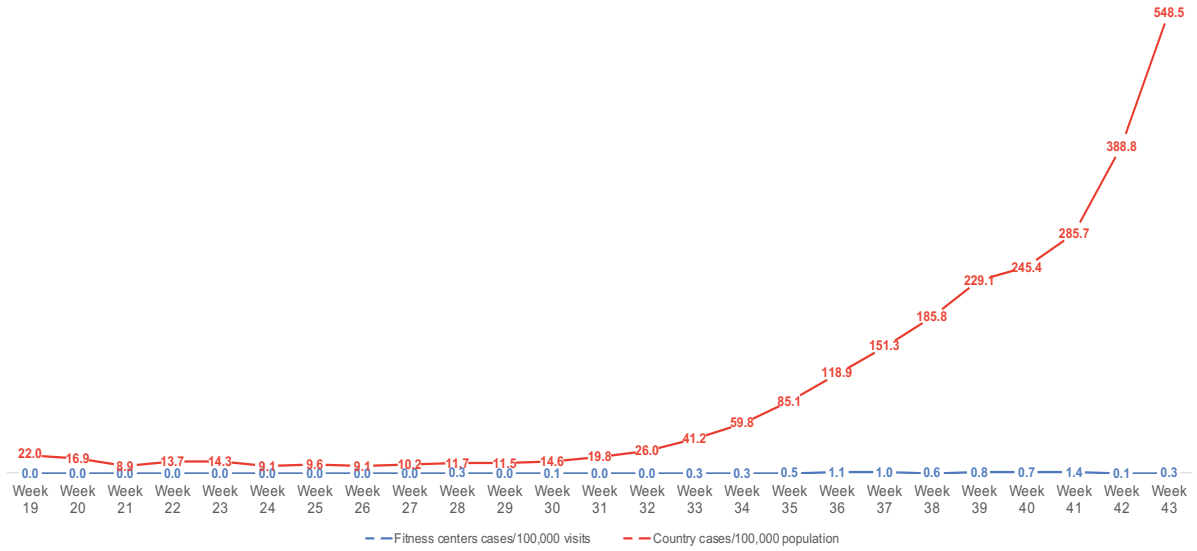
FITNESS CENTRE OPERATORS: FRANCE (N=20)
TOTAL FITNESS CENTRE VISITS: 12.508.588
STAFF REPORTED COVID CASES: 32
MEMBER REPORTED COVID CASES: 24

COVID CASES /100,000
FRANCE



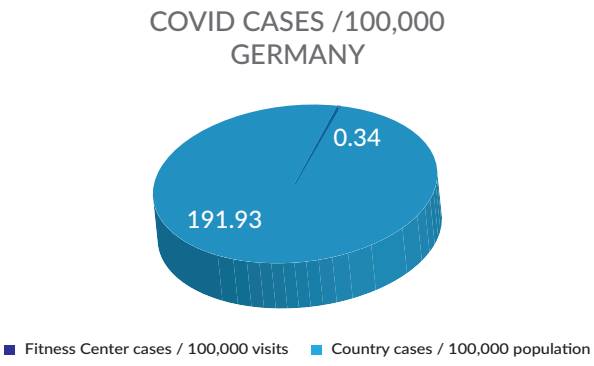
COVID CASES from 4 May to 25 October
FRANCE

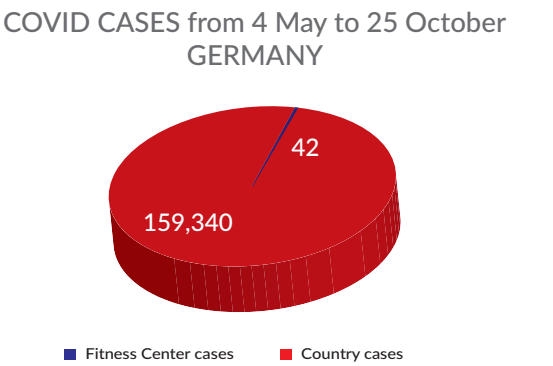


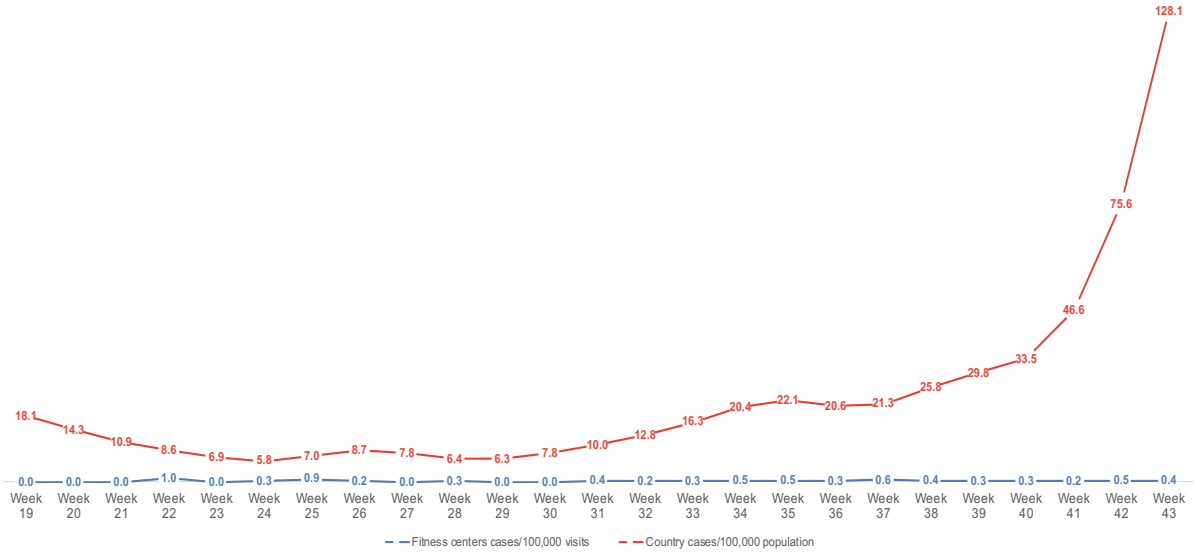


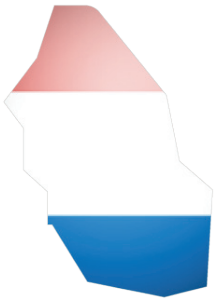
5. GERMANY

FITNESS CENTRE OPERATORS: GERMANY (N=3)
TOTAL FITNESS CENTRE VISITS: 12.534.128
STAFF REPORTED COVID CASES: 10
MEMBER REPORTED COVID CASES: 32





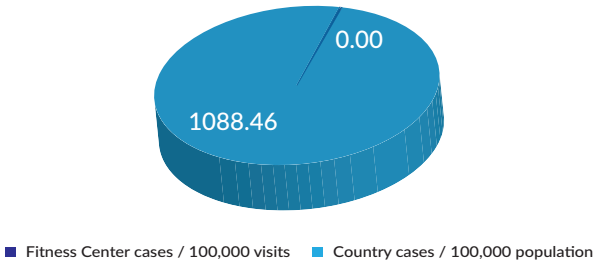




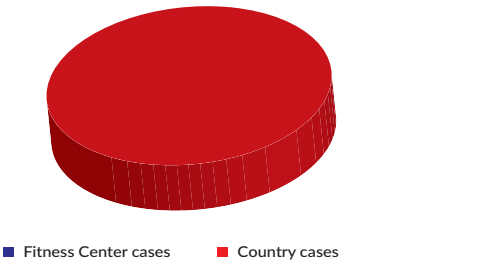
6. LUXEMBOURG

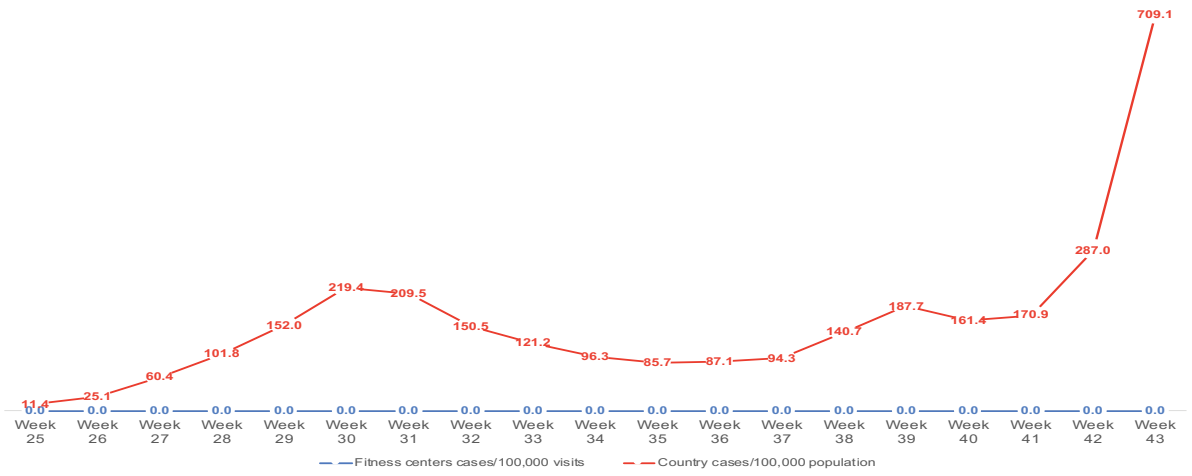
FITNESS CENTRE OPERATORS: LUXEMBOURG (N=1)
TOTAL FITNESS CENTRE VISITS: 327.466
STAFF REPORTED COVID CASES: 0
MEMBER REPORTED COVID CASES: 0

COVID CASES /100,000
LUXEMBOURG



COVID CASES from 15 June to 25 October
LUXEMBOURG

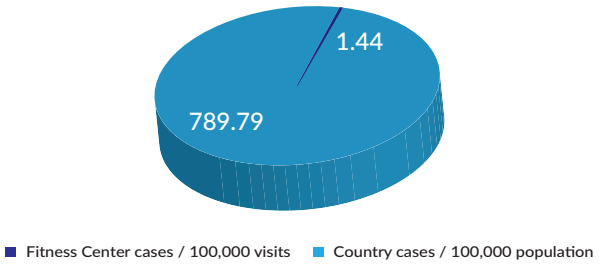




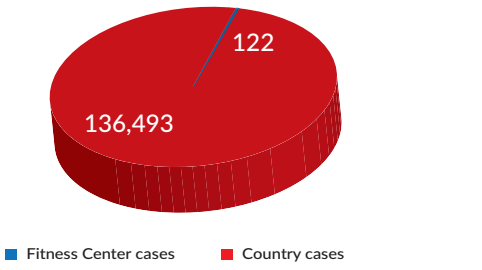
7. NETHERLANDS

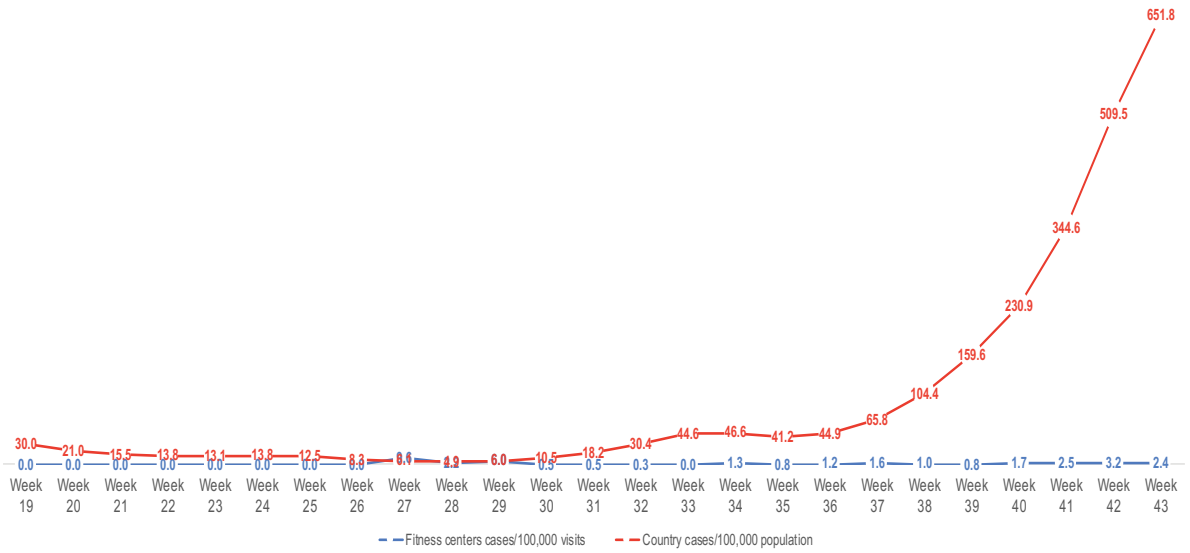
FITNESS CENTRE OPERATORS: NETHERLANDS (N=47)
TOTAL FITNESS CENTRE VISITS: 8.470.644
STAFF REPORTED COVID CASES: 41
MEMBER REPORTED COVID CASES: 81

COVID CASES /100,000
NETHERLANDS



COVID CASES from 4 May to 25 October
NETHERLANDS

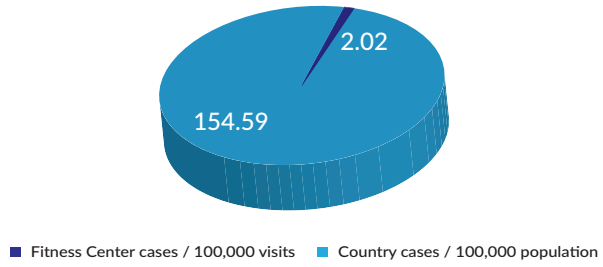




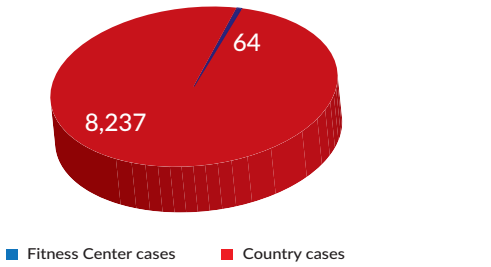
8. NORWAY

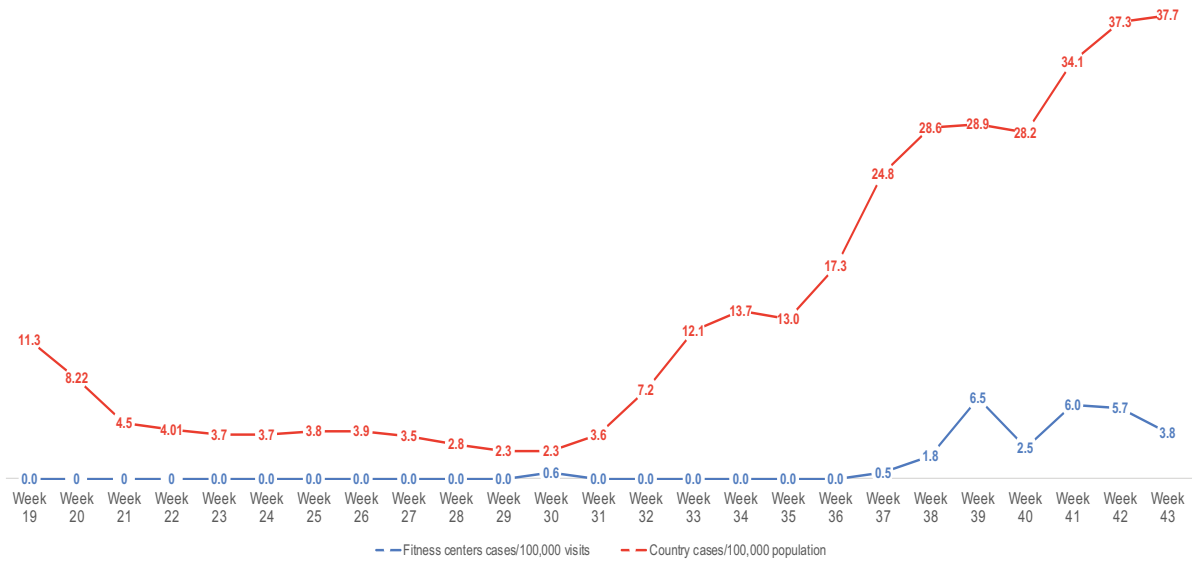
FITNESS CENTRE OPERATORS: NORWAY (N=1)
TOTAL FITNESS CENTRE VISITS: 3.173.030
STAFF REPORTED COVID CASES: 10
MEMBER REPORTED COVID CASES: 54

COVID CASES /100,000
NORWAY



COVID CASES from 4 May to 25 October
NORWAY

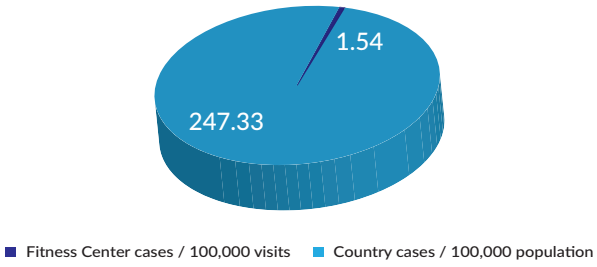




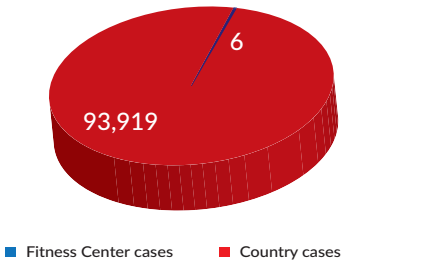
9. POLAND

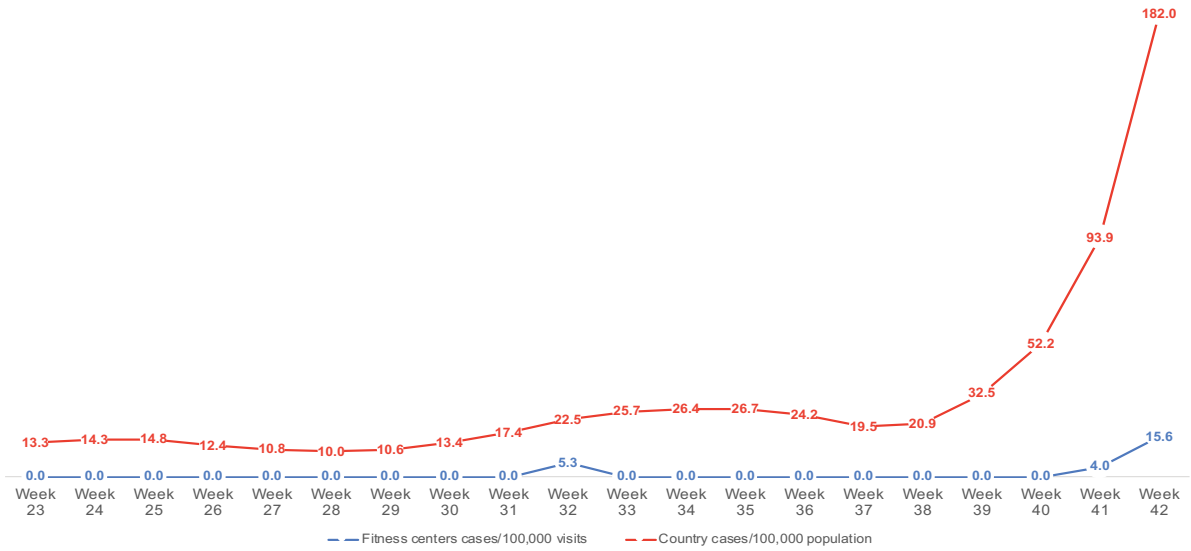
FITNESS CENTRE OPERATORS: POLAND (N=1)
TOTAL FITNESS CENTRE VISITS: 389.661
STAFF REPORTED COVID CASES: 5
MEMBER REPORTED COVID CASES: 1

COVID CASES /100,000
POLAND



COVID CASES from 01 June to 18 October
POLAND

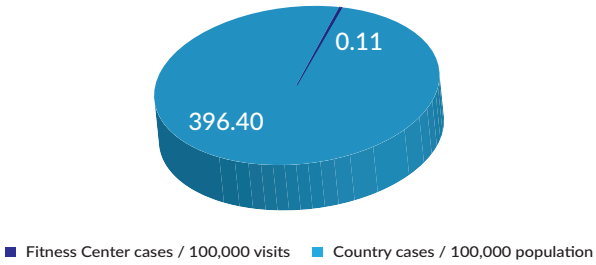




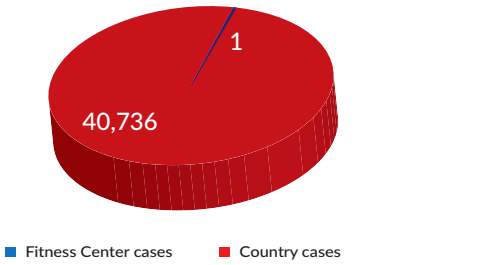
10. PORTUGAL

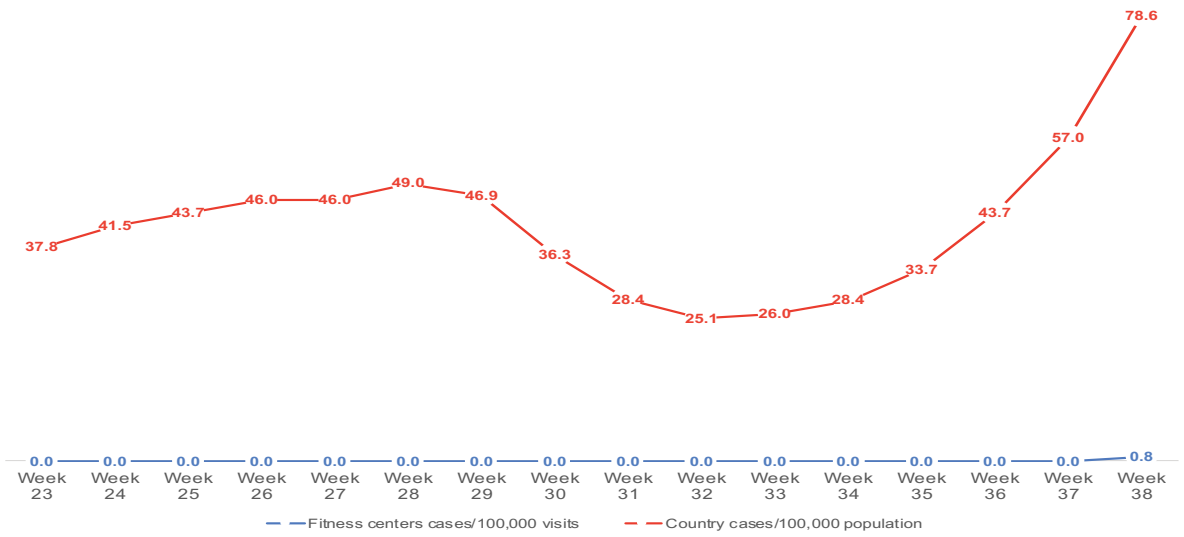
FITNESS CENTRE OPERATORS: PORTUGAL (N=3)
TOTAL FITNESS CENTRE VISITS: 928.833
STAFF REPORTED COVID CASES: 0
MEMBER REPORTED COVID CASES: 1

COVID CASES /100,000
PORTUGAL



COVID CASES from 01 June to 20 September
PORTUGAL

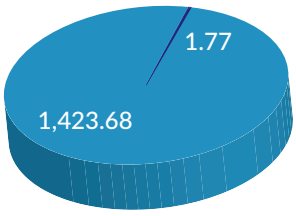




11. SPAIN

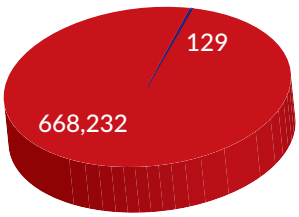
FITNESS CENTRE OPERATORS: SPAIN (N=20)
TOTAL FITNESS CENTRE VISITS: 7.280.189
STAFF REPORTED COVID CASES: 74
MEMBER REPORTED COVID CASES: 55

COVID CASES /100,000
SPAIN

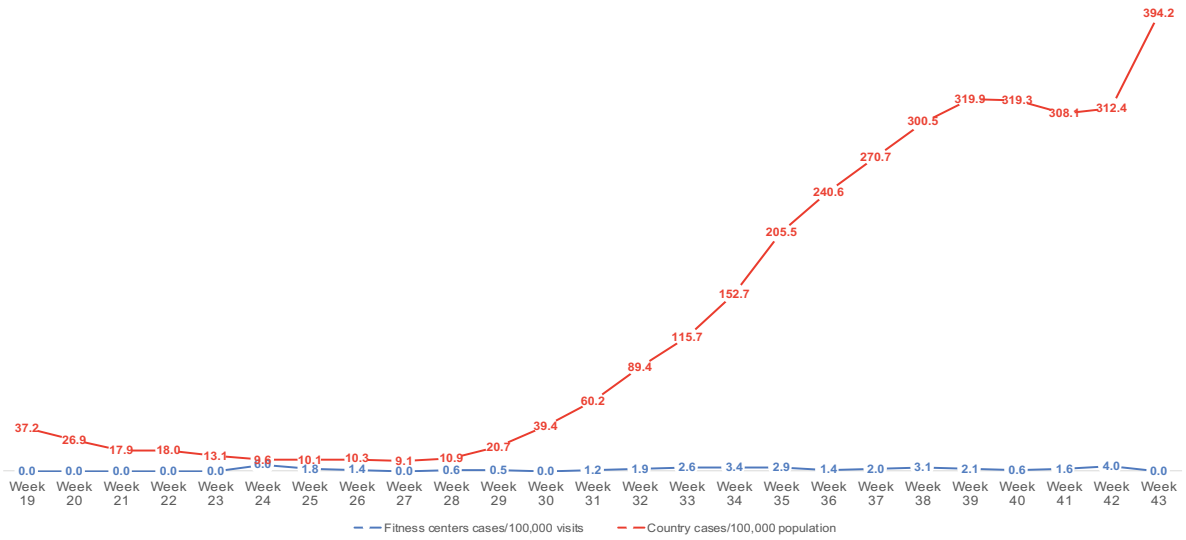


Fitness Center cases / 100,000 visits Country cases / 100,000 population

COVID CASES from 4 May to 25 October
SPAIN



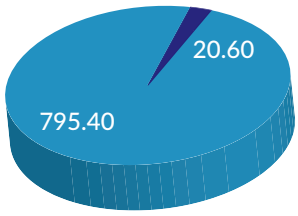
Fitness Center cases Country cases



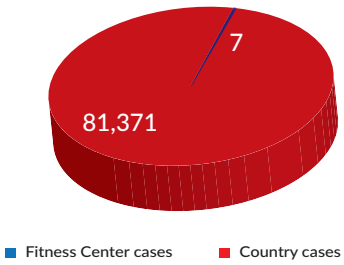
12. SWEDEN

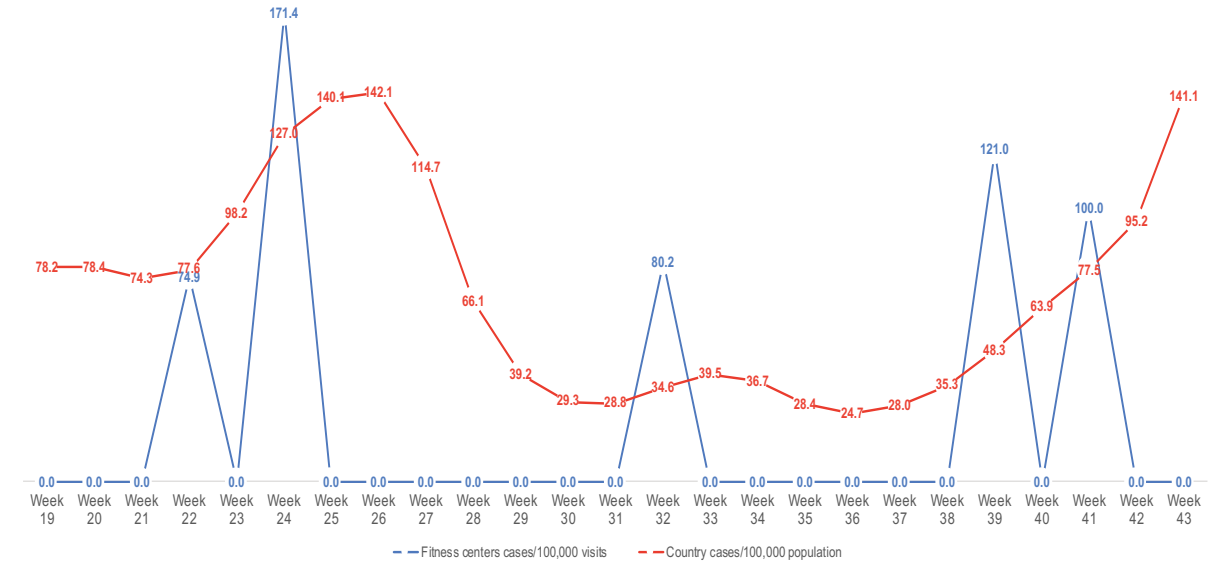
FITNESS CENTRE OPERATORS: SWEDEN (N=2)
TOTAL FITNESS CENTRE VISITS: 33.985
STAFF REPORTED COVID CASES: 0
MEMBER REPORTED COVID CASES: 7

COVID CASES /100,000
SWEDEN

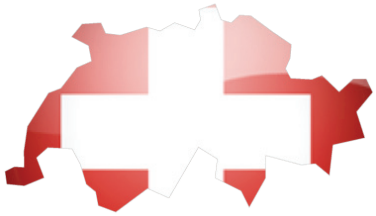


COVID CASES from 4 May to 25 October
SWEDEN



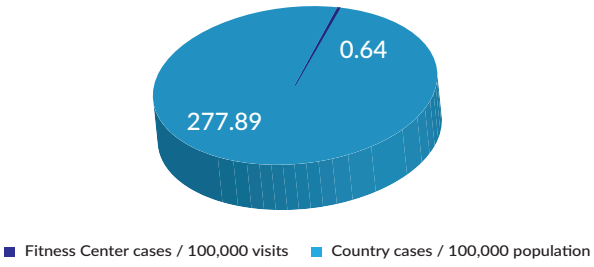


13. SWITZERLAND

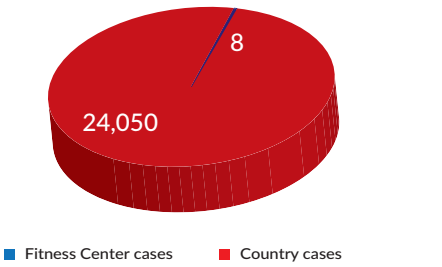


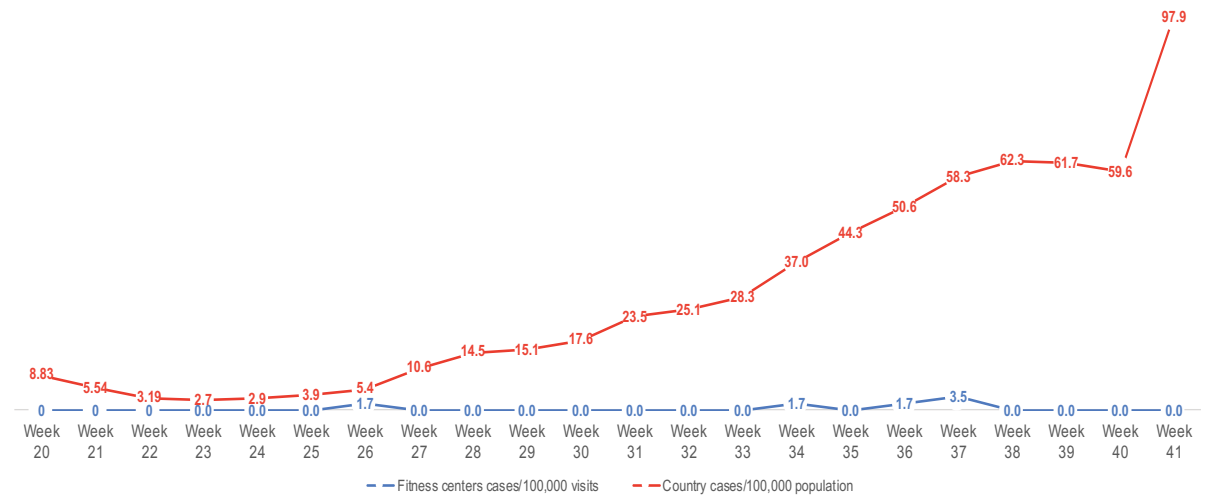
FITNESS CENTRE OPERATORS: SWITZERLAND (N=1)
TOTAL FITNESS CENTRE VISITS: 1.253.557
STAFF REPORTED COVID CASES: 1
MEMBER REPORTED COVID CASES: 7

COVID CASES /100,000
SWITZERLAND



COVID CASES from 11 May to 11 October
SWITZERLAND





THiNK active

EuropeActive's Research Centre

THiNK Active is the new Research Centre for EuropeActive, a unique project to provide evidences and promote best practices for the fitness and physical activity sector across Europe and beyond.

The fitness and physical activity sector is committing resources in the development of evidence-based research supporting its capacity to deliver meaningful and sustainable public health outcomes.

europeactive

MORE PEOPLE | MORE ACTIVE | MORE OFTEN

House of Sport
Avenue des Arts /Kunstlaan 43,
B-1040 Brussels, Belgium
T: +32 (0) 2649 9044

www.europeactive.eu
www.ereps.eu

Supported by:

EXORLIVE how to move! exerp LIFEFITNESS FAMILY OF BRANDS MATRIX myzone TECHNOGYM