

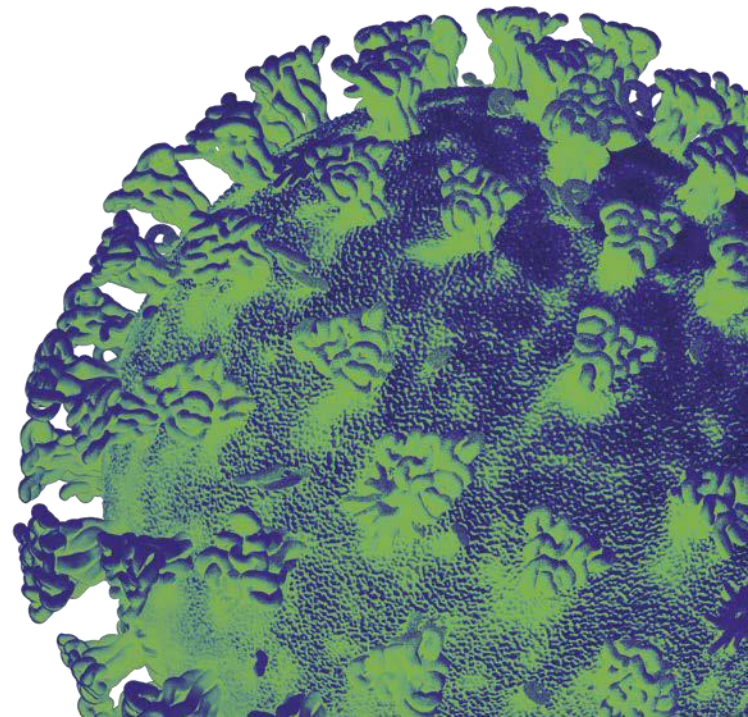
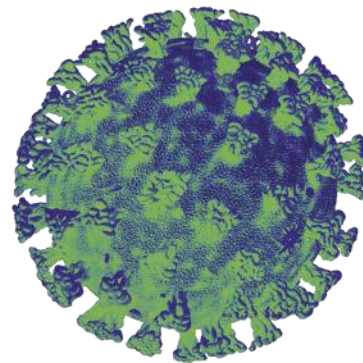
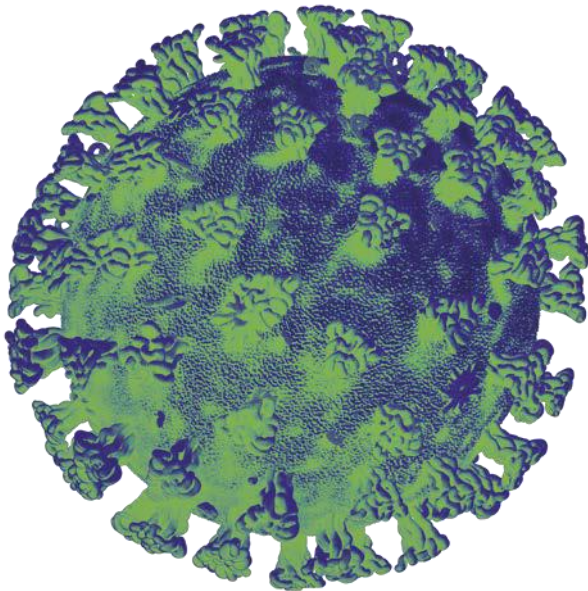


Llywodraeth Cymru
Welsh Government

Science Evidence Advice

Long COVID Update

October 2022



Welsh Government - Science Evidence Advice

Long COVID update October 2022

- **Summary**

The estimated number of people who have experienced long COVID (self-reported) of any duration in Wales is 96,000 people (around 3% of the population), up to the four-week period ending 1 May 2022. The most common symptoms reported by those with the condition are weakness or tiredness and shortness of breath. Research has shown that females are more likely than males to have long COVID symptoms. When looking at UK data, the age group with the most people suffering symptoms were 50 to 69 years, however, there is evidence that the condition is impacting people of all ages. More people living in the most deprived areas have reported having symptoms of long COVID compared to those in the least deprived areas.

The true impact of long COVID on the economy is difficult to quantify but there is some emerging evidence that there are people who are no longer working or taking extended periods of sick leave due to symptoms of long COVID.

Treatment for people with long COVID in Wales has begun with the Adferiad (Recovery) programme. However, the wide range of symptoms associated with long COVID means continued research is required in order to develop effective treatments as we find out more about the condition.

- **Introduction**

According to the National Institute for Health and Care Excellence (NICE) 'Long COVID' is commonly used to describe signs and symptoms that continue or develop after acute COVID-19. It includes both 'ongoing symptomatic COVID-19' (from 4 to 12 weeks) and 'post-COVID-19 syndrome' (12 weeks or more).

'Post-COVID-19 syndrome' has been defined as "Signs and symptoms that develop during or after an infection consistent with COVID-19, continue for more than 12 weeks and are not explained by an alternative diagnosis. It usually presents with clusters of symptoms, often overlapping, which can fluctuate and change over time and can affect any system in the body."

The above NICE definition has remained the same since the previous TAG paper¹ and is similar to the new WHO definition.² However, NICE agreed it was important to also recognise the 'ongoing symptomatic COVID-19' population, with symptoms between 4 and 12 weeks from onset of COVID-19.

Based on available evidence, NICE guidance currently indicates the following might be expected during recovery:

- Recovery time is different for everyone but for **most people symptoms will resolve by 12 weeks**

¹ [Technal Advisory Group: Long-COVID](#)

² [A clinical case definition of post COVID-19 condition by a Delphi consensus, 6 October 2021](#)

- The likelihood of an individual developing ongoing symptomatic COVID-19 or post-COVID-19 syndrome is **not considered to be linked to the** severity of their acute COVID-19 episode (including whether they were in hospital)
- If new or **ongoing symptoms** occur they **can fluctuate**, affecting people in different ways at different times

NICE also indicates that symptoms after acute COVID-19 are highly variable and wide ranging, including (but not limited to) respiratory, cardiovascular, generalised symptoms (e.g. fatigue, fever, pain), neurological symptoms, gastrointestinal, musculoskeletal, ear, nose and throat symptoms, dermatological symptoms and psychological/psychiatric symptoms. Shortness of breath, persistent cough, pain on breathing, palpitations, variations in heart rate and chest pain are less commonly reported in children and young people than in adults.

Modelling conducted by the World Health Organisation (WHO) found that an estimated 17 million people experienced long COVID in the first two years of the pandemic in the European region. As a result, WHO Europe has called on countries to urgently invest in research, recovery, and rehabilitation.³

• **Summary of current position including Office for National Statistics (ONS) data and other studies**

Based on data from the ONS infection survey, in the four-week period ending 4 June 2022, an estimated 96,000 people living in private households in Wales had experienced self-reported long COVID symptoms of any duration (approximately 3.0% of the population). This number has remained the same from data ending 1 May 2022. The estimate for those people who first had (or suspected they had) COVID-19 at least 12 months previously was 41,000 and at least 12 weeks was 72,000 (approximately 1.3% and 2.3% of the population, respectively).⁴⁵

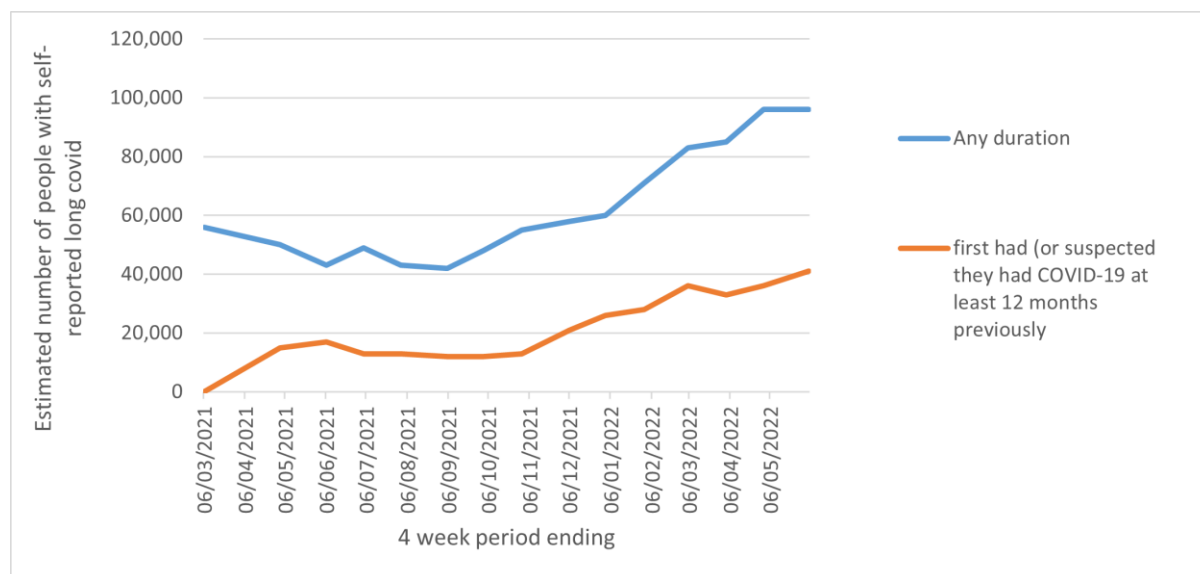
Data in figure 1 shows that the number of people who had experienced symptoms of long COVID after first having (or suspected they had) COVID-19 at least 12 months previously reduced to 33,000 people in April 2022. However, in the most recent data ending 4 June 2022 this number increased above the previous peak (36,000) to 41,000 people.

³ [Covid-19: WHO urges action as 17 million long covid cases are estimated in Europe | The BMJ](#)

⁴ [Prevalence of ongoing symptoms following coronavirus \(COVID-19\) infection in the UK: 7 July 2022](#)

⁵ [Wales population mid-year estimate - Office for National Statistics \(ons.gov.uk\)](#)

Figure 1: Number of people who had experienced symptoms of long COVID after first having (or suspected they had) COVID-19 at least 12 months previously and of any duration



Source: Office for National Statistics

Although the symptoms people who experience long COVID vary, some symptoms are more common than others, this includes weakness or tiredness and shortness of breath. ONS have published data on which symptoms people experience together, grouped in pairs which shows people are likely to have several of the most common symptoms at the same time. The most common pairing of symptoms is weakness/tiredness and shortness of breath (29.54% of people) followed by weakness/tiredness and muscle ache (27.20% of people).⁶

The number of people experiencing long COVID symptoms of any duration in the Wales in the four-week period ending 4 June 2022 was highest in the 50 to 69 years age band (38,000). However, proportionally long COVID is impacting those aged 35 to 49 years, with 5.45% of this age band experiencing symptoms of any duration. The full age breakdown by age band is in table 1 below.⁷

Table 1: Estimated number and percentage of people experiencing long COVID symptoms of any duration by age group in Wales

Age group	Estimated number experiencing long COVID symptoms	Estimated percentage experiencing long COVID symptoms
2 to 16	4,000	0.83%
17 to 34	7,000	1.09%
35 to 49	30,000	5.45%
50 to 69	38,000	4.64%
70+	17,000	3.53%

⁶ [Unweighted counts and percentages of symptom and activity limitation combinations among those with self-reported long COVID, UK: four week period ending 2 October 2021](#)

⁷ [Prevalence of ongoing symptoms following coronavirus \(COVID-19\) infection by duration and age group in Wales: 7 July 2022 - Office for National Statistics \(ons.gov.uk\)](#)

Source: Office for National Statistics

Using data from Round 3 of the COVID-19 Schools Infection Survey (SIS) carried out in England in March 2022, the ONS found that nearly 1 in 50 (1.8%) primary school pupils (years from reception to year 6) and nearly 1 in 20 (4.8%) secondary school pupils (years 7 to 13) had experienced (self-reported) long COVID following their most recent COVID-19 infection. The most prevalent symptoms for both primary and secondary school pupils were cognitive disturbance (23.4% primary, 31.0% secondary) and low mood, worry or anxiety (20.8% primary and 29.3% secondary).⁸

Further research focused on long COVID in children found that the paediatric population's risk factors associated with long-COVID are older age, female gender, severe COVID-19, overweight/obesity, comorbid allergic diseases, and other long-term comorbidities. Protective factors leading to milder severity and duration of COVID-19, and possibly also long-COVID in children, include fewer comorbidities, strong innate immune responses, reduced expression of angiotensin-converting enzyme-2 (ACE2) receptors, and active thymic function, which leads to the increased presence and decreased depletion of T cells. Further protections include a range of environmental or non-inheritable factors such as vaccines, past infections, nutrition, and/or the gut microbiome.⁹

A study from the Netherlands has reported that post-COVID-19 condition might occur in about one in eight people with COVID-19. Similar to other research referenced in this paper, this study found core symptoms of post-COVID-19 condition include chest pain, difficulties with breathing, lump in throat, pain when breathing, painful muscles, heavy arms or legs, ageusia or anosmia, feeling hot and cold alternately, tingling extremities, and general tiredness. This study corrected for individual symptoms present before SARS-CoV-2 infection and for the dynamics of symptoms reported by sex-matched and age-matched controls without infection in the same period during the pandemic.¹⁰

Data from the REACT-2 study, which uses data from random community-based samples of the population in England aged 18 and over, found that 37.7% of people with COVID-19 experienced one or more symptoms at 12 weeks in autumn/winter 2020–2021, and 21.6% in spring 2021. However, the survey round that took place in spring 2021 only included 27 of the 29 symptoms included in the autumn/winter 2020-2021 round. In this study, symptoms of long COVID were reported to reduce rapidly 4 weeks after the onset of symptoms and reduce further up to 12 weeks after, as seen in figure 2. However, the reduction of symptom reporting decreased at a much slower pace between 12 weeks and 22 weeks.¹¹

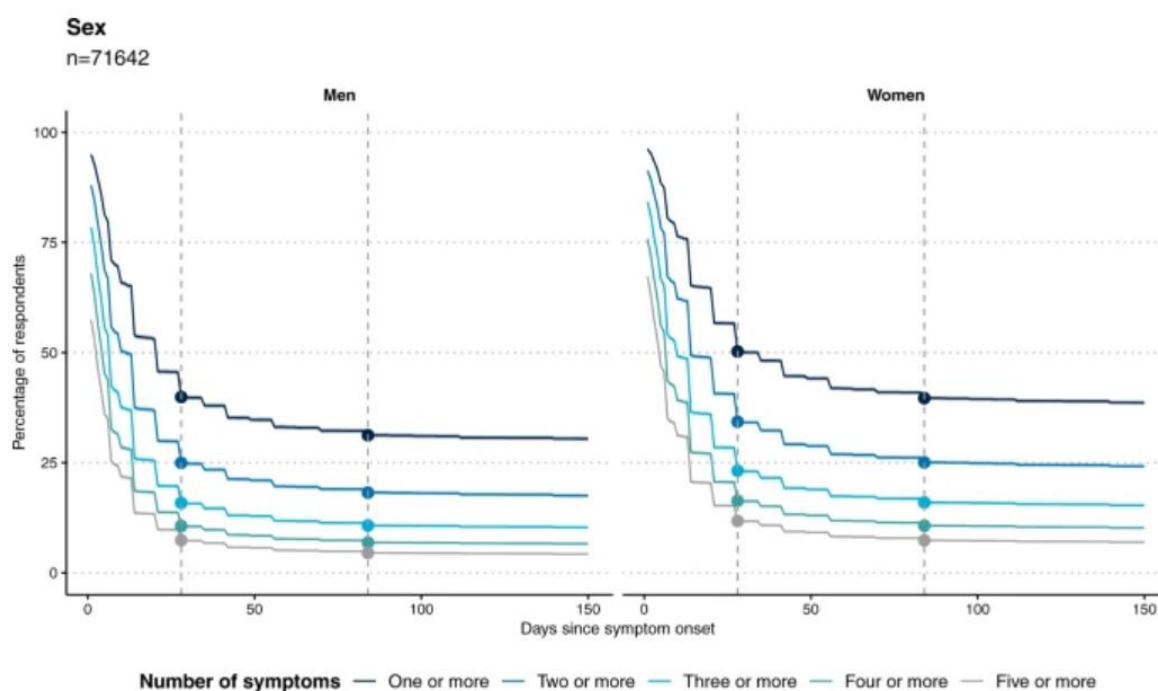
⁸ [COVID-19 Schools Infection Survey, England: long COVID and mental health, March 2022](#)

⁹ [2022 Long Covid in Children adolescents - systematic review and meta-analysis Nature report.pdf](#)

¹⁰ [Persistence of somatic symptoms after COVID-19 in the Netherlands: an observational cohort study - The Lancet](#)

¹¹ [Persistent COVID-19 symptoms in a community study of 606,434 people in England](#)

Figure 2: Persistence of symptoms over time



Source: Nature Communications

Data from the PHOSP (Post-hospitalisation) COVID-19 study, which includes participants in Wales, suggests that 71% of participants did not feel fully recovered at a median of five months follow up after hospital discharge. However, all PHOSP-COVID study participants were hospitalised with COVID-19 and were therefore likely to have generally experienced more severe acute illness.¹²

In a prospective multicentre cohort study of 327 hospitalised participants with SARS-CoV-2 infection who were assessed at least 3 months post-discharge, 55% of participants reported not feeling fully recovered.¹³

Estimates across 10 studies using retrospective reporting of symptom duration following confirmed or suspected infection has been shown to range from 14.5% to 18.1% at four weeks after infection, and 7.8% to 17.0% at 12 weeks.¹⁴

Studies now show minimal differences between the prevalence of long COVID symptoms between hospitalized and non-hospitalized COVID-19 patients.¹⁵

¹² [Physical, cognitive and mental health impacts of COVID-19 following hospitalisation – a multi-centre prospective cohort study](#)

¹³ [Long Covid in adults discharged from UK hospitals after Covid-19: A prospective, multicentre cohort study using the ISARIC WHO Clinical Characterisation Protocol - ScienceDirect](#)

¹⁴ [Risk factors for long COVID: analyses of 10 longitudinal studies and electronic health records in the UK | medRxiv](#)

¹⁵ [Long covid—mechanisms, risk factors, and management](#)

According to the ONS, and confirmed by other data^{16,17} it appears that prevalence of self-reported long COVID was greatest in people aged 35 to 69 years, females, people living in more deprived areas, those working in health care, social care, or teaching and education, and those with another activity-limiting health condition or disability. This indicates that long covid increases socioeconomic inequalities.

- **Extended symptoms with Omicron variant**

Severity in terms of risk of hospital admission and death is reduced by around two thirds with Omicron vs. Delta (this is intrinsic severity, adjusted for vaccination and previous infection).¹⁸ However there is uncertainty about whether this reduced severity will extend to a reduced risk of long COVID.

Of people with self-reported long COVID in the UK, 570,000 (29%) first had (or suspected they had) COVID-19 before Alpha became the main variant; this figure was 237,000 (12%) in the Alpha period, 394,000 (20%) in the Delta period, and 642,000 (33%) in the Omicron period.¹⁹

ONS have also used data from the Coronavirus (COVID-19) Infection Survey (CIS) linked to National Immunisation Management System records to analyse the likelihood of reporting long COVID symptoms four weeks after a first coronavirus (COVID-19) infection compatible with the Omicron BA.1 or BA.2 variants, compared with the Delta variant. These results show self-reported long COVID was less common after infections compatible with the Omicron BA.1 variant than the Delta variant in double-vaccinated study participants, but more common after Omicron BA.2 than Omicron BA.1 infections in triple-vaccinated participants. This research highlights the positive impact vaccines have on the chance of experiencing long COVID symptoms after being infected with any of the variants included in this publication.²⁰

- **Vaccination and Long Covid**

Preventing long COVID

[Risk factors and disease profile of post-vaccination SARS-CoV-2 infection in UK users of the COVID Symptom Study app: a prospective, community-based, nested, case-control study - The Lancet Infectious Diseases](#) - based on reports to a phone app by more than 1.2 million British adults who had received at least one dose of a coronavirus vaccine between December 2020 and July 2021. It found that people who had received two vaccine doses and had breakthrough infections were about half as likely as people who had not been vaccinated to report symptoms lasting at least 28 days after their infection. About 5% of those with breakthrough infections reported such lingering symptoms, the study found, compared with 11% of infected people in an unvaccinated control group.

[Reduced Incidence of Long-COVID Symptoms Related to Administration of COVID-19 Vaccines Both Before COVID-19 Diagnosis and Up to 12 Weeks After | medRxiv](#) (November

¹⁶ [Long Covid in adults discharged from UK hospitals after Covid-19: A prospective, multicentre cohort study using the ISARIC WHO Clinical Characterisation Protocol - ScienceDirect](#)

¹⁷ [One in 20 people likely to suffer from 'Long COVID', but who are they?](#)

¹⁸ <https://www.imperial.ac.uk/mrc-global-infectious-disease-analysis/covid-19/report-50-severity-omicron/>

¹⁹ [Prevalence of ongoing symptoms following coronavirus \(COVID-19\) infection in the UK: 7 July 2022](#)

²⁰ [Self-reported long COVID after infection with the Omicron variant in the UK: 6 May 2022](#)

2021) - found a similarly encouraging result. This study analysed records of about 240,000 patients infected with the coronavirus by May 2021. It found that people who had received even one dose of a COVID vaccine before their infection were seven to 10 times less likely to report two or more symptoms of long COVID 12 to 20 weeks later. The study also found that people who received their first vaccine dose after contracting the coronavirus were less likely to develop long COVID than those who remained unvaccinated, and the sooner they were vaccinated after infection, the lower the risk of long-term symptoms.

[Six-month sequelae of post-vaccination SARS-CoV-2 infection: a retrospective cohort study of 10,024 breakthrough infections | medRxiv](#) (October 2021, not yet peer-reviewed) results from this research were more discouraging about the ability of vaccines to prevent long COVID. The study was conducted by researchers in the United Kingdom who analysed electronic medical records of patients in the United States. It compared about 10,000 people who had received COVID vaccines with a similar number of people who had not been vaccinated against the coronavirus but did have a flu vaccine — an effort to limit the number of people in the study who might be considered vaccine hesitant or who generally had less healthy behaviours.

The study found that having a coronavirus vaccine before being infected did not reduce the risk of most symptoms of long COVID. There was some suggestion from the data that vaccinated people might be at lower risk of long-term issues like abnormal breathing and cognitive symptoms, the authors wrote, but those results were not statistically conclusive. The authors said it was possible that because their data relied on electronic health records, the study might have captured only patients with the most severe symptoms, rather than a wider range of patients who did not seek medical attention for their symptoms.

Vaccination if experiencing 'Long COVID'

[Coronavirus \(COVID-19\) vaccination and self-reported long COVID in the UK - Office for National Statistics \(ons.gov.uk\)](#) – people ages 18 to 69 who reported their symptoms between February and September 2021, a first dose of a vaccine lowered the odds of reporting long COVID symptoms by 13%. A second dose further lowered the odds by 9%.

Based on the available evidence at the time²¹, NICE guidance²² currently recommends vaccination to reduce the risk of acute infection, however states that it is not certain if vaccines have any effect on ongoing symptomatic COVID-19 or post-COVID-19 syndrome.

Emerging preprint evidence (see below) adds to the body of evidence suggesting that vaccination may have a protective effect against 'Long COVID'.

[PREPRINT: Association between vaccination status and reported incidence of post-acute COVID-19 symptoms in Israel: a cross-sectional study of patients tested between March 2020 and November 2021](#)

This study examines the effectiveness of COVID-19 vaccines against long-COVID symptoms and whether vaccination was associated with the incidence of reporting long-term symptoms.

Of those COVID-positive survey participants, 637 (67%) were vaccinated. The most commonly reported symptoms were; fatigue (22%), headache (20%), weakness (13%), and persistent muscle pain (10%). After adjusting for follow-up time and 'baseline' symptoms,

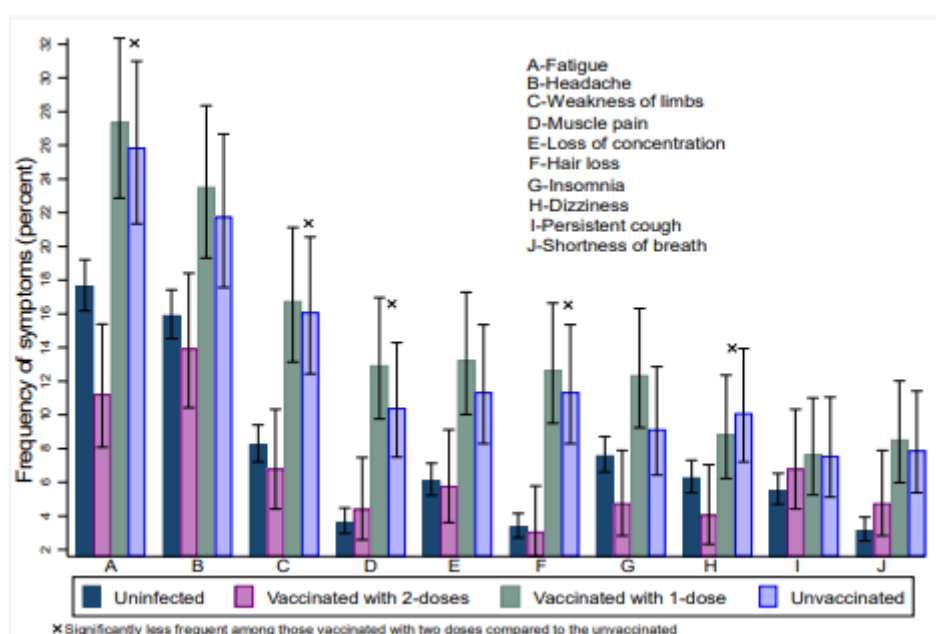
²¹ [Risk factors and disease profile of post-vaccination SARS-CoV-2 infection in UK users of the COVID Symptom Study app: a prospective, community-based, nested, case-control study - PubMed \(nih.gov\)](#)

²² [Guideline COVID-19 rapid guideline: managing the long-term effects of COVID-19 \(nice.org.uk\)](#)

those who received two vaccine doses were less likely than unvaccinated individuals to report any of these symptoms by 64%, 54%, 57%, and 68% respectively. Strikingly, those who were infected and received two doses were no more likely to report any of these symptoms than individuals reporting no previous COVID-19 infection (figure 3).

These results suggest that, in addition to reducing the risk of acute illness, COVID-19 vaccination may have a protective effect against long COVID. Commonly reported post-acute COVID-19 symptoms are not specific to COVID-19 and are commonly reported regardless of infection status. It is not therefore expected that any group would report zero incidence of such symptoms. However, the absence of difference in symptoms-frequency among those who received two doses and those who were never infected suggests the excess reporting of these symptoms associated with COVID-19 infection in unvaccinated individuals is eliminated by vaccination.

Figure 3: Frequency of most reported symptoms among the uninfected, the vaccinated and the unvaccinated



Source: MedRxiv

• **Wales COVID-19 Evidence Centre (WCEC) – rapid evidence reviews**

The WCEC have published a paper titled 'What is the cost impact of Long COVID on employment and caring responsibilities?'.²³ The focus of this paper is a Belgian study based on sample of patients with Long COVID from 27th January 2021 to 14th February 2021 (Castanares-Zapatero et al., 2021). The sample of patients had either been previously infected with COVID-19 (self-reported or based on a positive test) or had Long COVID symptoms at the time of patient recruitment. More than 80% of respondents (n=1,076) were in paid employment before being infected with SARS-COV-2 and 30% were working in a healthcare centre (38% of which were nurses). The main findings included:

²³ [What is the cost impact of Long COVID on employment and caring responsibilities?](#)

- Overall, 33.5% of respondents returned to work in the same capacity as before contracting acute COVID-19. 26.2% restarted on a part-time basis and 38% did not return to their job because of their health status. The percentage of respondents who could not resume work because of their health status was higher amongst hospitalised patients (43% of the 38% who did not return to work) than non-hospitalised (39.9% of the 38% who did not return to work).
- Patients with short symptom duration (1 - 3 months) were the highest proportion to not return to work (50.9%), compared to long symptom duration (more than 6 months) (36.8%) and medium symptom duration (3 - 6 months) (33.9%).

In addition, the WCEC have also published 'What is the cost impact of demands due to Long COVID on NHS and social care services? A rapid evidence summary'.²⁴ The bottom line of this paper states 'It is unclear what the definite costs of demands due to Long COVID on the NHS and social care services are, due to a lack of evidence. However, individual health boards can model costs by creating multidirectional treatment pathways that are responsive to changes in symptoms including standardised assessment and diagnostic testing, referral to secondary care, follow-up, and virtual and home-based care. Although one study outlines what the UK Government would be willing to pay to avoid loss of QALYs due to Long COVID, further research would be required to determine how these funds should be allocated and which regions require them, and what works to avert long COVID (Martin et al., 2021)'.

There is also work that has commenced with the WCEC to evaluate the effect of COVID-19 on quality of life, to inform modelling around morbidity.

• **Wales-specific research and data**

The Adferiad (Recovery) programme²⁵ was set up to diagnose, treat, rehabilitate and support those suffering from long-COVID in Wales. A six-monthly review cycle is embedded in the programme to ensure the service response is agile as new information and intelligence emerges.

All health boards in Wales provide integrated, multi-professional rehabilitation services for people with long-Covid and refer people to specialist care services wherever needed. The review of the programme assessed information provided by health boards and feedback from almost 600 people who had accessed long-COVID services in Wales.

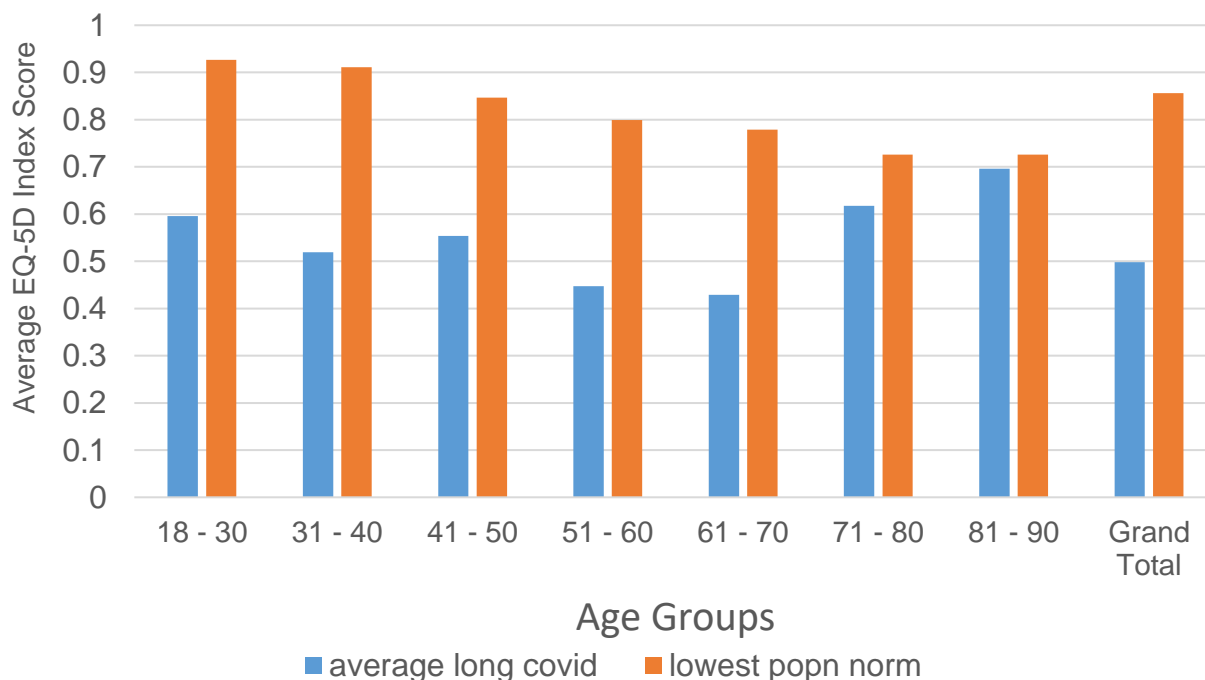
Initial analysis of health-related quality of life (HRQoL) data from around 590 people accessing the Adferiad programme suggests that average health-related quality of life for this population (using EQ-5D-5L survey) is much lower than the general population of the same age, indicating a lot of health problems impacting on day-to-day life. We do not have longitudinal data to know what people's health status was before COVID, but qualitative research suggests that many people were in good health. Lower EQ-5D Index Scores (poorer health) were significantly linked with being admitted to hospital; depression/anxiety; and reporting being long term sick or disabled. For those admitted to hospital, their EQ-5D Index Score was lower the longer they stayed in hospital, with lowest scores for staying between 6-10 days. These results may not be generalizable to the whole long COVID population, due to sample size, age distribution and timing of diagnosis/ time in services.

²⁴ [What is the cost impact of demands due to Long COVID on NHS and social care services? A rapid evidence summary](#)

²⁵ [Adferiad \(Recovery\) long COVID programme](#)

Work is underway to look at a bigger sample of data and to understand longitudinal trends to see if health improves or stabilises after people access the Adferiad programme.

Figure 4: Average EQ-5D index scores for Adferiad service users, compared with UK population norms for the same age groups. EQ-5D score of 1 indicates full health.



Note: UK population norms from Szende, Janssen et al, 2014²⁶. UK norms are for EQ-5D-3L (3 level) whereas Adferiad data is based on EQ-5D-5L (5 level). Lowest UK population norms in each age group were used as age groups were not the same in the two datasets.

The 'Inspiratory Muscle Training (IMT) post COVID-19 recovery study' has also been set up by Swansea University to address patient recovery from the impact of COVID-19 for example, shortness of breath and fatigue. The aim of the study is to assist patients to re-train respiratory muscles to improve breathing technique thereby alleviating suffering of the patient and pressure on the NHS through potential re-admission to hospital.

- Of the 2,431 recorded cases of people with long-COVID via GP systems in Wales, 2,226 have accessed Adferiad services.
- Of those in contact with the Adferiad programme, around 3.5% of people with long-COVID were referred to secondary care services.
- The NHS Wales COVID Recovery App was commissioned at the end of January 2021. In less than 6 months there have been 6000 downloads - 96% of these are confirmed Welsh residents, representing 87% of all GP practices in Wales.
- Less than 27% of people with long-COVID had been hospitalised with COVID-19.
- The Covid Recovery App has been an effective digital tool to help people manage their condition.
- The majority of people who took part in the review said they felt their concerns were listened to and they were supported to get the help and information they needed.
- More than 70% rated their experience of the service above average and more than 87% would recommend the service.

²⁶ [Self-Reported Population Health: An International Perspective based on EQ-5D \[Internet\] - PubMed \(nih.gov\)](#)

- People responding to the national patient evaluation, undertaken by CEDAR who used long-COVID services, reported an improvement in their health outcomes and were satisfied with their experience.
- So far very few children have presented with symptoms of long COVID and so children will usually be referred directly to paediatricians for specialist advice.

• **Modelling of Long COVID QALYs**

Quality adjusted life years are a summary measure of longevity and health related quality of life which are used as a common currency for comparing different healthcare and policy interventions. One QALY is the equivalent of one year at full health. If people live longer, or have a better quality of life, then they gain QALYs, which can then be combined with cost data to look at cost effectiveness or value for money. UK Treasury Green Book methods value QALYs at £70,000 while NICE (The National Institute for Health and Care Excellence) are said to approve new health interventions where the incremental cost per QALY compared to the next best treatment is less than £30,000 (although they go above £30,000 in some cases, such as rare diseases).

A model has been produced by the Department of Health and Social Care (DHSC) which estimates the quality adjusted life years (QALYs) lost from COVID-19 infection including long COVID. The model estimates morbidity losses across the entirety of a COVID infection. The morbidity QALY losses for the number of individuals infected and surviving in Wales between February 2020 and January 2022 are estimated over a 1 year time period. Table 2 below shows the estimates for QALY loss during each time period of COVID-19 infection. The last row shows the QALY losses due to Long COVID, that is symptoms at 4 weeks up to 1 year post initial infection. This row is highlighted in orange due to the particular interest in the morbidity impact of Long COVID on the population. If we value QALYs at £70,000 based on UK Treasury Green Book, then the QALYs lost from long COVID in Wales would be valued at £1,120,000,000 for an 80% attack rate (meaning 80% of the population have been infected with COVID-19) and £1,428,000,000 for a 100% attack rate.

Table 2: Estimates for QALY losses due to morbidity impact of COVID-19 in survivors February 2020- January 2022

	Scenario 1: Using ONS, ICL and MRC BSU infection modelling	Scenario 2: 40% attack rate	Scenario 3: 80% attack rate	Scenario 4: 100% attack rate
Morbidity QALY loss for survivors over 1 year- total	19,000	13,000	25,000	32,000
Morbidity QALY loss for survivors acute phase (Up to 4 weeks)	6,500	4,500	8,800	11,200
Morbidity QALY loss for survivors ongoing phase (4 -12 weeks)	6,700	4,600	9,000	11,400
Morbidity QALY loss for post-COVID-19 syndrome (12 weeks - 1 year)	5,500	3,800	7,300	9,300
Morbidity QALY loss for long COVID (4 weeks - 1 year)	12,000	8,400	16,000	20,400

A rapid review aiming to identify ‘What is the long-term impact of COVID-19 on the Health-Related Quality of Life’ has been published and found people who had an initial mild COVID-19 illness or were not treated in hospital can have a decreased HRQoL post-COVID. However, the extent, severity, and duration of this is not consistent of individuals with mild symptoms (or non-hospitalised).²⁷

- **Estimates of costs of long COVID**

For some people long COVID has impacted their working life. Of the respondents to the ONS Over 50s Lifestyle Study (13,803 adults with a response rate of 71.6%), of those in Great Britain who left their previous paid job due to the pandemic, 2% answered that this was due to developing long COVID.²⁸ In addition, data from the Opinions and Lifestyle Survey found that 30% of people in Great Britain who had long COVID felt it had negatively affected their work.²⁹ Survey participants who felt their work had been affected because they were worried about their health and safety were more likely to feel this way if they had long COVID compared to those who had not had COVID-19 or had COVID-19 without extended symptoms (15%, 10% and 10% respectively).

The Institute for Fiscal Studies (IFS) estimate that contracting long COVID reduces the likelihood of working any hours at all by 6 percentage points (prior to the pandemic, 63% of long COVID sufferers were working at least some hours, so this effect is equivalent to about one in ten workers with long COVID stopping work). Long COVID sufferers are currently not, however, significantly more likely to lose their job (just 1 percentage point, not statistically significant). Regression analysis by the IFS indicated that the entirety of the difference between the ‘working non-zero hours’ and ‘having a job’ results is driven by those with long COVID being more likely to be on sick leave.³⁰

Analysis looking at ‘The impact of Long COVID on the UK workforce’ suggests that 0.56% of the employed workforce may currently be affected by limiting long-lasting illness and disabilities from Long COVID, which may include ongoing or intermittent absence from work or limitations on the amount or type of work they can undertake. Due to the recency of the Omicron wave, it is suggested that the figure is likely to increase over the coming weeks and months.³¹

A report from the think tank IPPR suggests that absence due to illness including long COVID will result in an £8bn cost to the UK economy due to more than one million workers absent from the workforce with about 400,000 of these no longer working.³²

The economic inactivity rate had generally been falling since 1971, however, it has generally been increasing during the coronavirus (COVID-19) pandemic. The increase in economic inactivity since the start of the coronavirus pandemic has been largely driven by those who

²⁷ [What is the long-term impact of COVID-19 on the Health-Related Quality of Life of individuals with mild symptoms \(or non-hospitalised\): A rapid review | medRxiv](#)

²⁸ [Reasons workers aged 50 years and over left and returned to work during the coronavirus \(COVID-19\) pandemic, Great Britain](#)

²⁹ [Coronavirus and the social impacts of ‘long COVID’ on people’s lives in Great Britain - Office for National Statistics \(ons.gov.uk\)](#)

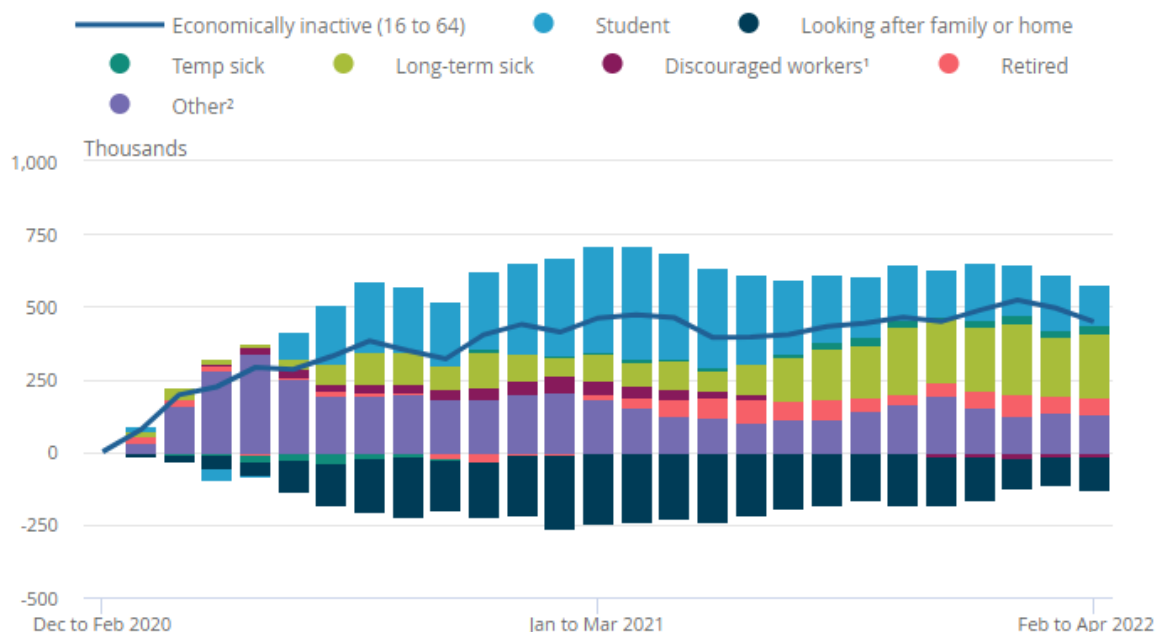
³⁰ [Long Covid and the labour market \(ifs.org.uk\)](#)

³¹ [Full article: The impact of Long COVID on the UK workforce \(tandfonline.com\)](#)

³² [Revealed: £8bn hit to UK prosperity as long-Covid and illness drives 400,000 more people from the workforce | IPPR](#)

were students, the long-term sick and those who were economically inactive for “other” reasons (see Figure 5).³³ It is therefore possible that long COVID has contributed to this increase with people having to take long-term sickness leave but more research is needed to confirm this.

Figure 5: UK economic inactivity by reason, people aged 16 to 64 years, seasonally adjusted, between December 2019 to February 2020, for each period up to February to April 2022³⁴



Source: Office for National Statistics – Labour Force Survey

Notes:

Discouraged workers are those who are not looking for work because they believe no jobs are available.

Other reasons for being economically inactive include those who are waiting for the results of a job application; have not yet started looking for work; do not need or want employment; have given an uncategorised reason for being economically inactive; or have not given a reason for being economically inactive.

Source: Office for National Statistics – Labour Force Survey

• **Equality impacts**

There are several characteristics which research has shown makes people more likely to suffer symptoms of long COVID, these include age, sex, area of deprivation and employment sector.

In Wales the age group with the highest number of people suffering symptoms of long COVID is those aged 50 to 69 years (estimated 38,000 people) followed by those aged 35 to 49 years (estimated 30,000 people). This is different to the age groups who were most likely

³³ [Employment in the UK: June 2022](#)

³⁴ [Employment in the UK - Office for National Statistics \(ons.gov.uk\)](#)

to die from COVID-19, which are the over 80s. If long COVID symptoms become a long-term condition, these age groups could require treatment and care for many years.

Of the people suffering from long COVID symptoms in the UK, 42.4% were males and 57.6% were females. This could be partly due to the higher number of females working in the health and care settings. In line with this, results from the ONS COVID infection Survey also found that those working in the social care employment sector had the highest estimated percentage of people with symptoms of long COVID (5.47%). Followed by the health care employment sector, with 4.63% of people. Teaching and education ranked third in the percentage of people with long COVID (4.38%).

It is estimated that 0.63% of the UK population suffer with long COVID symptoms and feel their activities are limited a lot by the condition. Long COVID is not currently recognised in the definition of a disability under the Equality Act 2010. Some people believe the condition should be in order to provide support to those suffering and are campaigning for this. NASUWT The Teachers' Union are one of the groups spearheading this campaign.

The likelihood of experiencing long COVID appears to increase in people living in more deprived areas. The percentage of people with long COVID in the most deprived areas was 3.84% compared to 2.67% in the least deprived areas. In an article relating to the pandemic more broadly it was identified that poorer communities have been more vulnerable to severe disease once infected because of higher levels of pre-existing illness.³⁵ As some research has shown that people with severe cases of COVID-19 are more likely to develop long COVID, this could explain the higher numbers of long COVID in more deprived areas.

• **Conclusion**

As the number of people suffering with symptoms of long COVID continues to grow in Wales, research is providing insights to identify the symptoms and treatment of the condition. Surveys of those with self-reported long COVID have shown that some characteristics indicate whether a person is more or less likely to suffer long COVID following a COVID-19 infection. These characteristics include age, sex, employment sector and level of deprivation a person is living in. Vaccination status is also an indicator, with those who have received vaccines for COVID-19 less likely to develop symptoms of COVID-19. Fatigue and respiratory problems are common symptoms reported by those with the condition. Treatments are in the early stages but are being developed, for example through the Adferiad programme in Wales.

The data available in relation to long COVID is growing rapidly which allows for more understanding of this relatively new condition. Some future aims for the next steps for research re detailed in the future research questions below.

• **Future research questions**

These research questions are only initial ideas and would need to be shared and agreed with research funders as part of any research priority-setting process.

Does long COVID impact on an individual's life expectancy as well as on morbidity?

³⁵ [Poverty, health, and covid-19 | The BMJ](#)

How does the risk of long COVID change with subsequent infections and with an individual's history of vaccinations?

Do antivirals for COVID-19 reduce the risk of long COVID?

As more variants begin to circulate, are people more likely to get long COVID over time if they are re-infected with different variants?

What are the outcomes of treatment trials for long COVID?

Are people more likely to have post viral syndrome after contracting COVID-19 compared to other illnesses such as flu?

What is the long-term impact of long COVID on the labour force and the economy?

Are there genetic risk factors for long COVID – does it run in families?