

BTS guidance for health care professionals in relation to shielding

The COVID pandemic has resulted in major and unprecedented restrictions on personal freedoms. As the prevalence of circulating virus falls, in the UK and much of the world, it is appropriate to consider relaxation of some of those restrictions. Opinions on how far and how quickly to relax the restrictions have been both varied and widely discussed. Unfortunately this has led to confusion and significant anxiety for some. Here we try to clarify the broad principles on which decisions can be based.

It is important to recognise that there are two types of restriction:

- The restrictions that apply to the whole population
- Special additional restrictions that apply to individuals at higher risk

Restrictions that apply to the whole population

Whether enshrined in law or not these restrictions really should be regarded as '*compulsory*'. Whilst these restrictions will offer some protection from infection for individuals who comply, the principal purpose of these restrictions is to protect society as a whole. They slow down the spread of the virus by reducing person to person contact and therefore reduce the average number of people an infected person is likely to pass on the virus to – the 'R' number. Unless R can be kept < 1 then the number of cases at any given time will rise, in fact rise at an ever increasing rate. Although many individuals may have mild or no symptoms, a proportion of this ever increasing number will be critically unwell and require hospital care. Very quickly the number of very sick could exceed hospital capacity and people could die unnecessarily. Thus far, in the UK with the great good will of the general population, despite unprecedented curtailment of civil liberties people have been generally compliant and we have managed to avoid overwhelming the health service.

Special additional restrictions that apply to individuals at higher risk

Like everyone else, patients at higher risk from infection must comply with the restrictions that apply to the whole population - for the same reason the whole population must comply. Those restrictions remain '*compulsory*'. However, some individuals have a greater personal imperative to avoid infection and have been subject to additional restrictions, beyond those imposed on the general population. Adoption of these additional restrictions is known as shielding.

For those currently shielding, concerned about their personal 'COVID risk', it is worth remembering that:

'COVID risk', the risk of becoming seriously unwell with COVID, is the product of two separate risks:

A x B

A. Risk of getting infected

X

B. Risk of becoming seriously unwell if infected

Risk B, the risk of becoming seriously unwell if infected, is a risk over which we may have limited control. However it is worth remembering personal behaviour can have an enormous impact on A, the risk of acquiring the infection in the first place. It is clear therefore, we can all exercise a significant degree of control over our overall COVID risk.

Before we discuss special shielding restrictions, let us not forget the importance of simple hygiene measures in reducing the chance of infection.

- Wash your hands frequently with soap and water for at least 20 seconds or use a hand sanitiser. Do this after you blow your nose, sneeze or cough before you eat or handle food and always immediately when you return home
- avoid touching your eyes, nose, and mouth with unwashed hands
- cover your cough or sneeze with a tissue, then throw the tissue in a bin
- clean and disinfect frequently touched objects and surfaces in the home
- Wear a face mask in indoor public spaces especially when social distancing is not possible

Shielding Restrictions

Shielding Restrictions are additional restrictions, beyond the compulsory restrictions imposed on the general population.

Two things are apparent:

- The extent to which an individual needs to go to reduce the risk of being infected will likely depend on their personal risk of becoming very unwell if infected.
- As these additional restrictions are primarily about protection of the individual, they are subject to personal choice.

Ultimately therefore, the extent to which an individual restricts their activities, beyond the general restrictions imposed on the population as a whole, is a decision for that individual patient - ideally in discussion with their doctor and supported by some evidence on personal risk. Patients can then weigh up the extent to which they are prepared to adopt restrictions on their life (which may have economic as well as social implications) in exchange for risk reduction.

The three key pieces of information that are needed to help individuals make a balanced decision:

1. The current prevalence of the virus in the population. This relates to the chance of becoming infected if an individual does not adopt additional restriction on behaviour.
2. The relative risk reduction gained by specific restrictive measures.
3. The individual's personal risk of becoming seriously unwell if infected.

Some understanding of the changes in prevalence may be gained from the figures published daily on new COVID cases.

The relative risk reduction associated with specific restrictive measures will be closely related to the reduction in the number of opportunities to pick up the virus, either from direct human to human contact or contact with contaminated material such as door handles.

An individual's personal risk of becoming seriously unwell if infected remains difficult to calculate though we do have more information than we had at the start of the pandemic.

At the outset of the COVID pandemic we knew so little about the relative risks in different groups, that the blanket advice for anyone we thought could be at increased risk to 'stay at home' seemed appropriately cautious. It is clear now that not all individuals in the current shielding cohort share

the same degree of risk. Our understanding is still not as complete as we'd like but we outline below some data which may help guide personal decisions.

A prospective observational cohort study (1) characterised the clinical features of 20,133 UK patients in hospital with covid-19 between 6 February and 19 April 2020.

The most common major co-morbidities were chronic cardiac disease (30.9%), diabetes without complications (20.7%), chronic pulmonary disease excluding asthma (17.7%), chronic kidney disease (16.2%), and asthma (14.5%). However, any inference on the relative risk conferred by the presence of these co-morbidities would be complicated by both the varying prevalence in the general population and the extent to which the specific patient groups had been shielding hitherto.

Mortality following admission with COVID was high. Excluding patients who were still receiving inpatient care at the time of reporting, 61% of patients were discharged alive, 39% died.

A number of characteristics were found to be independent risk factors for mortality. The hazard ratio for each of the characteristics is shown in the table below:

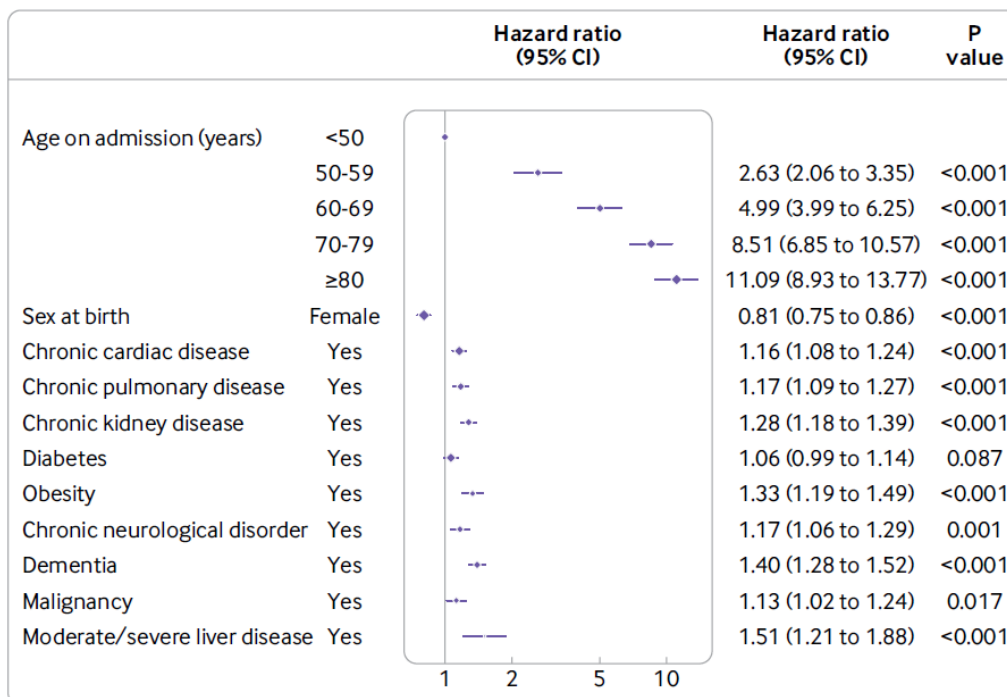


Fig 5 | Multivariable Cox proportional hazards model (age, sex, and major comorbidities), where hazard is death. Patients who were discharged were kept in the risk set (n=15 194; No of events=3911)

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These data give some indication of the additional risks faced by patients with specific co-morbidities. There are, however a number of caveats:

1. The data only report on hospital admissions, no community illness or, for example, care home deaths were included.
2. Some important co-morbidities, for example cystic fibrosis, do not appear in the data. That probably reflects the relatively low overall prevalence in the general population (compared to COPD say) and the extent to which these patients had shielded hitherto rather than an

absence of risk. Alternatively it may be that the benefits of young age mitigate the increased risk conferred by the disease, we just don't know.

3. There is no granularity in relation to severity of disease. It seems likely that more severe disease would be associated with increased risk.
4. No data on ethnicity are discussed.
5. These data report death not severe illness. That is of course the more significant outcome and the relative risk of death is likely to be a reasonable surrogate for the risk of developing severe illness.

From the table we see, for example, if admitted to hospital with COVID, having chronic pulmonary disease (excluding asthma) confers a 17% increased risk of death— even after correcting for other factors such as age. In the case of moderate/severe liver disease that increased risk is 51%. What is striking is the extent to which increasing age was a strong predictor of mortality in hospital even after adjusting for major co-morbidity. Compared with reference (age <50) being aged 50-59 conferred an increased risk of mortality of 163%. In those aged ≥ 80 the increased risk was > 1000%.

Many people will of course have more than one risk factor in the table above. The combined effect can be calculated as follows:

Take for example a 65-year-old woman with COPD. Her relative risk would be:

$$4.99 \times 0.81 \times 1.17 = 4.73$$

i.e. she would have a 373% increased risk of death compared with a previously healthy individual age < 50.

Summary

The decision to 'shield' i.e. comply with more restrictive measures than those imposed on the general population is a matter of individual choice.

It is not an 'all or nothing' choice. Patients choosing to leave home can still adopt a number of behaviours that offer important protection from infection, including following simple advice on hand washing.

Only the individual patient can determine what degree of restriction they are prepared to accept for the degree of risk reduction it would offer.

The decision for most individuals will be influenced by an estimation of their personal risk; this varies widely between individuals currently in the shielding cohort.

Knowledge on individual risk is not complete, though further data will emerge and clinicians should attempt to keep abreast of published evidence so they can offer the most up to date advice to their patients.

Dr Graham Burns
British Thoracic Society
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References

1. *Features of 20 133 UK patients in hospital with covid-19 using the ISARIC WHO Clinical Characterisation Protocol: prospective observational cohort study* *BMJ* 2020;369:m1985
<http://dx.doi.org/10.1136/bmj.m1985>

Useful links

PHE Guidance on shielding and protecting people who are clinically extremely vulnerable from COVID-19

<https://www.gov.uk/government/publications/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19>

RCPCH COVID-19 - 'shielding' guidance for children and young people.

<https://www.rcpch.ac.uk/resources/covid-19-shielding-guidance-children-young-people>

Estimating excess 1-year mortality associated with the COVID-19 pandemic according to underlying conditions and age: a population-based cohort study. *Lancet* 2020 [https://doi.org/10.1016/S0140-6736\(20\)30854-0](https://doi.org/10.1016/S0140-6736(20)30854-0)