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Guidelines for persons at risk of severe COVID-19 infection

- These guidelines are for individuals who could be at increased risk of serious COVID-19 illness if they become infected with the SARS-CoV-2 virus.
- Healthcare workers also need to be aware of this risk and:
  - test for the virus if symptoms indicate infection;
  - closely monitor these individuals if they fall ill, due to the risk of severe illness. It is also important to provide thorough follow-up care to ensure that any underlying diseases are handled properly.
- This document will be updated as needed and as new information comes forward.

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1. Easing of restrictions

- The first domestic case of infection in Iceland was identified on 4 March 2020. From the outset of the pandemic, many people in risk groups stayed at home. Many people were, in practice, in 'preventive quarantine'. The first wave of the pandemic subsided towards late April, and prevention measures were gradually relaxed.
- There were few infections from May until late July, when the domestic infection rate rose again. This was dubbed a 'second wave', and prevention measures were ramped up again. The infection rate rose again in September, sparking talk of a 'third wave'.
- The second wave was much less intense than the first, while the third was worse. Cases of person-to-person infection still persist. On 7 September 2020, the social distancing rule was reduced from 2 metres to 1. It was changed back again in October. Continued restrictions may be expected throughout the winter.
- Individuals in risk groups should keep in contact with their family doctor or specialists to assess their level of risk.
- Those in risk groups should continue to be cautious without avoiding interactions with others. The advice is to continue to be careful and to monitor the situation.
    - People should continue to observe basic infection prevention measures, i.e. regular handwashing/use of hand sanitiser, social distancing of 2 metres if possible and avoidance of large gatherings. Facemasks should be worn in certain situations. Remember that a distance of 2 metres is safer than a distance of 1 metre and that facemasks to not provide total protection.
    - Those who regularly come in contact with people in risk groups should follow the same rules and are urged to keep away if they have symptoms consistent with COVID-19.
    - Further information, including information on specific risk groups, can be found below.

2. Background

- COVID-19 is a new disease, and information on risk factors are still emerging. Based on the best available knowledge, specialists have defined conditions that could place individuals at risk of serious illness if they contract the SARS-CoV-2 virus.
- How great this increase in risk is for particular individuals is not known. Individuals need to assess their specific situation and review these guidelines with their doctor.
- Individuals at risk of serious illness are in general **not** more likely to become infected, and therefore, the same general advice applies to vulnerable persons as to everybody else: **Handwashing/use of hand sanitiser, general hygiene, social distancing of 2 metres and wearing facemasks where appropriate.**
- The most important extra piece of advice for people at risk of severe illness is to avoid close contact with others. In particular, they should avoid large gatherings and generally keep a distance of 2 metres from others. They should avoid coming into contact with people with symptoms consistent with COVID-19.
    - The main symptoms of COVID-19 are: fever, cough, shortness of breath, cold symptoms, bone and muscle pain, lethargy, sore throat, loss of smell and taste. Gastrointestinal problems can also sometimes be a symptom.

3. Who is at risk or potential risk of serious illness?

- **The elderly**: The risk increases once you reach the age of 65–70. However, risk also depends on your general fitness and any underlying chronic diseases you may have.
- **Cardiovascular diseases**: People with high blood pressure, coronary artery disease, heart failure.
- **Cancer**: People suffering from cancer and/or undergoing cancer treatment.
- **Chronic lung disease**: People with chronic obstructive pulmonary disease (COPD).
- **Impaired kidney function**: People with highly impaired kidney function and on dialysis.
- **Diabetes**: People with Type 1 or 2 diabetes.
- **Obesity**: People with obesity.
- **Organ transplant recipients**: People who have undergone a heart, lung or kidney transplant.
- **Pregnant women.**
- **People with severe mental health problems.**
- **Congenital immunodeficiency disorders** Severe and complex congenital immuno-deficiency disorders

4. Who is potentially at risk of serious illness?

- **People undergoing immunosuppressive therapy** for rheumatic and autoimmune diseases.
- **People with chronic muscular and neurological diseases** with impaired lung function.
- **Individuals with underlying defined severe congenital immunodeficiency disorders and severe acquired immunodeficiency disorders.**
- **Children with certain chronic diseases**.

5. What can you do to avoid infection?

The main mode of infection is person-to-person via **droplets or physical contact**. The virus can be transmitted when an infected person coughs, sneezes or wipes their nose and the droplets reach the face of a healthy individual or when their hands are contaminated by the droplets and they then touch their face. While infection is considered less likely during a simple conversation or other types of interaction, it is still possible. Bear in mind that infected persons may have no symptoms or very mild symptoms. Although droplet transmission is still considered most important, recent information indicates that **airborne transmission** contributes to the spread of the virus. Droplets carrying the virus can remain in the atmosphere for some time indoors and the virus can remain infectious. How long the virus remains in the air depends on temperature and humidity, and how long it remains on objects depends on the nature of the object and the environment. Infections have spread mostly in closed spaces in family homes, in workplaces and in other indoor locations. The more time people spend together in such conditions, the greater the risk.

People living with vulnerable persons must also pay close attention to their own hygiene and conduct, both within and outside the home. It is important to reduce the chances of exposing those at risk of serious illness to infection. It may even be sensible for household members who continue to work and participate in activities outside the home to significantly limit their interactions with at-risk persons and leave the home if they may have become infected.

General advice on hygiene and infection prevention:

- **Washing your hands properly** is the most effective way of avoiding infection. **Washing your hands** with soap and water is the best solution if your hands are dirty. You can also clean your hands using **hand sanitiser** after touching common surfaces, such as doorknobs and handrails. It is important to reach all parts of your hands when you wash them.
- Disinfectant wipes can be used to **wipe common surfaces** (such as doorknobs, handrails, lift buttons and shopping trolleys) before touching them.
- **Ventilation.** Although the virus is passed chiefly from person to person via droplets or touch, smaller droplets from an infected person's nose and mouth can remain airborne for some time, particularly when many people gather in a poorly ventilated space. It is therefore important to attend to ventilation and/or open windows and doors for air exchange. Fans should only be used near windows.
- **Avoid close contact with ill people**, e.g. people with cold symptoms, people who are coughing and sneezing.
- **Facemasks** are most useful for those who are ill, but they can also be useful for people in risk groups – at times when infection is spreading – if contact with unknown or ill people is unavoidable or where it is not possible to keep a distance of 2 metres, e.g. in waiting rooms when seeking essential healthcare, or in shops. For more information, consult the FAQs on facemasks, instructions on using facemasks and details of the various types of facemasks here.
- People in risk groups should avoid cleaning up after others, particularly outside the home. If this is unavoidable, use **disposable gloves**. When the job is finished, it is important to remove your gloves and to **wash your hands thoroughly**.
- People in risk groups should make efforts to live **as healthy a lifestyle as possible**: get good sleep (preferably 7–8 hours per night), eat healthily, take regular exercise if possible and take good care of your mental well-being.
- **Avoid** relying on alcohol and tobacco. Excessive drinking and smoking can weaken the immune system and negatively affect your long-term health and well-being.

If you fall ill, you should contact a healthcare centre (via the online chat function at heilsuvera.is or by phone) or the doctor who knows you best. If necessary, call the on-call service, *Laeknavaktin*, in 1700. In an emergency, call 112.

6. Social distancing

6.1 Healthcare services. If you need to seek healthcare services, try to arrive at the right time for your appointment, in order to avoid waiting in the waiting room any longer than is necessary. Regularly washing your hands is also important. At times when infection is spreading, you should wear a facemask in waiting rooms if it is not possible to keep a distance of 2 metres.

Clinics and healthcare centres have received guidelines to give vulnerable individuals appointments at times when there are fewer people in the waiting room and to take other measures to separate vulnerable individuals from ill persons in the reception area.

6.2 Public transport. It is better to use a private car or take a taxi than to use public transport. If you take the bus, you should do your best to keep a distance of 1–2 metres from other passengers, touch as few surfaces in the bus as possible and clean your hands when you get on board and, especially, once you have gotten off. You must wear a facemask on board. If you take a taxi, you should also clean your hands before and after your journey. Do your best to touch as few surfaces in the car as possible and wear a facemask if it is not possible to keep a distance of 2 metres from others. Taxis follow specific procedures in line with official infection prevention measures.

6.3 Work/School. The 2-metre distancing rule should be adhered to at work and at school (in accordance with current rules). Each individual person must assess their own circumstances, possibly in consultation with their doctor. In consultation with their employer or school authorities, at-risk people may also work or study from home, if possible. When the nature of your work prevents you from keeping the necessary distance from others, you should wear a facemask.

6.4 Social gatherings. When infection rates are low, you may attend gatherings, provided that attention is paid to hygiene and it is possible to keep a distance of 2 metres from other people. Extra care should be taken when attending large gatherings, whether work, family or social related. Most infections have occurred either in people's homes or where many people gather, such as workplaces, restaurants, pubs, gyms and at parties and large gatherings of any kind.

6.5 Leisure. The 2-metre distancing rule should be adhered to when attending the theatre, cinemas, shopping centres or other places where large numbers of people congregate. Establishments and organizers must ensure that people can keep a distance of 2 metres from each other at gatherings, in the workplace and during activities. Facemasks should be worn in shops and elsewhere where the 2-metre physical distancing rule cannot be adhered to.

6.6 Hair and beauty salons. Extra care should be taken in places where many people pass through during the day, even though there are not necessarily many people there at once, e.g. hairdressers and beauty salons. People working in such places come into close contact with many people each day. Both employees and customers should wear a mask in such situations. Staff should always wear their

mask even if the customer may need to remove theirs temporarily, e.g. for a facial treatment.

6.7 Shops/errands. If possible, it is better to have your shopping delivered and to conduct your business online or over the phone. You may need to get somebody's help to do this. A letter of proxy may have to be issued, particularly for tasks involving pharmacies, banks or post offices.

If you need to buy or retrieve items from busy places, e.g. pharmacy, supermarket, post office and bank, you need to pay attention to hygiene:

- Use personal shopping bags to place goods into or use gloves and/or wipe the handle of shopping trolleys with disinfectant wipes.
- If self-check-out kiosks are in use, it is important to thoroughly clean your hands after use. You could also use disinfectant wipes to clean touch screens and buttons. It is not necessarily preferable that shop workers handle each item purchased, unless the utmost levels of hygiene are observed.

6.8 Apartment buildings. Physical distancing of 2 metres should be observed in shared spaces in apartment buildings, such as in stairwells, laundry rooms,gardens or outdoor recreational areas. General hygiene should be observed when taking out the trash or collecting the mail from the mailbox. Avoid touching common surfaces as much as possible or wipe them over before touching. You should at least clean your hands afterwards.

6.9 House guests. If guests visit the home of a vulnerable person, everybody should keep a distance of 2 metres from each other. Vulnerable individuals should show the same caution around small children as around adults. A good way of spending time together is to sit outside on the balcony or patio, spend time in the garden or go for a walk.

6.10 Outdoor activities. Good mental and physical health is important. It can be nice to spend time on your balcony or in your garden or to go for a walk or a bike ride if possible. You should keep a distance of 2 metres from other people. You can exercise in your home or garden, under the guidance of a physiotherapist, if appropriate. Guidance on exercise routines is available on radio, television or the Internet. Indoor stairs can be used for a variety of exercises.

6.11 Sport/fitness. Attending fitness centres or group gym classes where there is close physical proximity is not recommended unless there is strict hygiene and 2-metre distancing is respected. The utmost care should be taken at swimming pools, especially in the changing rooms and hot tubs, where many people gather. Avoid touching common surfaces and follow the 2-metre distancing rule. Water in natural baths is not disinfected as swimming pools are (i.e. with chlorine), therefore special care should be taken when using natural baths.

6.12 Support. You can seek help, get information or discuss anything you wish, confidentially, by calling the Red Cross help line at 1717 or via the online chat function at www.1717.is. The help line is open to all 24 hours a day and is free of charge.

7. Further information on risk groups

7.1 Elderly people

Elderly people, especially those with underlying conditions, should follow the general advice on infection prevention given above and exercise caution in their interactions with others.

Age. The risk of serious COVID-19 illness increases after the age of 65–70 years. Medical literature is not consistent on age as a sole risk factor, but many of the conditions that increase the risk of serious illness caused by COVID-19 are also common in the elderly.

Though older people have a weaker immune system and develop more serious COVID-19 infections, pre-existing conditions and how they are treated are more relevant than a person's chronological age. Elderly people who are frail or have disabilities are at increased risk.

Underlying conditions. Most elderly people have more than one chronic condition. Although research on the risks associated with multiple underlying conditions and serious COVID-19 illness is still limited, a correlation seems likely.

Follow-up and continuity of medical care, as well as compliance with treatment, is especially important in preventing disease. COVID-19 symptoms can manifest themselves in an atypical manner in frail elderly people with multiple underlying conditions.

Social isolation and quarantine. Infection prevention measures and relevant guidance for people in risk groups has already proven to be effective. Many frail elderly people with multipleunderlying conditions have placed themselves in long-term isolation in their homes because of the pandemic. These individuals are at risk of various setbacks due to their underlying conditions. It is therefore particularly important to attend to one's mental and physical health.

Nursing homes Nursing homes and elderly day centres in Iceland have specific guidelines that they follow depending on infection rates. Nursing homes and healthcare facilities set their own rules on distancing, maximum numbers allowed to gather and external visitors.

7.2 Heart disease

People with cardiovascular disease are considered at risk of serious illness from COVID-19.

High blood pressure has emerged as a risk factor for serious illness. Whether this has to do with the disease itself or its treatment (ACE inhibitors/ARBs) is not certain. It is important to continue to take your medications as prescribed.

Coronary artery disease and **heart failure** increase the risk of serious illness, as do the common risk factors of heart disease, diabetes and obesity.

Treatment and follow up. Outpatient clinics have adapted to the pandemic situation, and medical consultations have been carried out by telemedicine/phone, where appropriate. Visits to outpatient clinics are subject to certain precautions. Procedures

such as echocardiograms, Holter electrocardiograms, cardiovascular imaging and other necessary procedures are carried out, and similar precautions are observed.

7.3 Cancer

Cancer patients or patients who are on or have recently completed cancer treatment (within the last 6 months) are considered to be at risk of serious illness from COVID-19.

- Many are immunocompromised because of their malignant disease and/or chemotherapy.
- Some viruses can cause serious illness in people in this group. Research on COVID-19 in cancer patients is limited. Research does not show that cancer patients are more susceptible to infection, but there is evidence of more serious illness when infected.
- If an individual contracts COVID-19 while on chemotherapy, the chemotherapy has to be postponed.

Those deemed most at risk are people diagnosed with cancer and who:

- have lung cancer and are receiving or have recently completed chemotherapy;
- have a bone marrow cancer, such as leukaemia, lymphoma or multiple myeloma;
- are receiving monoclonal antibody treatment;
- are receiving biological therapies;
- are on immunosuppressive treatment or have undergone a bone marrow transplant within the last six months.

At **lesser risk** are individuals with a history of treatable cancer who are only on preventive hormonal therapy that in general does not affect their immune system.

There are many different types of malignant diseases and therapies to treat them. These guidelines may therefore need to be adjusted for each individual.

For more information, see the website of the Icelandic Cancer Society.

7.4 Chronic lung disease

To control symptoms of emphysema and asthma it is important to continue maintenance therapy as prescribed and to know how to respond if symptoms worsen.

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Chronic emphysema. People with chronic emphysema are at risk of serious COVID-19 illness if they contract the virus and therefore need to follow the guidance given in this document.

Asthma is **not** considered a risk factor for serious COVID-19 illness. People with well-controlled asthma are therefore not considered a vulnerable group.

- This applies to those with mild asthma who use medications as required.
- This also applies to those with moderate or severe asthma who need maintainance therapy but haveminimal symptoms.

Smoking. It is important to stop smoking, due to the various harmful effects smoking can have. A recent review published by the World Health Organisation (WHO) indicates

increased risk of serious illness and death among smokers who require hospitalisation for COVID-19.

E-cigarettes. No research is available on COVID-19 infection and vaping, but the use of e-cigarettes may cause inflammation in the airways and lungs.

7.5 Impaired kidney function

As emerged early on in the COVID-19 pandemic, chronic kidney disease is a risk factor for severe illness, particularly **if kidney function is markedly impaired**.
The risk is particularly acute among patients on **dialysis** for end-stage kidney disease. This patient group more often than not also has other risk factors, such as:

- advanced age;
- diabetes;
- cardiovascular disease.

Kidney transplant recipients are at considerable risk and often have other underlying conditions (as for dialysis, above).

7.6 Endocrine disorders

Diabetes

People with type 1 or 2 diabetes are not more susceptible to infection than others. Regardless, infection prevention measures are particularly important for people with type 1 and 2 diabetes as they can fall seriously ill if infected with COVID-19. Data from the UK shows considerable higher risk of COVID-19 mortality in individuals with diabetes, both type 1 and 2. This is particularly the case for those without good blood-glucose control before the illness and people who are overweight or have complications such as heart disease or impaired kidney function. As expected, older people have worse outcomes.

Therefore it is important for people with type 1 or 2 diabetes to be aware of their situation and how to react in case of illness. Notibly most people with type 2 diabetes are overweight and many have high blood pressure. Complications (e.g. heart, kidney) are common with both types of diabetes.

Good blood-glucose control is not easy to achieve, and preventive measures might therefore include closer contact with your healthcare provider, undergoing a medical assessment of the situation if it is unclear and seeking further advice. Heilsuvera.is is a useful tool for contacting primary healthcare providers.

Younger people with type 1 or 2 diabetes, good blood-glucose control, normal body weight and no complications are not at increased risk of severe COVID-19 illness.

One of the main issues for people with type 1 diabetes is diabetic ketoacidosis (DKA), and it is therefore important to know the symptoms. Blood-glucose levels must be closely monitored, and the individuals concerned must know how to check for ketones in their blood or urine. People with type 1 diabetes should never stop taking insulin, and in the event of illness, the dose usually needs to be increased even if food intake is decreased.

Recent guidance on what to do if you fall ill (entitled 'Verklag í veikindum' in Icelandic) issued by the Endocrine Department of Landspítali University Hospital is available on the

department's website and Facebook page. You will also find videos on those topics on these pages (as well as on YouTube), and your healthcare provider can also provide information on these matters. In summary:

- Know your situation and your goals.
- Aim for good blood-glucose control.
- Know what to do if you fall ill.

See also the website of the International Diabetes Federation.

Other endocrine disorders

Information on COVID-19 and other endocrine disorders is limited, but people with glucocorticoid deficiency (primary or secondary adrenal insufficiency) could potentially fall seriously ill. There is currently **no** indication that there is more risk with COVID-19 than with other illnesses.

- It is important for hormonal supplements to be adequate before the onset of symptoms and to be increased once symptoms emerge.
- These instructions can be found on the website of the Endocrine Department of Landspítali University Hospital.

7.7 Obesity

Obesity is a disease bringing increased risk of serious illness from COVID-19. Research from abroad has shown that obesity is a significant risk factor for COVID-19 hospitalisation and for the need for ventilator treatment, especially for those with a BMI over 35 kg/m^2.

The reasons for people with obesity being at greater risk of severe COVID-19 illness are not known, but various hypotheses have been put forward:

- One possible explanation is the effect of obesity on lung function, as abdominal obesity (known as 'central obesity') impairs breathing, especially when lying down.
- Another hypothesis is associated with metabolic changes bringing about metabolic complications and greater insulin resistance.
- It is also known that obesity brings about chronic inflammation and that this could increase the severity of illness in infected people.
- Finally, many people with obesity also have high blood pressure or type 2 diabetes.

People with obesity should therefore take extra care when interacting with other people and continue to observe good infection prevention measures, as set out in this document.

See also the information card issued by the European Association for the Study of Obesity (EASO), in co-operation with the European Coalition for People with Obesity (ECPO).

7.8 Immunosuppression/congenital immunodeficiency disorders

Based on current knowledge, studies indicate that individuals with underlying congenital immunodeficiency can be divided into the following three groups in regards to their COVID-19 risk

1. Individuals with very severe and complex immunodeficiency disorders – High risk.
2. Individuals with a defined severe disorder – Some risk.
3. Individuals with an underlying defined immunodeficiency disorder that does not alter their life expectancy – Mild or no risk.

It is important to remember that many individuals with congenital immunodeficiency have multiple conditions. Thus, their underlying disorder can increase their risk of of various other diseases, some of which on their own are a risk factor with regard to severe illness as a result of COVID-19 (see above). These include a number of autoimmune and rheumatic disorders, lung and kidney diseases, as well as cancer and haematologic malignancies. These individuals, therefore, must take extra care . Thus, if an individual is in group 2 above and also has such underlying disease/s, that individual should be regarded as being at increased risk.

Severe and complex congenital immunodeficiency disorders

Individuals in this group must be especially protected and isolated from possible infection. They should not be in high-risk environments whether at work or in the community. Examples of congenital immunodeficiency disorders in this group include combined immunodeficiency, significant T-cell deficiency, antibody deficiency with an underlying risk factor and antibody deficiency in persons who are also on immunosuppressive therapy.

Defined severe immunodeficiency disorders

As a rule, deficiencies in this group involve a slight increase in the risk due to COVID-19. Individuals with these deficiencies do not generally appear to suffer more severely from the disease, unless they have other contributing risk factors. Examples of diseases in this group include common variable immune deficiency (CVID), chronic granulomatous disorder (CGD), IgG-immunodeficiency for which individuals are receiving immuno-globulin treatment intravenously or subcutaneously (IVIG/SQIG) or are receiving prophylactic antibacterial treatment without an underlying risk factor as well as deficiencies in complementary systems (mannose-binding lectin (MBL) deficiency not included).

Notably, based on current knowledge, relatively few individuals with cystic fibrosis have been infected and suffered severe COVID-19 symptoms. Nevertheless, such individuals should be classified as belonging to the group with defined severe immunodeficiency disorders.

Other congenital immunodeficiency disorders

Individuals in this group do not appear to have increased risk of contracting COVID-19 or more severe illness. General rules on infection prevention, therefore, apply to this group, as above. Examples of congenital immunosuppressive disorder in this group include haemochromatosis (HAE), IgG-deficiency or other specific antibody deficiency that does not require prophylactic antibodies or antibiotics, IgA-deficiency and MBL-deficiency.

Prophylactic use of antibodies intravenously or subcutaneously

It is important that intravenous or subcutaneous treatment with antibodies continue as usual in individuals undergoing such therapy for congenital antibody deficiency. If possible, efforts should be made to limit contact between individuals in group 1, above, with other patients and healthcare workers in outpatient services as much as possible. Changing such treatment to home-based treatment should be considered. As of yet, there are no clear indications that antibody treatment reduces the symptoms of COVID-19 or prevents infection from the SARS-CoV-2 virus in persons undergoing such therapy.

Immunosuppressed individuals

Individuals who are immunosuppressed due to medical treatment would generally be considered at similar risk as group 2 above. Immunosuppressive therapy can, however, vary greatly, and the risk must be assessed for each individual. It is important that the immunosuppressive therapy is not halted except in consultation with a physician.

Vaccination against COVID-19 in individuals with congenital immunodeficiency disorders

All those who are classified in group 1, above, and a large proportion of those with disorders that fall under group 2 may not receive live vaccines. The vaccines that are currently in development against COVID-19 are inactive vaccines and do not carry a risk of COVID-19 infection in persons with congenital immunodeficiency disorders or in others. The efficacy of the vaccines will probably vary in persons with congenital immunodeficiency disorders depending on their underlying deficiences and the effects of the vaccine. It is possible that individuals with a severe lack of antibody response and/or significant T-cell deficiency will show limited response to the vaccine. The vaccination of this group, however, is in general recommended, although it is extremely important to consult with spcialists in these disorders before the decision to vaccinate is made.

7.9 Immunodeficiency/organ recipients

Organ recipients (heart, lungs, kidney) are at increased risk of severe illness from COVID-19. They should follow official guidance on infection prevention and social distancing, in consultation with their doctor.

7.10 Immunodeficiency / rheumatic and autoimmune diseases

Current medical knowledge does **not** indicate that people on immunosuppressive therapy are more susceptible to COVID-19 infection or more at risk of severe illness when infected.

On the other hand, people with severely compromised immunity, e.g. due to biologics, with or without disease-modifying anti-rheumatic drugs (DMARD), high-dose steroids or other risk factors (see above, in respect of other groups), **may** be at greater risk of severe illness from COVID-19.

Rheumatic and autoimmune diseases can affect the functioning of the immune system and general health. It is therefore advisable, during the pandemic, to continue with prescribed immunosuppressive treatment for rheumatic diseases. This refers to:

- disease-modifying anti-rheumatic drugs (DMARD), such as methotrexate, sulphasalazin/Salazopyrin, hydroxychloroquine/Plaquenil, leflunomid/Arava, mycophenolate mofetil/Cellcept/Myfenax; and
- biologics, such as anti-TNF agents and JAK inhibitors (toficitinib/Xeljanz);
- steroids. These should in general be used in the lowest dose possible.

Whether any new treatment with immunosuppressants should be initiated at this time should be assessed on a case-by-case basis.

If a person is in quarantine, consideration should be given to temporarily suspending immunosuppressive therapy, i.e. DMARD and biologics. This should, however, take into account the chances of infection. Steroids should never be discontinued abruptly, especially in the case of long-term treatment. Instead, the dose should be gradually reduced to the lowest possible dose. It is prudent to contact your doctor, preferably a rheumatologist, regarding possible changes to medications.

If a COVID-19 infection is confirmed, it is advisable, as with other infections, to discontinue DMARDs and biologics until the infection has cleared.

- In the case of connective tissue diseases affecting the heart, lungs or kidneys, a rheumatologist should be consulted regarding treatment.
- Attempts should also be made to gradually reduce steroids, if possible, in consultation with a doctor (preferably a rheumatologist). When infection has cleared, a doctor should be consulted as regards when to resume medication.

See also the website of the European League Against Rheumatism.

7.11 Pregnant women

Pregnant women can contract COVID-19 in the same way as everybody else. Younger people are less at risk for serious illness, and since child-bearing age is usually 15–44, pregnant women rarely suffer from serious illness. They are nevertheless slightly more at risk of serious illness than people of the same age who are not pregnant.[1] Although the risk of serious illness is low, it appears that the risk of hospitalisation in intensive care and the need for ventilator treatment is three times higher than for people of the same age (1% as opposed to 0.4% for hospitalisation in intensive care and 0.3% as opposed to 0.1% for the need for ventilator treatment). Deaths are very rare, and there appears to be only a small additional risk of death as compared to people of the same

age. The risk factors related to serious illness are the same as for other people, i.e. advanced age, pre-pregnancy high blood pressure, obesity, heart disease and diabetes.

There is a somewhat higher incidence of Caesarean sections with COVID-19 infected women who are pregnant, which probably reflects the need to relieve pressure in respiratory failure. Cases of foetal stress have also been reported, which can also be caused by a serious illness of the mother.

A considerable number of premature births have also been reported. Stillbirths are very rare, and new-born babies have not shown signs of infection. Some babies contract the infection shortly after birth, but symptoms are usually very mild[2, 3].

- The precautionary rules recommended for the general public therefore also apply to pregnant women. Pregnant women must take extra care of themselves, in consultation with their doctor or midwife.
- Pregnant women should seek further advice from their healthcare centre, heilsuvera.is, their midwife or other healthcare professionals.

Supplementary material:

1. Zambrano LD, et al. *Update: Characteristics of Symptomatic Women of Reproductive Age with Laboratory-Confirmed SARS-CoV-2 Infection by Pregnancy Status — United States, 22 January – 3 October 2020. MMWR Morb Mortal Wkly Rep. ePub: 2 November 2020.*
DOI: http://dx.doi.org/10.15585/mmwr.mm6944e3external icon

2. Gale C, et al. *Characteristics and outcomes of neonatal SARS-CoV-2 infection in the UK: a prospective national cohort study using active surveillance. The Lancet Child & Adolescent Health, 9 November 2020. https://doi.org/10.1016/S2352-4642(20)30342-4DOI: https://doi.org/10.1016/S2352-4642(20)30342-4*

3. Woodworth KR, et al. *Birth and Infant Outcomes Following Laboratory-Confirmed SARS-CoV-2 Infection in Pregnancy — SET-NET, 16 Jurisdictions, 29 March – 14 October 2020. MMWR Morb Mortal Wkly Rep. ePub: 6 November 2020. DOI: http://dx.doi.org/10.15585/mmwr.mm6944e2external icon*

7.12 Severe mental health problems

1. According to recent studies, people suffering from severe mental health problems, such as severe depression, schizophrenia or bipolar disorder, are considered to be at greater risk of contracting COVID-19.
2. People suffering from severe mental health problems are also considered at risk of serious illness if they contract COVID-19. They are more likely to require hospitalisation, and their mortality rate is higher.
    a. People with severe mental health problems are fundamentally at greater risk of various chronic diseases, particularly cardiovascular and lung diseases. They suffer more severely from chronic diseases, and their life expectancy is 15–20 years shorter than that of the general population. They are less likely to seek medical help - or do so late - and the services available to them are less extensive than for other groups.
    b. People with severe mental health problems often have risk factors for serious physical illness. They are more likely to smoke, drink and take drugs. They are often overweight and exercise less than other people.

c. Social isolation increases the risk of relapse for people suffering from severe mental health problems.

3. Recent studies suggest that people who have contracted COVID-19 are at greater risk of suffering from mental illness following their COVID-19 illness.

7.13 Chronic muscular and neurological diseases

There is limited information on persons with muscular and neurological diseases and COVID-19 infection. It is therefore difficult to assess the risk for specific patient groups.

There is **no** indication that patients with neurological diseases, including those on immunosuppressive therapy, have suffered more severe illness from COVID-19.

That said, the number of reported cases is low, and diseases and treatments vary widely.

Patients with severe neurological diseases could be at greater risk, regardless of the underlying disease. These patients have significant disability and reduced lung function, e.g. MND/ALS. This group should adhere to guidelines for at-risk groups until further information becomes available.

Patients with neurological diseases but without significant disability who are on mild immunosuppressive therapy are probably not at greater risk and should follow advice for the general public.

7.14 Children

Children in specific risk groups

Although very few reports of severe COVID-19 illness in children have been reported, some children **may** cope with COVID-19 infection less well than others.

Children with COVID-19 infection will most likely develop mild symptoms, but the following underlying conditions could cause more serious illness:

- **Chronic lung disease**, especially:
  - cystic fibrosis
  - chronic lung disease as a result of premature birth
  - primary ciliary dyskinesia
  - certain other congenital lung disorders
- **Severe heart disease**, especially:
  - heart failure requiring medication
  - cyanotic heart disease with significantly reduced oxygen saturation (<90%)
- **Organ recipients (heart, liver, kidney):**
  - First 6 months after transplant, if treatment is proceeding according to schedule.
- **Severe chronic neurological diseases**, especially:
  - severe epilepsy (frequent seizures)
  - muscular, neurological and metabolic diseases affecting lung function

Children with type 1 diabetes are not considered to be at greater COVID-19 risk. In general, good blood-glucose control is important, as with other illnesses.

Parents with children in risk groups should be in contact with their family doctor or paediatrician to assess the risk in light of their specific circumstances.

See the website of Barnaspítali Hringsins for more information regarding children and young adults.

If a child / young adult has a suspected case of COVID-19, do **not** go directly to emergency Room at Barnaspítali Hringsins or any other healthcare centre or clinic. You should instead telephone your healthcare centre or the Laeknavaktin on-call medical service at 1700 and seek advice. In an emergency, call 112.

8. Things to remember for all groups

- Hand cleaning – with soap and water or hand sanitiser
- Distance – 2-metre physical distancing, facemasks in certain situations
- Positive thinking – avoid negative thoughts
- Sleep – adequate sleep
- Nutrition – healthy balanced diet
- Home delivery – groceries and services, if possible; get help if needed
- Daylight – get enough daylight
- Ventilation – open windows and doors, and air rooms regularly
- Exercise – indoors or outdoors
- Social network – communication with family and friends; use your phone and social media
- Medication – take all medications as prescribed
- Healthcare centre / Laeknavaktin – contact if needed

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