



Underlying Health Conditions, Turner Syndrome, and the COVID-19 Virus

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Are people with Turner syndrome (TS) at a higher risk of contracting the COVID-19 virus? This is a question we are receiving from many members of our community. We are providing this information to help people with TS determine if they have an underlying TS-related health condition that makes them more vulnerable to serious complications of COVID-19.

On March 31, 2020, the Center for Disease Control and Prevention (CDC) updated their statement about people who are at a higher risk based on developing information as this pandemic is studied.

The current website states:

People who are at a higher risk for severe illness

COVID-19 is a new disease and there is limited information regarding risk factors for severe disease. Based on currently available information and clinical expertise, **older adults and people of any age who have serious underlying medical conditions** might be at higher risk for severe illness from COVID-19.

Based on what we know now, those at high-risk for severe illness from COVID-19 include:

- People aged 65 years and older
- People who live in a nursing home or long-term care facility

People of all ages with underlying medical conditions, particularly if not well controlled, including:

- People with chronic lung disease or moderate to severe asthma
- People who have serious heart conditions
- People who are immunocompromised including cancer treatment
 - Many conditions can cause a person to be immunocompromised, including cancer treatment, smoking, bone marrow or organ transplantation, immune deficiencies, poorly controlled HIV or AIDS, and prolonged use of corticosteroids and other immune weakening medications.
- People with severe obesity (body mass index [BMI] of 40 or higher)
- People with diabetes
- People with chronic kidney disease undergoing dialysis
- People with liver disease
- People who are pregnant should be monitored since they are known to be at risk with severe viral illness, however, to date data on COVID-19 has not shown increased risk

Let's look at some common medical conditions associated with TS that are on the list for high-risk of severe illness from COVID-19:

1. People who have serious heart disease:

Heart disease found in those with Turner syndrome includes a bicuspid aortic valve and coarctation/narrowing of the aorta. **A well-functioning bicuspid aortic valve (BAV) will not likely put a patient at increased risk**, although heart disease is an underlying medical condition that can result in severe complications from COVID-19. *Please read the special statement regarding medications for those with aortic and vascular disease in the John Ritter Foundation for Aortic Health Statement on COVID-19 below.*

2. People with diabetes, particularly if not well-controlled

The incidence of Type 1 and Type 2 diabetes are four times and ten times greater in people with Turner syndrome, respectively. If you have been diagnosed with diabetes, please work with your healthcare provider to make sure the disease is well-managed and monitored.

3. Severe Obesity

Obesity is common in those with Turner syndrome. If you are severely obese (body mass index [BMI] of 40 or higher), you are at a greater risk of severe illness from COVID-19. A helpful tool to calculate BMI can be found [here](#).

4. Hypertension / High Blood Pressure

Hypertension is a risk factor in adults with COVID-19, especially when not optimally controlled and when associated with obesity and/or diabetes.

5. Liver Disease

The occurrence of cirrhosis of the liver is six times greater for people with Turner syndrome. Fatty liver disease is also common with TS. These can predispose a person to COVID-19.

Now, let's look at some common conditions in those with Turner syndrome that do not appear to be associated with a higher risk of severe illness in COVID-19:

1. Liver Test Abnormalities / Elevated Liver Enzymes

Liver test abnormalities and elevated liver enzymes are common in those with TS. Although the CDC states that those with liver disease may be at an increased risk of severe illness from COVID-19, mild liver enzyme elevations and mild fatty liver infiltration are likely not high-risk factors.

2. Kidney Structural Anomalies

Kidney structural anomalies affect 24-42% of those with TS. At this time, risks related to COVID-19 appear to be related to chronic kidney conditions, such as reduced kidney function or kidney failure, needing dialysis, or having a transplanted kidney are at a higher risk for COVID-19. Having only one kidney without reduced kidney function or chronic kidney conditions does not increase the risk.

3. Autoimmune Diseases

Autoimmune diseases are caused by an overactive immune system that attacks healthy cells as though they were foreign bodies. People with Turner syndrome often have autoimmune issues including thyroid disease, celiac disease, diabetes, juvenile rheumatoid arthritis, eye inflammation, and inflammatory bowel disease. If someone takes medication to suppress the immune system, they could be at a higher risk of serious illness due to COVID-19.

4. Lymphedema

In nearly all cases, lymphedema alone does not make one more susceptible to COVID-19. The only exceptions are those with rare primary lymphedema, who have extensive lymphatic abnormalities involving the chest and immune deficiency. *(source: UTHHealth Turner Syndrome Adult Comprehensive Care Center).*

Stress, Coping, and Anxiety

Fear and anxiety about a disease can be overwhelming and cause strong emotions in adults and children. The CDC suggests that coping with stress will make you, the people you care about, and your community stronger and that your response to the stress of this outbreak depends on your background, the things that make you different from other people, and the community you live in.

Many people with Turner syndrome experience issues with anxiety. It stands to reason that this may be exacerbated by the changes happening in your daily lives, the worry about your own health and the health of your families and friends, and the social isolation that has become the daily norm.

It's important that you take care of yourself. Take breaks from news stories. Help others cope with their stress. Take care of your body with exercises, deep breathing, and healthy eating. Make time to unwind doing something you enjoy. Connect with others. Talk with people about how you're feeling.

Connect with Us

We recognize these are unprecedented times, and we are all adjusting to a new normal. Our living rooms are now our offices, our workspaces, our classrooms, and if we're lucky, our social gathering spaces. While we're in these times of extreme social distancing, staying in our homes, and protecting those we love and our frontline healthcare workers by doing our part, we need to stay healthy and connected as best we can. It's okay to not feel okay – just reach out and check in. Check on your family, your friends, or a person you know who might be going it alone during this isolation. Pick up the phone and call.

We want you to know that TSSUS is here for you, too. You can count on us. You can call us, connect with us on social media, email us, or chat with us on Messenger. Check in – we want to know how you're doing.

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In Summary

COVID-19 is a new virus in the human species. Much is unknown about it, and more is being learned every day. If you look at risk factors as a score card, the more points one has, the greater risk they are at developing serious illness from COVID-19. The Turner Syndrome Society of the United States would like to remind each of you to carefully follow the guidelines of local and regional health agencies, as well as CDC and WHO guidelines for the prevention of infection including hand washing, social distancing, and staying home. Only you can mitigate your risk and exposure, and we encourage you all to be vigilant and safe.

Additional resources:

[The John Ritter Foundation for Aortic Health Statement on COVID-19](#)

[The Center for Disease Control and Prevention Coronavirus \(COVID-19\)](#)

[The Mayo Clinic BMI Calculator](#)

[The World Health Organization Coronavirus \(COVID-19\) Pandemic](#)

The information and other content provided in this communication or in any linked materials is not intended and should not be construed as medical advice, or a substitute for professional medical expertise or treatment. Turner syndrome is a variable condition, meaning that each person has varying clinical features. We encourage you to contact your physician with specific questions regarding individual risks.