

Purpose



The purpose of this statement is to provide guidance to childhood, adolescent and young adult cancer survivors related to risk and additional preventive measures for Coronavirus Disease 2019 (COVID-19). For this guidance, childhood, adolescent and young adult cancer survivors are defined as individuals of any age who were diagnosed with cancer before age 25 years and are at least one year following completion of primary cancer therapy.

Knowledge



Survivors, their caregivers, and health care providers should be mindful that the risk and course of COVID-19 in childhood, adolescent and young adult cancer survivors is not currently known. Thus, the information provided in this guidance is largely extrapolated from medical information from national health services and the World Health Organization (WHO) about COVID-19 in non-cancer populations. The IGHG and Cochrane Childhood Cancer are carefully monitoring the rapidly emerging medical reports about COVID-19 and will update this guidance as new information becomes available.

Recommendation 1

Who

is at
higher risk?



Based on medical information about COVID-19 in the general population, cancer survivors with the specific health conditions below may have a higher risk for a severe course of COVID-19, especially if they have more than one of these conditions. In addition to these comorbid conditions, a more severe course has been observed in older individuals, especially those 60 years of age or older, which may be because older individuals are more likely to have the chronic health conditions listed in the table. Individuals with conditions and/or use of drugs that affect immune system function may also be at risk for a more severe course of COVID-19 because of their overall higher risk of infection.

Conditions ¹ most frequently identified by national health services and WHO to increase risk for a severe course of COVID-19	Examples of cancer treatment-related conditions that may increase a childhood, adolescent and young adult cancer survivor's risk for a severe course of COVID-19
Heart disease, including but not limited to: <ul style="list-style-type: none"> Heart failure requiring medication History of myocardial infarction (heart attack) 	Heart disease, including but not limited to: <ul style="list-style-type: none"> Cardiomyopathy (heart muscle disease) following anthracycline therapy Coronary artery disease following chest radiation
Chronic lung disorders, including but not limited to: <ul style="list-style-type: none"> Chronic obstructive pulmonary disease (COPD) Severe asthma Any lung disease causing chronic shortness of breath, difficulty breathing or requiring oxygen therapy 	Chronic lung disorders, including but not limited to: <ul style="list-style-type: none"> Lung fibrosis (scarring) following bleomycin or chest radiation Chronic lung disease after bone marrow transplant
Diabetes	Diabetes following radiation to abdomen or pancreas
Conditions and/or use of drugs that affect immune system function, including but not limited to: <ul style="list-style-type: none"> Ongoing treatment for cancer Asplenia, splenectomy (absence, removal of spleen) Corticosteroids (prednisone, dexamethasone, hydrocortisone, but not topical preparations) Anti-rejection medications after solid organ transplant Immunotherapy for autoimmune disease (lupus, psoriasis, arthritis, etc...) 	Conditions and/or use of drugs that affect immune system function, including but not limited to: <ul style="list-style-type: none"> Ongoing treatment for a new or recurrent cancer Removal of spleen for cancer staging surgery Hyposplenia (low functioning spleen) following radiation to the abdomen History of blood/marrow transplant, especially if treated with total body irradiation before transplant History of organ transplant because of cancer or damage from cancer treatment (for heart, kidney or liver) Chronic graft versus host disease

¹ The IGHG and Cochrane Childhood Cancer will monitor the medical literature about all of these conditions and other conditions/factors less frequently identified by national health services or medical reports that may increase the risk for a severe course of COVID-19 including: kidney disease, hypertension, liver disease, obesity, pregnancy, blood disorders, neurological dysfunction; medications like ACE inhibitors and ibuprofen; and male sex.

Recommendation 2

What Measures

should be taken by survivors?



All childhood, adolescent and young adult cancer survivors should adhere to recommendations, like social distancing, frequent hand washing, etc, as advised by national and/or local authorities.

Recommendation 3

What additional measures

should be taken by survivors at high risk?



Survivors at higher risk of a severe course of COVID-19 (as described in the above list) should:

- Avoid visiting or working in public spaces where you may be exposed to COVID-19.
- Request reassignment to remote work activities (for you and for household members if possible) if your work is typically performed in public spaces.
- Encourage household members who are visiting or working in public spaces to take extra care to avoid exposure and transmission of COVID-19.
- Take extra care to avoid exposure to household members who have symptoms or have been diagnosed with COVID-19.
 - Isolate ill household members in the home or move to another location if possible.
 - If isolation or relocation is not possible, have ill household members wear masks.
 - Increase the frequency of hand washing and cleaning of hard surfaces with disinfectants.
 - Clean shared toilet and bathroom surfaces after every use.

Recommendation 4

What should be done by a survivor at high risk, who is ill?



Survivors at higher risk of a severe course of COVID-19 should:

- Seek medical advice early if you develop symptoms that could be related to COVID-19.
- Alert health care providers about your cancer history and other health conditions that have been linked to higher risk for a severe course of COVID-19.
- Call your doctor or emergency department for instructions if your symptoms worsen (e.g., fever, shortness of breath, difficulty breathing, confusion, etc...) and you feel you need to be evaluated.

Notes

IGHG: International Late Effects of Childhood Cancer Guideline Harmonization Group (www.ighg.org)

IGHG COVID-19 working group: Chairs: Leontien Kremer, Melissa Hudson. **Core group:** Saro Armenian, Rod Skinner, Matt Ehrhardt, Claudia Kuehni, Renée Mulder, Elvira van Dalen, Helena van der Pal. **Coordinators:** Lisanne Verbruggen, Yuehan Wang. **Members:** Edit Bardi, Claire Berger, Elio Castagnola, Adam Glaser, Riccardo Haupt, Lars Hjorth, Miho Kato, Miho Maeda, Monica Muraca, Paul Nathan, Vesna Pavasovic, Satomi Sato, Lillian Sung, Anne Uyttebroeck. **Reviewers v1.0 and members for next version:** Judith Gebauer, Jaap den Hartogh, Thorsten Langer, Wim Tissing.

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Summary of risk factors for severe course of COVID-19 in the general population, reported in medical information from 9 national health services and the World Health Organization (WHO).

n=10 Older age (United Kingdom, United States of America, The Netherlands, Switzerland, WHO, Canada, Italy, France, Japan, China)

n=8 Heart disease (UK, US, NL, CH, WHO, IT, FR, JP)

n=8 Lung disease (UK, US, NL, CH, WHO, IT, FR, JP)

n=8 Diabetes (UK, US, NL, CH, WHO, IT, FR, JP)

n=7 Active Cancer treatment (UK, NL, CH, WHO, IT, FR, JP)

n=6 Immune disorders or Organ transplant (UK, US, NL, CH, FR, JP)

n=6 Kidney disease (UK, US, NL, IT, FR, JP)

n=5 High blood pressure (CH, WHO, IT, FR, JP)

n=3 Liver disease (UK, US, FR)

n=4 Overweight (UK, US, IT, FR)

n=4 Pregnant women (UK, US, WHO, FR)

n=3 Hematological (blood) disease (UK, NL, US)

n=3 Chronic neurological condition (UK, FR, IT)

n=1 Males (IT)